On First Undertaking CardioPulmonary Resuscitation: a Philosophical Hermeneutic Inquiry

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ABSTRACT

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Introduction

CardioPulmonary Resuscitation (C.P.R.) is a critical clinical intervention widely recognised (Laws, 2001) to evoke stress in attending clinicians. Little is known about how junior clinicians (doctors) understand their early experiences in performing C.P.R., or whether their preparation could be improved.

Problem

Undergraduate medical students have traditionally reported anxiety (Duns et al., 2008) at participating in CardioPulmonary Resuscitation. A recent systematic review of best practice in C.P.R. education focused on clinical knowledge and skills, but not emotional preparation (Mosley et al, 2012). No study has critiqued whether doctors' pre-qualification anxieties align with their clinical reality. Less is known about the extent of their *post hoc* support needs.

Methodology

Previous studies of doctors' experience (Morgan and Westmoreland, 2002) have used exclusively quantitative data collection. Early qualitative data on young nurses' experience of C.P.R (Ranse and Arbon, 2008), which used a focus group method, has identified: the experience of a chaotic environment; inadequate post-C.P.R. debrief; and unrealistic rehearsal in training. This qualitative study has used 1:1 interviewing and a Philosophical Hermeneutic (Gadamer1975) lens to explicate how young doctors experience (and make sense of) their early attempts at C.P.R. The sociological framework of Symbolic Interactionism (Blumer, 1969, Charon, 2010, Mead, 1934) was deployed to offer a human interaction based interpretation of participants' accounts. An experiential learning theory (Jarvis et al., 2003) offered further insights into the dimension of experiential learning.

Results

Eighteen participants were interviewed over 18 months. Using NVIVO 9 software, a thematic analysis technique, and a hierarchical analysis ladder (Spencer et al., 2003), four major themes were identified:

1. Current C.P.R. education is, at a skills and knowledge level, comprehensive and adequate.
2. Simulation rehearsal practises higher responsibilities than those clinically experienced, and usually fails to accommodate the "ambient" conditions of the real event.
3. C.P.R. offers novice clinicians a variety of experiential learning opportunities about leadership and about professional expectations of personal resilience (stoicism) as a doctor.
4. Participant support needs are usually unique, contextually generated, and largely unrecognised. Almost invariably unidentified, these needs reflect a variety of emotional states experienced during C.P.R.: surreality; exhilaration; satisfaction; or distress.

Implications

This study has demonstrated the feasibility of 1:1 interviewing to generate deep, rich and granular accounts. Analysis through the lenses of Philosophical Hermeneutics, the sociological framework Symbolic Interactionism and the revised experiential learning theories of Jarvis offered unique perspectives and understandings of these experiences. The influence of "ambient" contextual conditions during C.P.R. has been partially, though not exhaustively, explicated. Whilst educational rehearsals should attempt simulation of reality, not all realities can be simulated. *Post hoc* support needs are unrecognised and educational responses unquantified. A modern duty of care to staff should require high quality interventions in three areas: *pre hoc* preparation; *intra hoc* conduct; and *post hoc* support.

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PREFACE

From the novel *War and Peace*, Pierre Bezukhov laments that after one of his lectures:

> *He…was struck for the first time by the endless variety of men's minds, which prevents a truth from ever presenting itself identically to two persons. Even those members who seemed to be on his side understood him in their own way, with limitations and alterations he could not agree to, as what he always wanted most was to convey his thought to others just as he himself understood it.*
>
> (Tolstoy: 357)

In this short extract from *War and Peace*, Leo Tolstoy (1865-1869) delineates not only the particular challenge for the presentation of this research but presciently offers an introduction into what Hans-Georg Gadamer would later categorise as the individuality of *wirkungsgeschichtliches Bewußtsein* or *historically effected consciousness* (Malpas, 2013).

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AUTHOR'S DECLARATION

"I declare that, except where explicit reference is made to the contribution of others, that this dissertation is the result of my own work and has not been submitted for any other degree at the University of Glasgow or any other institution."

Signature _____

Printed name _Peter John Marian Barton_____

CHAPTER 1: INTRODUCTION

Preamble

It was the end of a bright summer's day in early August 1977. In the gathering gloaming, the "buddies[1]" were returning from their usual watering holes. Inside the peeling corridors of the Royal Alexandra Infirmary (R.A.I.), Paisley, Scotland, a newly minted junior doctor began the first of many solitary descents to the Emergency Department (E.D.). His supervising doctor, the registrar, had gone home thirty minutes earlier; he was alone. He had just taken a phone call from Senior House Officer (S.H.O.) working there. A patient had presented with altered consciousness. A common occurrence in Paisley (when related to alcohol), this case seemed different.

Despite the doctor being a Junior House Officer (J.H.O.), the S.H.O.'s duty was to refer the patient to the J.H.O., who was at least 1 year their junior. This, the least experienced member of the *on call* medical team was able to admit the patient to the wards, but not the S.H.O. in E.D. Their opening words to the J.H.O. were:

> *I don't really know what is wrong with this man but he is quite confused and according to his friends he can usually handle his drink. He is not like most drunks I see here.*

The resident's heavy feet made slow, yet unfailing, progress. He remembered that, as a final year student in the R.A.I., he had often shadowed his immediate predecessor on this same journey. Dr. Tommy had always oozed self-confidence. His own mind now raced ahead…visualising the patient. He rehearsed his first actions. There were many competing thoughts:

[1] A "buddy" (or "buddies", pl.) is the colloquial expression for people from the town of Paisley in the West of Scotland.

Does the patient have a brain tumour? How would I recognise it? If I needed to call someone outside the hospital urgently how would they help me? Could I narrate a coherent story and not appear stupid? Should I deal with this myself? What if, in the midst of this emergency, another emergency arose, like a cardiac arrest in the coronary care unit?

Later journeys to the E.D. became progressively easier. If needed, he would run there, prepared to deal with whatever he met. He would, with time and experience, quell his fears, rely on his hard won instincts, and become trusted by many of the more experienced doctors in the E.D. He became polished at initial patient assessment (history taking and examination) and adept at processing their admission to the wards. He could manage competing clinical issues across a variety of different wards; he would never lose his fear of running a cardiac arrest and leading CardioPulmonary Resuscitation (C.P.R.).

Importance and professional significance/relevance of the research topic

Medical undergraduates are placed in positions of high responsibility (Hanson, 1984, Spearpoint et al., 2000) immediately on transitioning to clinical work. Currently this is as a Foundation Year 1 doctor (previously known as a resident or J.H.O.) in the U.K., or as an Intern in Australia. This responsibility can be maximal during CardioPulmonary Resuscitation, where clinicians take over the breathing of patients, through assisted respiration (previously known as mouth-to mouth), and the output of their heart, through external cardiac massage (chest compressions). Undertaking C.P.R. is acknowledged to be a stressful experience (Smyth and Perkins, 2011, Bjorshol et al., 2011). Medical undergraduates (and those involved in their preparation) have consistently identified low levels of confidence in their competence in dealing with patients who need resuscitation (Hunskaar and Seim, 1983, Casey, 1983, Graham et al., 1994 a, Graham et al., 1994 b, Graham and Scollon, 2002, Phillips and Nolan, 2001b, Scott et al., 2003, Duns et al., 2008).

The long-term effects on clinicians of unsuccessful C.P.R. attempts are not known, especially where the responsibility has rested with inexperienced staff. Data from the researcher's Ed.D. trial study (in which mature physicians recalled and interpreted their *best and worst day in early clinical life*) showed that doctors carry not only the memories themselves, but also significant learning from these events throughout their professional lives. Some brief discussion of the tentative results of the trial study will be touched in Chapter 3 (Methodology, page 95) as it pertains to the planning of this doctoral study.

This study will not explore deeply the long term consequences of "emotional debt" (Simon, 2016). This concept will however be raised as part of a general consideration of why enhancement of preparation for resuscitation is important and in particular with respect to post hoc support provision. In a similar manner, whilst there continues to be a focus on the issues associated with clinician "burnout", for example in a recent meta-analysis of this issue in

surgeons (Oskrochi, 2016: 650), this research is situated before burnout eventuates. Though indebtedness and burnout are legitimate concerns, and whilst the analysis will consider them in the potential negative effects of bad experience, this study was however designed to gather empirical data on what junior doctors' actual experiences were. This had not be done previously.

Using the recent experiential accounts of young clinicians, this study interpreted how meaning was generated from the specific clinical intervention of C.P.R. Where relevant, the study included the experiences and perspectives of older clinicians, particularly where they had significant clinical experience of C.P.R., or where there was broader value in hearing their voices. The study also reported on the development of young clinicians' professional identities with reference to their witness of C.P.R. leadership. The study focussed on experiences of lasting importance, which are those differentiated within Philosophical Hermeneutics as being *Erlebnis*, or personally felt experiences.

> *Something becomes an "experience" (Erlebnis) not only insofar as it is experienced, but insofar as it's being experienced makes a special impression that gives it lasting importance.* (Gadamer, 1975: 56)

All humans undergo experiences in the very act of living. These experiences however are the inevitable and unvalued result of being alive. Philosophical Hermeneutics terms these as *Erfahrung* or everyday experience (Gadamer, 1975: 76). *Erfahrung* is not subject to the same internal critique as *Erlebnis: Erlebnis* is always noteworthy to the self. The study explores the personally valued experience of recent medical graduates from several avenues. The two main research questions were:

1. How do the participants' expectations of participating in C.P.R. align with their experience of it?

2. What potential improvements could be made to the current preparation of medical undergraduates for C.P.R.?

In clinical practice others have shown that practitioners move beyond the *sanitised version* (Ranse and Arbon, 2008) of the world presented in simulation training into a messier existence, where the individual is more intimately immersed in a variety of interpersonal relationships or interactions with more experienced medical and nursing colleagues. The effect of this proximity, demonstrated by the experiences in the trial study (see below) and repeated in a different context in this study, offers influential personal witness of professionals in action.

The researcher's trial study confirmed that part of the narratives of mature clinicians related to their emotionally charged, sociological perspectives at the time of their experience; the sense they made was both sociologically framed and emotionally encoded. To respond to this expected dimension this study formally sited itself within a sociological framework: Symbolic Interactionism (S.I.). A detailed exposition of S.I. is offered within Chapter 3 (Methodology). Briefly now however, and by way of introduction, Symbolic Interactionism (Blumer, 1969) has three central tenets through which it interrogates social action and understanding:

1. "Humans act toward things on the basis of the meanings that the things have for them."
2. "The meaning of such things is derived from, or arises out of, the social interaction that one has with one's fellows."
3. "These meanings are handled in, and modified through, an interpretative process used by the person in dealing with the things he encounters."

(ibid: 2)

The third study question analysed the experiences from a sociological framework. This was a less explicitly framed question than number 1 and 2, and was set out as:

3. What additional insights are offered when participants' narratives are analysed using the sociological framework of Symbolic Interactionism?

The fourth question emerged organically from the relationship between the researcher and participants. The study has throughout adopted the axiological stance where the participants and researcher were in a mutually respectful and collaborative endeavour. Collaborative working and organic adaptation of researchers' behaviour is within the feminist posture advocated by Oakley (1981), a midwife and researcher who defended her inability to remain immured behind her research persona when her participants clients contacted her *post hoc* with support needs. Furthermore, a substantive body of opinion cites qualitative research within a feminist understanding-based construct of the world, contrasting this explicitly with quantitative male-orientated knowing (Westmarland, 2001). Despite the researcher being male, and therefore it being highly questionable whether he can truly adopt a feminist stance, the research has assumed a weak feminist stance, though adoption of a non-hierarchical stance, which advocated reciprocity through the recognition of the agency of the participants. The researcher consciously stepped "outside the formal role of neutral asker" (Legard et al., 2003: 140). Through this interaction, a fourth and supplemental research question arose during the interviewing and was included, see Chapter 4 (Data Collection):

4. What are the post CPR support needs of young clinicians?

Throughout the analysis, the revised experiential learning theory of Peter Jarvis was deployed to understand how the participants were processing or coming to terms with their experiences. This theory is outlined in Chapter 2 (Literature

Review) and described in significant detail in Chapter 7 (Discussion), where it is applied to the analysis.

Potential benefits of this study

The main projected benefits from the proposed study are to illuminate how novice medical practitioners perceive and understand the act of performing C.P.R. The research offers insights to guide preparation of the affective domain, and thus complements existing skill and knowledge preparation. In addition to this *upstream* benefit for future graduates there are *downstream* benefits: an improved understanding about novice practitioner's experience would assist their mentoring in the workplace and personal development planning or emotional support, with the potential to reduce their emotional indebtedness. The study has listened to the personal accounts of their witness of resuscitation (whether they actively participated or simply observed others) and analysed personal meaning and learning about what these events represent, especially when themes of professionalism (their role and identity) are discussed. These aspects of professionalism represent the "selves" that are shown to others, in the case of their professional role, and known only to their own inner self, in the case of their personal identity.

Rationale for studying the single craft group of junior doctors

1. Relative isolation and solitary work practice. Despite the changes in modern work practice one aspect of their work has remained similar to this researcher's early life clinical life. Junior doctors continue to work in rotations as individuals within clinical settings. In distinction to nursing colleagues, who work predominantly as teams within wards, junior doctors have retained a singular working practice. Though rarely attending a cardiac arrest on their own, they do not have the natural opportunity that exists within the nursing world for group debriefing.

2. A priori position. Researchers in previous studies, most notably the two qualitative studies, Ranse and Arbon (2008) and Meerabeau and Page (1999) specifically studied those individual craft groups in which they are trained and based vocationally. For this study to have some comparability it was important to generate data therefore from a distinct homogenous group rather than a heterogeneous one of mixed disciplines. Furthermore in almost all the studies identified in the literature review it was highly unusual to find multi-disciplinary studies. Thus the norm of existing C.P.R. research is uni-disciplinary (Casey: 1983 and 1984, Buss: 1993, Duns: 2008, Greenstein et al, 2011, Clark: 2012) rather than multidisciplinary (Gass et al, 1983). From a practical perspective it is likely that researchers study groups within their own locus of interest. Thus, for these reasons and also because the one to one interview methodology was unproven (until now), researchers studied groups that they had an operational relationship with. This matter is addressed more fully in the axiological section of the methodology.

3. Influence of results: from a practical perspective, this researcher's position in undergraduate education means that he has a potential to influence the future learning and preparation of young doctors in training. It would be questionable whether a single researcher from another discipline would gain much traction on other healthcare craft group. It seems more credible for a study with multi-disciplinary participants to undertaken by a multi-disciplinary group of researchers; their findings would then be more globally accepted.

4. Differences in practitioner role: From the literature, one major difference across the disciplines relates to levels of individual decision making. The particular worry of young doctors about decision making during CPR, it is an existential and defining aspect of this research itself. Junior nurses have reported a different set of anxieties (Ives: 2002) to that recorded for

junior doctors (Duns: 2008). Nurses will usually be responsible for initiating a call (Code Blue). They will follow documented guidance on when to do (Dot Not Actively undertake C.P.R.). It is rare for them to decide on the nature of drug interventions and highly improbable that they would make the final decision of when to stop C/P.R. These are exclusively the domain of doctors.

5. Researcher's expertise: As a doctor this researcher anticipated being able to understand much of the narrated experience of the study participants. However, whilst this would have facilitated the understanding of the narratives of the medical participants, it could be argues that the limited capacity of the researcher to understand the particular world of other non-medical practitioners would have possibly meant that the level and depth of analysis would have been asymmetric across the various disciplines.

6. Training: whilst it is often the case in professional life that C.P.R. updates and refresher courses can be multi-disciplinary, this researcher's experience is that at an undergraduate level almost all education is uni-disciplinary. Healthcare education rarely finds time within its individual crowded curricula for multi-disciplinary education.

Personal relevance of subject matter

The researcher was the junior doctor on that night narrated in the Preamble. He still remembers vividly that moment on the staircase and the difficulty faced in taking those first steps…down into a different world and life. Remembered too is the overwhelming apprehension that accompanied that first short walk to the Emergency Department. Subsequent journeys imperceptibly became easier; later on, running shoes were worn on call, so he could get where he needed to go as fast as possible.

Of the early memories of professional life, those first lonely steps on the stairs in the R.A.I. have remained one of the clearest to this day. The overriding sense was of a heavy, stifling responsibility, of being ill-prepared for this duty. It is unclear why this was. Final year medical students then (though not now) could work as paid "locums" for J.H.O.s on holiday and I had done more than most of my peers. I had practised regularly doing a J.H.O's job, but always under loose supervision.

I had practised physical examinations on many patients in my three clinical years, by doing extra work at night and at weekends. I was acknowledged to be one of the most competent of my peers at obtaining blood samples or of "*putting up a drip*"; in those days these were doctor tasks. However, I had not experienced all of the important clinical emergencies that we had been taught in lectures. Where previously encountered, I knew what to do and was relatively confident about my abilities. Where the clinical particulars were new or covered theoretically, I felt I was on thin ice. And too, there was the omnipresent and tangible fear of making a mistake, or of simply not knowing that which should be known: a seamless transition, from the undergraduate anxieties of failing examinations, to the postgraduate realities of failing patients, and also myself. Yet, C.P.R. always gave me a unique anxiety.

Nor was I alone in these anxieties. Several months after beginning residency, fellow doctors discussed a story of a colleague who had graduated with us. The J.H.O. *zeitgeist* held that he had not been able to cope with the pressures of being first on-call: he had been found hiding in a cupboard. This apocryphal story is interesting from several perspectives. Firstly it was told in a way that emphasised that he had failed to *man up,* which we then personally contrasted with our own experiences of meeting similar pressures and not buckling. And secondly, and more unfortunately, it failed to be understood as a story where compassion and concern were needed for a colleague in trouble.

Thus, from the start, as junior doctors, it was apparent that the job was about caring for patients, but not caring about ourselves or our peers. In the years since I never asked the individual about the accuracy of this story. I know that he retired recently (mid-2013), after a distinguished career in the N.H.S. as an anaesthetist: an atypical branch of medicine for the faint-hearted.

At that time, more senior doctors were available as back up: the next staff level up, the registrars, all lived locally, within a five to fifteen minute drive of the hospital. They remained in the hospital, supervising and managing, until 10.00 p.m. or so, and then were available through the night for telephone advice and, if required, would come into the hospital to take over. The junior doctor's task was to make a correct initial clinical assessment, organise appropriate initial tests (bloods and x-rays), and keep the patient alive for the short time that lapsed between a phone call and their often breathless arrival on site. Of all the clinical emergencies that I could face, the one that I dreaded most was a cardiac arrest, where I would be required to lead the resuscitation effort.

In my 6 months in the R.A.I. I attended one to two C.P.R. episodes per month: sometimes in the coronary care unit, sometimes in the wards. In the daytime, it was as part of the arrest team, and supervised by senior colleagues. These events were less memorable. When the events occurred in the middle of the night, I was the only doctor in initial attendance. These unsupervised events were all failures: every patient died. The matter was always over by the time the on-call registrar arrived in hospital, coat tails flapping.

Their main task then was to review the deterioration of the patient, the initial management (the interventions and drugs used), and to reassure us both that it was for the best as the patient was inevitably on their "last legs". Their initial telephone advice and my hands-on management was the best, under the circumstances, that could have been done; but, I never really believed them. At the time young doctors acknowledged such psychological tolls as the

"John Wayne" philosophy of medicine. It would have been summarised as "a junior doctor's gotta do what a junior doctor's gotta do."

My intern/resident cohort was like every cohort before and perhaps since, fearful of how they would meet and cope with clinical reality. In 1977, writing about reflective practitioners (Schön, 1983) was uncommon, as was literature on professionalism (Eraut, 1994). If self-awareness had been recognised it would probably have been heavily distrusted, or been confused with Eastern mysticism. No young doctor wanted to admit being unable to cope with their transition to professional life. *Coping strategies* as a term had yet to be coined, let alone fully conceptualised. For most junior doctors, stress relief usually involved some form of what could loosely be termed an "armed" response: the arms of a loved one; the local brewer's arms; or the energetic use of arms (and/or legs) in physical recreation; or indeed any combination of them.

Although however, the researcher retains the enduring effects of his early C.P.R. cases, medical students now graduate into a different world. They have had a different preparation and graduate to meet modern expectations. Clinical medicine has changed. Many more staff (paramedics, nurses, physician assistants, physiotherapists) are now trained to offer CardioPulmonary Resuscitation. The training manikins and the simulation scenarios offer high fidelity (Soar et al., 2003). The complexity of the decisions and options offered during practice scenarios rehearse reality (Morley, 2010, Leman and Jacobs, 2011, Jacobs and al., 2004). The preparedness of staff, coupled with the quality of Automated Electrical Defibrillation (A.E.D.) devices, see Chapter 2 (Literature Review), for detailed exposition on this, at their disposal has never been higher.

This technical improvement in capability and preparedness has however been matched by the public's awareness of C.P.R. as a medical emergency through a constant drip feed of medical high drama TV (*Chicago Hope* (1994-2000), *ER* (1994-2009), *Casualty* (1986- current) and *Holby City* (1999-current). Inevitably in such dramas, designed as they are to entertain through maximising moments

of tension with critical decisions and interventions, clinical fidelity suffers at the hands of entertainment ratings.

Unfortunately, like the media portrayals of many clinical interventions, C.P.R. is much more successful on TV than is ever the case in the real world. A study published in the New England Journal of Medicine showed that C.P.R. success rates in television shows were 75% for immediate restoration of circulation, and 67% survival to discharge (Diem et al., 1996). The success rates narrated within the events of this study were a long way short of these figures. Some medical commentators have even suggested that the consequences of this discrepancy significantly exceed any dramatic benefits (Chauduri, 2010, Triggle, 2010). Triggle quotes John Hill, an Accident and Emergency nurse working in the N.H.S. in Scunthorpe, England, at the Royal College of Nursing Conference in 2010:

> *In A&E it is sometimes a fact that sadly we cannot get people through the trauma they have received. Unfortunately, unlike in Holby City, I am a mere mortal and cannot perform miracles. But many relatives believe because of that, you can. And the injury lawyers assure them that if you don't, they will get recompense for it.* (ibid)

Therefore, modern clinicians undertake C.P.R. in situations where there are potentially unrealistic expectations of success, both public and personal.

In my working life I have progressed from having a purely clinical career (a full-time N.H.S. General Practitioner) to one where I work in medical education (within which my focus is undergraduate education). I have retained a small clinical practice. My educational focus has been in the area of clinical skills, where the use of simulation (for immersive teaching using rich, intricate scenarios in safe surroundings for students and patients) has blossomed.

For the Doctorate in Education I had initially identified CardioPulmonary Resuscitation as a topic area that would be relevant to me as a medical

educator. I intended that this research would assist in the preparation of medical students for vocational life. At the time of topic election I did not realise how much researching junior doctors' experience in undertaking C.P.R. would resonate with me; that ultimately I would track the subject matter back to my experiences 35 years earlier. This study of C.P.R. stems from my early formative seminal experiences as indeed does the nature of the inquiry itself.

From the beginning I wanted to know: *what do others go through (their individual experiences); does this affect them; and if so how (how do they make sense of what has happened to them)?* The actual physical interventions (the drugs they used and if and when electrical defibrillation was administered) would be incidental to the inquiry. The main thrust of the inquiry would be to understand how the junior doctors made personal sense of their experience. What has emerged in recent months however, and especially in the writing of this thesis, has been an understanding of how the researcher's personal history underpins why these personal account held such interest. This will be discussed in depth in Chapter 8 (Personal Reflection), though the reader is alerted to its influence now.

Although a separate justification will be mounted for the research methodologically and method, it is open to question how much the personal memories of the events of 1977/1978 prefigured how I would attempt to research this phenomenon. It has been a late recognition, during the writing of this doctorate, that there was a significant personal disposition to a qualitative inquiry from the start, none the least because it was personally attractive to study the personal experiences of others.

As I have moved through the formal stages of choosing ontological and epistemological stances, my iterative review of my own conduct of the interviews, and through the maintenance of a reflective diary, I have attempted to quantify and reduce the potential of imposition of the researcher's self, beyond that which is natural and unavoidable. However, now that I reflect upon

the inner call I answered when I selected this topic, and in particular as I have written about it, I have increasingly recognised that the influence of my *post priori* feelings and experiences on C.P.R. (in my time in the R.A.I. as a J.H.O. in 1977) has been inextricably interwoven with the cited benefits for current undergraduates that I have proposed in its justification. I did not come to this doctorate in the Aristotelian sense of a Tabula Rasa (Aristotle, 1936). In a real sense my own "emotional indebtedness" (sic) has been one of the motivations for studying this topic.

Therefore an enduring requirement throughout the writing was to recognise and minimise the pervasive influences of my early clinical life and the way this researcher thinks about C.P.R., and to reconcile these with the current experiences (and learning needs) of junior doctors performing C.P.R. in a modern health setting. None of this invalidates the inquiry method itself, see Chapter 3 (Methodology).

Within this study, some of what the young doctors told me was new and reflected modern medicine: I learned a new vocabulary, like the public intercom/Tannoy codes (Code Blue is a medical emergency, and a M.E.T. call is requesting the Medical Emergency Team); some of what they said however seemed almost reassuringly familiar. It emerged that the transition difficulties that clinical professionals faced in this study were the same hardy perennials encountered in any move from a theoretical phase of preparation to a life of active vocational responsibility. In general terms these were: the ability to cope with real life pressure; to do things right; to not let patients and colleagues down; and to avoid mistakes.

Location of this research study

Until recently my entire clinical life was based within the National Health Service (N.H.S.), Scotland, U.K. In January 2010 I immigrated to Australia and

began work in a very different public health care system. This presented two challenges. Firstly, I could no longer rely on my personal network of Resuscitation Officers, around and within central Scotland and Glasgow hospitals, which I had originally expected to assist with participant recruitment. My original intended research population of junior doctors within the N.H.S. in the West of Scotland became totally unfeasible. In a radical change to how this project was conceptualised, the participants in this research were recruited almost exclusively in Victoria, one came from Queensland, Australia, between January 2012 and August 2013, see Chapter 4 (Data Collection).

Secondly, I had to obtain fresh consent to base the study in Victoria and had to navigate a different administrative process for ethics approval. The study itself was further adapted to incorporate the narratives of several, more mature, clinicians. However, although the clinical and educational backgrounds of these older participants varied between, for example, Australia and India, each of the young doctors I interviewed had graduated and worked in Australia (in the end I had to extend recruitment outside the state of Victoria). One consequence of this extension of recruitment was that several of the mature clinicians interviewed narrated levels of clinical supervision in their early years (especially in rural hospital settings in Australia) that was surprisingly similar to my own in the R.A.I. in 1977.

In the writing of this research I have distinguished between four separate locations for the participant's experience.

1. **Remote locations** refer to a setting where there were significant gaps in clinical service provisions, supervision would be very much from the supervisor's home, and overall staff numbers would tend to be much lower than the Metro or Rural Hub settings. This is different from most N.H.S. hospitals, and reflects genuine geographic differences inherent in a widely dispersed distribution of population. Australia is the planet's sixth largest country, with a population one third that of the U.K., whilst the

U.K. is the planet's eightieth largest country, see Image 1.1, Size comparison between U.K. and Australia landmass (Government, 2015).

Image 1.1, Size comparison between U.K. and Australia landmass

2. **Metro locations** that occupy two zones:

   Outer metro in this setting is analogous to many of the hospital within a U.K.'s Health Board (N.H.S., Scotland) or Health Authority (N.H.S., England and Wales) structure that are not located in major cities. For example, the three local hospitals in Lanarkshire (Hairmyres, Monklands, and Wishaw General, all within a 30 minute drive to the major inner hospital of Glasgow), would be broadly similar to the outer metro hospitals of this research.

   Inner metro hospitals are large, tertiary, or even quaternary (with national or state level specialisations and facilities) centres within major cities. They are very similar, whether within the N.H.S. in Glasgow (Glasgow Royal Infirmary or the new South Glasgow Hospital), or within the city of Melbourne (Monash Medical Centre, the Alfred, Boxhill Hospital, or the Royal Melbourne Hospital), in Victoria, Australia.

3. **Rural Hub** locations refer to somewhat distant hospital settings, outside of major metropolitan areas, where there are still adequate numbers of

practitioners to staff C.P.R. response teams. There are however significant hurdles (for example helicopter transfer or a prolonged road journey) that must be overcome in transporting patients to major inner metro hospital. An N.H.S. comparable hospital would be Raigmore Hospital in Inverness.

4. **Foreign** locations refer to the "third world" experiences of one participant, who initially worked in India. There is no direct comparison here between her location and any current N.H.S. or Australian healthcare setting.

Although basing of the research in Australia potentially limits close application of some findings, particularly those at remote locations, to those health settings in the U.K. that are broadly similar (for example the Scottish Highlands, West Coast islands, or Orkney and Shetland), many of the themes discussed were shared across all geographic settings, and so should be relevant to the U.K. healthcare sector.

Formal reflexive disclosure of researcher

Through presentation of the researcher's personal prejudices and motivations during this introduction, it is intended that the reader will be alerted to the researcher's known influences-on-self from the outset the study. For reasons that I offer below, it is important to do this now, rather than in Chapter 8 (Personal Reflection). One early recognition must be that the motivation behind the doctorate is a mixture of altruism and a desire to develop a professional identity as a C.P.R. researcher. Not only therefore, did I genuinely wish to actively contribute to the literature for improvements in undergraduate preparation and later mentoring, but, I have personal career related motives: I wish to establish some limited professional and academic authority in this area.

As this is a qualitative study it will be understood that the researcher is particularly and intimately bound up in the project, see Chapter 3 (Methodology). Through the selection of topic itself, the research methodology, the literature review, the conduct of the face-to-face interviews, the thematic analysis and interpretation of data, the discussion of the data, and the selection of conclusions in the write up, the influence of the researcher is ineradicable. This discourse now attempts to quantify this. Even though these characteristics are similarly true of the quantitative research paradigm, my interpersonal-self actively interacted and co-produced the interview data. The study will follow throughout an established the qualitative research process outlined by the National Centre for Social Research, U.K., (Ritchie and Lewis, 2003), but the insights and responses that guided the interviews and analysis are this researcher's.

Like quantitive research, the research process for a qualitative study must be credible, conform to accepted norms and be capable of withstanding scrutiny. Additionally however qualitative research (Hertz, 1997) should display reflexivity: the personal prejudices (influences, inclinations and biases) of this researcher must be laid bare, so that others may take them into account when they weigh the generalisability and external value of what is presented. Accordingly to Hertz (ibid), it has increasingly been recognised to be an ethical responsibility, and therefore incumbent upon a researcher, that their voice, as well as those of their participants, is made transparent for the reader.

Hertz began this process in 1979, when she specified in her field notes that her identity was that of a young, American, married, academic, Ashkenazi Jewess, of heterosexual orientation, who came from a privileged background (ibid). She further acknowledged that, at that time, her identity notes were incomplete, for they did not record her ***not*** being lesbian, or Arab amongst other possible non-identities. Identification of this researcher's non-identities was problematic and incomplete, other than to noting he is being incapable of truly representative of feminism or cannot the philosophical perspectives of Martha

Craven Nussbaum (one of the main philosophers advocated within the ED.D. taught programme).

To make my personal prejudices, inclinations and dispositions transparent, I have exposed them in a tabulated format, see below a discussion of the Analysis of Influence Matrix (A.I.M.). As alluded to several paragraphs earlier, this acknowledgement is placed here to enable the reviewer to benefit from these known-to-self perspectives from the start, as opposed to using them to calibrate their opinion later in the process. The use of the term *prejudice* is not intended to be pejorative or restrictive but rather emancipatory. The philosophical position of *wirkungsgeschichtliches Bewußtsein* or historically-effected consciousness (Gadamer, 1975: 312) will be invoked throughout. Much of the research's foundational underpinning will be grounded in the Philosophical Hermeneutical perspectives of Hans-Georg Gadamer (1900-2002). The study references extensively his magnum opus *Wahrheit und Methode* (Truth and Method, published in Germany in 1960, English translation, 1975).

Through my assimilation and promotion of Gadamer, it could be construed that this researcher has rejected the position of Jürgen Habermas (one of the key opponents of Gadamer's stance). The reality is that it is beyond this thesis to adjudicate between the relative positions of Habermas and Gadamer and the thesis limits itself to acknowledging the existence of their dichotomy, see further discussion in Chapter 3 (Methodology). Furthermore, as this thesis is not mounting per se an exposition of Philosophical Hermeneutics, there will be no direct reference to another powerful advocate of Philosophical Hermeneutics, Paul Ricouer (Madison, 1999). These qualifications are placed here to delineate the intellectual boundaries of this research, and to recognise that this represents a strategic decision over research methodology rather than opening a dialogue between competing philosophical positions.

For Philosophical Hermeneutics, the removal of one's own influences is a fundamentally untenable stance. In attempting to sterilise their own eye, the

researcher would be blinding themselves to the reality of their own experience of the world:

> *A person who believes he is free of prejudices, relying on the objectivity of his procedures and denying that he is himself conditioned by historical circumstances, experiences the power of prejudices that unconsciously dominate him as a vis a tergo. A person who does not admit that he is dominated by prejudices will fail to see what manifests itself by their light.* (Gadamer, 1975: 369)

Not only should this reflexive process inform the reviewer, but, it has critically raised and made explicit to myself (this researcher) those personal biases that determined my position of perspective. This explication of a personal vantage point stance is further influenced by the work of Thomas Nagel (1989), who concluded that the *view from nowhere* does not truly exist: see further explication in Chapter 3 (Methodology). Nagel asserts that everyone one takes up an individual position from which to gaze and interrogate their world.

Gadamer, Nagel and Hertz (who identified over 20 different selves) thus both legitimise and require the full exposure of this researcher's known-to-self perspectives, biases or prejudices. In summary therefore, no two individuals therefore truly ever have the same viewpoint. An important personal learning from this journey has been to legitimise, identify, characterise and critique the researcher's unique point of perspective, both for others and for self.

This reflexive imperative has been developed into a specific format that has been named the "Awareness of Influence Matrix" (A.I.M.), Table: 1.1, below: a structure intended to offer axiological traction on the author's mindset. In seeking to stabilise the foundations of the study, and its conclusions, the researcher has completed an exercise that has sometimes felt intensely, and overly, narcissistic. Throughout this process however, it has been difficult to balance offering a critical (and self-critical) account and one that risks being self-indulgent. This competition between self-indulgence and academic witness

will be discussed in Chapter 8 (Personal Reflection) in Section 3, reflexivity versus narcissism. It is acknowledged that this process of selection is fundamentally axiological, reflective as it is of the researcher's personal values: he has chosen what to value.

Characteristics	Prejudice	Understanding of potential effect to known-to-Self
Age	60 years of age	Maturity of view and insight Potentially disordered memory of seminal past life experiences (35 years earlier)
Sex	Male	Male orientated view of world Inability to comprehend fully the feminist critique
Sexual orientation	Heterosexual	Relevance unclear; but unable to offer a "gay critique"
Occupation	Physician (General Practitioner). Medical Education Academic.	Physician orientated view of self (healer, carer, educator, enabler) Tertiary education centric view of institutional learning and standards
Nationality	British and Australian dual national	Westernised view of the world, U.K. liberalism. Extensive influence of state controlled social systems in education, health, and democratic processes
Race	Caucasian	Life experience as a Caucasian means is likely to be biased towards a westernised version of human philosophy. The researcher acknowledges a very limited understanding of Eastern, African or American philosophies of life or their value systems.

Social status	Divorced, father of four sons	Relevance unclear
Political persuasion	Left of centre, socialist and liberal (after JS Mill)	Liberal social democracy, personal freedom with personal responsibility. Believes in the individual's responsibility to contribute to society to obtain benefits of that society: personal safety, maximisation of individual potential, health safeguards from national insurance schemes.
Upbringing family	Eldest of six siblings. Parents were alive until very recently.	One background was a stable and conventional European family. Acknowledges the continued beneficial influence of his own father until his death in 2013.
Upbringing religious and spiritual	Roman Catholic	Heavily influenced in upbringing by tenets of Christianity.
Education	Primary (state sector, local Catholic) and secondary (state sector, selective, Catholic) schools. University of Glasgow, primary medical degree (MBCHB in 1977). Strathclyde University, degree (MBA in 2007).	All education resources, including a student grant for university, were given freely to the researcher. Researcher has a firm view of this constituting a social contract which was his mindset until he moved to Australia.

Moral principles	Utilitarianism and some expressions of Buddhist Upaya-Kaushalya	Is personally inclined away from Kant and his concepts of *right* towards a more liberal interpretation of responsibility and morality. Aligns with some expressions of Buddhist teaching on e*xpedient means* aligns with his personal disposition towards a pragmatic way of being.
Moral drivers	Fairness, justice and equity	See Tenets of Christianity for the substantive foundations to this position
Social philosophy	Symbolic Interactionism	Personal social perspective is based on the three tenets of Herbert Blumer 1900 –1987
Personal Philosophy	The philosophy of Hans-Georg Gadamer (1900—2002)	Accepts Gadamer's concept of "historically-effected" consciousness: that this is inextricably embedded in any one individual; that prejudices are the non-pejorative condition of how humans define how they perceive and interpret the world; that prejudices facilitate and are the prerequisites to interpretation. Their influence is pervasive and comprehensive.

Table 1.1 Awareness of Influence Matrix (A.I.M.)

Conclusion

In 2016 young doctors work in a modern, and informed world that, on top of their own private expectations, has imposed a demanding set of public expectations. Fewer clinicians work unsupervised, yet all undergo a professional transition, moving from an undergraduate life with no clinical responsibilities into full clinical responsibility. Health professional are highly accountable: clinical failures are often made public. Novice professionals worry a lot about their preparedness for clinical responsibility (Moss and McManus, 1992, Prince et al., 2005, Duns et al., 2008).

Whilst data has been collected on the effectiveness of emergency clinical interventions like C.P.R., the human toll of undertaking C.P.R. is less well understood. Data has begun to emerge from nursing studies (Laws, 2001) has suggested that nursing practitioners experience particular issues with being participants in C.P.R. Less in known about how medical practitioners experience C.P.R., and what is known has tended to reference decision-making and clinical outcomes, rather than exploring participants' experiences. Little is known about novice practitioners feel during undertaking C.P.R. and how accurately their concerns about their preparedness align with their own perspectives on their performance.

The emergent thinking around psychological consequences of bad experience, "emotional indebtedness" (Simon, 2016), provides a rationale for directly studying the accounts of young doctors. This study has listened to first-hand accounts of novice doctors' early experiences of C.P.R., to begin to determine any gap between their anticipations and their ultimate clinical reality. It has clarified the extent to which modern preparation has equipped junior doctors to handle their emersion into the clinical workplace and, particularly with respect to C.P.R.

CHAPTER 2: LITERATURE REVIEW

This review will use a personal analogy that has been practically useful throughout: it will liken the doctoral journey to that of gold prospecting and mining. This analogy of searching for gold will be developed throughout this chapter. The metaphorical uses of mining or of being on a journey are well established (Kvale, 1996). This research project is also however as much about a personal journey or odyssey and what this researcher can learn through the process. This aspect will be dealt with in Chapter 8 (Personal Reflection), which will focus on personal growth or transformation.

In writing this chapter a broad narrative approach has been used to demonstrate how the literature was sourced and used. This was an iterative process: sometimes it occurred in formal stages; at others it was much more haphazard, or at least reactive. Whilst I intend to present a coherent and organised version of this literature review, I initially struggled to offer this as a neatly boundaried and distinctly temporally sequential event. This literature review was in fact written after the research interviews, and after some of the early analysis.

There are therefore at least two literature reviews contained here within: the first one was conducted for myself and Ed.D supervisors to identify the research space; and the other was written to demonstrate doctorateness. Furthermore as this review has been written, emergent needs have arisen for new references. It would be difficult to present a literature review that does not include all references, especially when the writing is revised continually. The account presented here is an accurate portrayal of research journey, its influences and decisions. Though it is somewhat light on more recent references, some have been included (for example, the Best Evidence Medical Education guide to CPR Education: Mosley et al, 2012). This version has instinctively seemed a more truthful account to offer than a falsely staged historic one, as the writing of the

review and its content were not generated in a linear time sequence that the reading of the thesis would suggest.

The content of this literature review contains two unique interwoven threads; each is distinct, though they share certain characteristics. Resuming the gold mining analogy, the first thread involved looking metaphorically for potentially rich seams of gold: learning the theory behind gold mining; charting topography; listening to old timer's short cuts; learning how to ignore dead ends; and to recognise promising leads. Sometimes the researcher followed instructions, at other times his own instincts (especially when these resonated with his world views, both ontological and epistemological). This thread encompassed the general and specific reading of the formal taught components (the first two years) of the doctorate.

Despite its reassuring alignment with the early course work components, the process of exploring the first thread sometimes felt chaotic. Over time, the ability to look at potential sites became sharper, and more focussed exploration of on sites likely to be useful occurred. Several key tools were chosen with which to prospect: Symbolic Interactionism (Mead 1934, Blumer, 1969, Fine, 1993); a Philosophical Hermeneutical lens (Gadamer 1975, Madison, 1999, Barthold, 2012, Malpas, 2013); the experiential learning theory of Peter Jarvis (1987, 1995, 2003); and the Practical Guide to Qualitative Research (Ritchie and Lewis, 2003). .

The first two tools (Symbolic Interactionism and a Philosophical Hermeneutical perspective) offered novel philosophical, sociological, and theoretical underpinnings for my own actions, and how I would understand these actions, and the actions and experiences of others, including how they themselves interpreted the events I wished to study. The learning theory of Peter Jarvis had used for over ten years, both personally and in my professional role as a medical educator. His revised model of the processes of learning (Jarvis et al., op. cit.: 59) of understanding experiential learning had intuitively made complete sense

and offered a trustworthy approach to understanding the complex and unpredictable outcomes of how individual respond to life's experiences (see detailed discussion on page 39).

Ritchie and Lewis's handbook offered a structural skeleton for moving through a qualitative study; it had been immensely helpful in an earlier master's degree. It was used constantly during the project and in particular during the write up phase. All three theoretical frameworks will be covered in detail in Chapter 3 (Methodology).

Over many years I have come into contact with the action learning orientated work of Revans. Its main immediate appeal in this study would have been to offer a means for evaluating the growth of the researcher *self,* and the critical role of questioning in the hoped for transformation. However after reflection the inclusion of an additional learning framework was discarded as it diluted the focus on using the learning theories of Jarvis. Similarly there was no direct place for the concept of Situated Learning (Lave and Wenger, 1991). Initially when planning the doctorate *communities of practice* was an attractive meta-concept to include. The specific difficulty with incorporating using *communities of practice* was that, as the interview were being planned, I became aware of a potential to influence the line of questioning during the interviews: if an *a priori* position was held, then questions would be posed to the participants about entering a *community of practice* and this could skew or taint their response. Therefore, highly conscious and deliberate efforts were made to avoid using *communities of practice* in all interviewing and generation of research data.

Whist general literature roaming was a feature of the early research (or exploration), increasingly, however, as the project moved to the active data gathering (interviewing), analysis or writing, literature needs sharpened and moved beyond general understanding. The second thread of readings in the literature was more specific, focussed and targeted. Continuing the analogy,

the main purpose of these latter readings was as intellectual, supporting infrastructure for the mining itself.

This literature infrastructure was for two audiences: for the researcher and for the reader/reviewer. For safe exploration and extraction, it was important know where others had gone before:

> *A researcher cannot perform significant research without first understanding the literature in the field.*
>
> (Boote and Belle, 2005: 3)

For the reviewer, and a critical audience at the end of the research, the task of the support infrastructure of the literature was to demonstrate a formal process that would create and delineate a research niche (Swales, 1990). This would involve refining and taking the gold to the open market, and then, and pushing this analogy to its most extreme, selling the gold to others.

To summarise therefore, one of the main difficulties encountered during the writing of the literature review was to construct and present a logical sequence for the review. The overwhelming sense was of something more organic and responsive; but, ultimately, less structured, potentially less coherent and less focussed than is presented. The content of the literature review was generated in several stages during the study: the preparatory, which contained both general and specific elements; and the evolutionary, which was highly specific. Furthermore, the review of domain or study specific literature was conducted during several distinct phases of the study, for example during the writing.

I undertook a general review in the preparatory phase of the study when, following Step One, CARS model in Table: 2.1, I was establishing and justifying a potential research space.

Step 1	Establishing a territory centrality of field topicality using previous research.
Step 2	Establishing a niche counter-claiming, by indicating a gap, question-raising, and continuing the tradition.
Step 3	Occupying the niche outlining purposes, announcing present research principle findings, indicating research articles structure.

Table 2.1 CARS Model = Create A Research Space (Swales, 1990)

As the study progressed, and during delays in recruitment, there were several occasions when separate searches (primarily to see whether others were entering the space) were performed. However, it was only at the final stage of writing up the literature review of the study that the most exhaustive review was undertaken. This was to present a defensible account of the research conduct: to justify it to others. In reality therefore, steps 1-3 of C.A.R.S. were repeated, iteratively, several times over; it was only at the end, when a clear picture of all the threads and dimensions emerged, that would be then collated into this literature review.

The first thread was almost exclusively undertaken in the preparatory phase. As the study developed, general reading became an unwanted diversion. The second thread was generated for different purposes: at the outset, as highly specific preparation, for example, the literature on CardioPulmonary Resuscitation training and its effectiveness (to identify if others had mined there already). Later the second thread (in a positive alignment with the mining infrastructure steps) was sourced reactively, and critiqued serially, during this write up, whenever additional rhetorical supports were required.

The initial articles of the review were used in two ways: firstly for their content; and secondly to yield further references that were then explored. I started to use EndNote X7[2] from the first literature review and found it immensely helpful to be able to download both PDFs and their references at the same time. It has been suggested that, of final references used in a submission, only 10% are generated from the literature of the initial search (Randolph, 2009), the remaining 90% are generated from exploring references contained within existing articles or specifically searching at need; regrettably no figures were kept for this thesis.

To utilise the literature from either thread in this submission, they must meet several quality criteria. The academic credibility of the reading itself (authorship, the cogency of its arguments, the robustness of its peer review, and ultimately the extent of its acceptance by the broad academic community) must satisfy the reviewer. The researcher's comprehension of these texts, and the use of it in his rhetorical processes, must similarly withstand the scrutiny of the reviewer: the researcher must stay within acceptable and orthodox interpretations of the reading, or vigorously defend unconventional ones. Furthermore, although the active choices made must be justified, so, too must the reasoning when significant exclusions from the known canon, for example Lave and Wenger and communities of practice, are made.

During some of the initial reading, some aspects of critical thinking, for example, Herbert Blumer on Symbolic Interactionism (Blumer, 1969) made this researcher concerned that they would be out of their depth. According to a highly respected colleague, this reluctance to believe in the value of one's own contribution is a natural feature of novice doctoral researchers (Feldman, 2013). Ultimately however the researcher must learn to trust their own voice and believe in the value of their contribution. Part of the task in the literature review is to begin this process. The literature review must blend and incorporate the insights, wisdom and experience of published and peer reviewed

[2] EndNote X7.0.2 (BLD 7390) is a copyright product (1988-2013) of Thomson's Reuters

others, yet offer an independent distillation: the researcher's interpretation should be personal, yet objective, trustworthy and credible.

Sometimes, I have encountered ways of understanding or critiquing my experience of the world that not only empathically resonated with me, but offered deeper and richer insights into the world I perceive. This was most notably the case with the concept of *Horizontverschmelzung*: the fusion of horizons (Gadamer, 1975: 317). To many, Gadamer is considered the most decisive figure in the development of twentieth century Hermeneutics (Malpas, 2013). Within Philosophical Hermeneutics all human understanding is unique. It is generated from the fusion of an individual's own experiences, each of which moulds their horizons. I have already identified this personal orientation towards Gadamer, and specifically now ontologically towards *Horizontverschmelzung,* in the Analysis of Influence Matrix, in Chapter 1 (Introduction). The A.I.M delineated my individual horizons.

Horizontverschmelzung was Gadamer's response to the traditional hermeneutic account that understanding is unchanging (Krahn, 2008). Gadamer rejected this. He proposed that all understanding must be historic: understanding is based upon our experience. He legitimised the effect of history rather than seeking to isolate or imprison it. He liberated hermeneutic consciousness, by acknowledging that all consciousness is fundamentally a historically aware consciousness (Malpas, 2013). A consciousness, that knows and understands its heritage, will embrace the reality that it is "*wirkungsgeschichtliches Bewußtsein*" – a historically-effected consciousness (Gadamer, 1975: 312). I will develop this theme within Chapter 3 (Methodology).

These influences have been so profound, and instinctively seemed so right, that they were willingly and effortlessly assimilated (Kolb, 1984) into the researcher's worldview. As the doctorate progressed I became more aware of this aspect of choice, and have initiated a discussion within myself about how such choices are made; this dialectic continues to this day. Within Chapter 3 (Methodology), the discussion will focus on the academically defensible, and

what I had hitherto considered objective, merits of my research choices. There will be offered a justification for selection of the study's frames of reference (ontological, epistemological and philosophical). Chapter 8 (Personal Reflection), will explore those individually resonant options outlined above, and critique the fundamentally subjective consequences of personal disposition, which informed their selection.

A priori or *a posteriori* approach to the literature review

Emmanuel Kant famously noted that *a priori* knowledge is "knowledge that is absolutely independent of all experience" (1787: 43). An *a priori* approach is thus independent of personal experience or sense data (Russell, 2014). In undertaking the literature review, the purpose was to study the field of CPR as objectively as possible and deduce from the literature, those issues that were relevant to research within the study. In contrast, an *a posteriori* approach (Baehr) would have been one where my personal experiences, dating from 1977, drove the research agenda.

Whilst it could be argued that the uniqueness of this author's *historically effected consciousness* (Gadamer: 1975) preconfigured how the data in the literature review were sifted and valued, research themes generated using an *a priori* were employed *ad initio to* guard against the potential for the personal motivation outlined in Chapter 1 (Introduction) to skew the study. The use of independent, i.e. non-experiential, peer reviewed data, in justifying the research aims is open to the gaze of others: such data should be capable of being scrutinised by them, and similar conclusions would be generated by them. In particular the recent research publication of Ranse and Arbon (2008) emerged from this deductive process and has guided, in part, the conduct of the study especially in response to their methodological concerns regarding 1:1 interviewing.

Search Criteria

Though the formal search strategy of the formal review is outlined below, as explained earlier, this represents only a partial picture of how this infrastructure was collected, appraised and utilised. The initial search was crafted around the central concept of CardioPulmonary Resuscitation (Criteria 1). Refinement of this, as the research was not about the technique per se, nor the current state of the physiological or scientific underpinnings of best practice, was achieved by focussing on undergraduate and postgraduate medicine (students and doctors) (Criteria 2-3) and the linked profession of nursing (Criteria 4). The search was further expanded by use of additional concepts of transition experiences between undergraduate life (Criteria 5) and the methodologies used in C.P.R. and clinical skills training (Criteria 6). Some of the resulting literature offered background contextual shading and some offered sharper, more foregrounded details.

Though all six criteria were used at various times, the key recurrent ones would be:

1. CardioPulmonary Resuscitation
2. Medical undergraduate
3. Experience

The early starting point was the researcher's publications in this area (Barton and McGowan, 2008, Barton and McGowan, 2010). My professional life as a medical education academic serendipitously aligned in 2007 with my long standing personal interest, see Chapter 1 (Introduction). Furthermore, from a local perspective, some early work on medical undergraduate preparedness training for C.P.R. had been undertaken by others at Glasgow University (Graham et al., 1994a, Graham et al., 1994b, Graham and Scollon, 2002). With John McGowan (a medical education colleague and a resuscitation training

officer at the Southern General Hospital, Glasgow), we had initiated two pieces of academic work. The first was to develop and publish the first undergraduate medical education curriculum specifically for CardioPulmonary Resuscitation training (Barton and McGowan, 2008). The second was research that updated the training landscapes for U.K. medical undergraduates (Barton and McGowan, 2010).

From these two pieces of work there was an initial, and wholly inadequate, collection of over forty U.K., and USA, based references, gathered around three broad themes:

- Preparedness of graduates. These references were usually surveys, often of a self-completion, questionnaire type, of universities, organisations or individuals that researched the level of preparedness for CardioPulmonary Resuscitation of medical undergraduates on entry to the workforce (Lowenstein et al., 1981, Hunskaar and Seim, 1983, Casey, 1983, Casey, 1984, Phillips and Nolan, 2001a, Scott et al., 2003, Grześkowiak, 2006).
- Standardisation of conduct during C.P.R. These references discussed a variety of attempts at consensus generation on best practice in resuscitation training and management. These publications detailed the lack of a cohesive national standard programmes (Goldstein and Beckwith, 1991b, Perkins et al., 1999, Smith, 2002, Soar et al., 2003, Gabbot et al., 2005).
- Skills training updates. The initiatives reported were focussed on scenario rehearsal and timeframes for skill retention (Wynne et al., 1987, Wynne, 1990, Clark et al., 2000).

As I had never previously undertaken a formal literature review, I researched options for understanding, at a deeper level, its purpose, and to formalise aspects of its structure and writing. A model, based on a Taxonomy of Literature Reviews (Cooper, 1988), was selected. Whilst the *characteristic* and *category* fields (see below) were prepopulated with option choices, the final

right hand column contained the *researcher's justifications*. The first act of the literature was to clarify its purpose, and thereby set its boundaries. I have defined and displayed the following choices of operational parameters for the review, Table: 2.2, Cooper's Taxonomy of Literature Reviews.

This review was not written as an exhaustive attempt to "*integrate and generalise findings across units, treatments, outcomes and settings; to resolve a debate within a field; or to bridge the gap across fields*" (Randolph, op. cit.: 3). It was written to be *representative:* to support the doctoral thesis and its research findings (ibid: 4). This was a valuable exercise in its own right: the act of writing down reasoning clarified the purpose and goal in writing the review; surfaced personal perspectives; and thus defined the scope of the review and its audience.

Pre- populated fields		**Researcher's justifications**
Characteristic	**Categories**	**Choices and Reasoning**
Focus	Research outcomes Research methods Theories Practices or applications	This research was designed to have pragmatic outcomes, enabling better preparation through understanding of vocational experiences.
Goal	Integration: • Generalisations • Conflict resolution • Linguistic bridge building Criticism	The research was to understand the limitations of current models of preparation and identify and critique the deficiencies of training, thereby offering opportunities for improved training.

	Identification of central issues	
Perspective	Neutral representation Espousal of position	The study would be openly reflexive. The research stance would be studied neutrality.
Coverage	Exhaustive Exhaustive with selective citation Representative Central or pivotal	This was part of a doctorate in education: and, with word count considerations, could not be exhaustive. Central (or pivotal) and representative papers would be used to justify positions taken.
Organisation	Historical Conceptual Methodological	Historical around exploring the known literature of young practitioners undertaking C.P.R.
Audience	Specialised scholars General scholars Practitioners or policy makers General public	As the research is pragmatically focussed on improving preparation, the audience of those general scholars tasked with training; perhaps too, of use to policy makers where standardisation was their consideration.

Table 2.2, Cooper's Taxonomy of Literature Reviews

The search strategy

The parameters for the main, substantive literature search were:

1. The review would be limited to English-speaking countries.
2. Databases selected for searching would be health-centred ones, rather than a more general, education-centred literature.

An exclusively healthcare selection runs the risk of criticism of a restricted perspective (especially within a Doctorate in Education in the Faculty of Education); however, early experience was that there was sufficient material in the health science literature. An early selective reduction in overall reach was made to prevent being overwhelmed with broader references. Furthermore, whilst non-health science transition literature could be expected to contain similar studies of the move from pre-vocational to vocational life, the emphasis of this project was on the experience of C.P.R., from an exclusively health practitioner perspective; the research was intended to be of immediate benefit within the researcher's work context. Non-health science literature would therefore be followed up if there emerged a specific need for it in the write up or when, on an *ad hoc* basis, a useful reference was identified by others in their published articles.

3. The review would focus on papers concerning humans and on publications from the last twenty four years (from 1990 to 2014).

Earlier references were followed and where important, especially where seminal work was identified, were included. However the focus was on more recent publications where contemporary research was starting to look beyond the technical performance of C.P.R.

4. Specific databases and search techniques are as follows:

a. In MEDLINE, the MeSH (National Medical Library – US) terms used were:

   i. CardioPulmonary Resuscitation – explode, focus, tick keyword box.
   ii. Education, Medical – explode, focus, tick keyword box.
   iii. Student experience as a keyword phrase.

b. In PubMed the MeSH terms were not used as the primary point of entry. Though PubMed has the same database as MEDLINE they have quite different interfaces and search functions. The most useful looking references from MEDLINE were placed into the *single citation matcher* function in PubMed, and the *similar citations* that this retrieved were followed up. The MeSH terms that were listed with the articles themselves (see below) also generated further articles; this was sporadically successful, and so the main terms listed above were persisted with.

c. CINAHL was used to search for the nursing citations, using:

   i. Resuscitation, CardioPulmonary – explode, major concept, tick keyword box
   ii. Nursing – explode, major concept, tick keyword box
   iii. Student Experiences - explode, major concept, tick keyword box

d. This initial search identified a significant number of papers, and further terms were experimented with, some of which were generated from other keywords identified by the articles reviewed:

   i. Clinical competence
   ii. Skills development

iii. Teaching methods
iv. Medical staff
v. Life support standards
vi. And several other variations of these that were not specifically recorded.

e. This extended search identified only a few additional useful papers.

f. The distribution of the 166 additional papers generated was:

i. MEDLINE: 25
ii. PUBMED: 103
iii. CINAHL: 38

EMBASE, SCOPUS and Web of Knowledge were considered as further databases. However, as the review coverage was to be *representative* (including central and pivotal references), rather than *exhaustive,* the search was not extended once these initial references were identified. Furthermore grey literature in the search strategy was not included as it was considered that any important research would likely be found in peer reviewed journals.

The review will now be presented in two sections. The first will be a brief introduction to the pre 1970 resuscitation landscape that sets the scene for the later developments. The second section will present the papers from 1970 to the present day. The literature review will distil the major themes of C.P.R. research that are both constant throughout and those that have recently emerged.

Although the main search terms outlined above (*CardioPulmonary Resuscitation, Medical Undergraduate,* and *Experience*) and the auxiliary terms (*nursing, postgraduate medicine, clinical competence, skills development, teaching methods, medical staff,* and *life support standards*) were all employed in the detailed search, these are not the themes that emerged, or that were selected for presentation in this analysis. For each theme I will present a short focus on its early literature (the early modern work from the 1970s to 1990); the main literature content will be from the period 1990 to 2014.

Three of these themes had already been prefigured within my own initial understanding of the matter. These were developed into:

THEME I: The preparedness of graduates to enter the workplace

THEME II: Promotion of national standards and practice

THEME III: Training for C.P.R.

To these were added three additional themes:

THEME IV: The development of C.P.R. provision, comprising both *in-hospital* and *pre-hospital* settings

In the 1980s a further theme emerged:

THEME V: The "ethics of resuscitation"

And at the beginning of the 21st century a final theme was identified:

THEME VI: The early experiences of the workplace, including the effects of being a witness

Section One (Pre 1970)

Lifesaving societies developed in Europe from the mid 1700's and a variety of techniques were used (Kelly, 1999). Most of the pre-1950 resuscitation techniques were based on non-evidence based historic practices. Interventions were focussed on two areas.

One area was stimulating the patient's breathing (where sometimes seemingly barbaric practices like victims being laid across the saddle of a horse, that was then trotted to reinvigorate the individual), and the other area was interventions to support their heart beat. According to Kelly (ibid), a Scottish scientist John McWilliams first published, in 1889, an analysis of why the process of "fatal syncope" (sudden cardiac failure) was other than had been previously understood.

For the first time McWilliams identified that every muscle cell in the heart was beating out of synchronisation with each other: this he named *fibrillation*. This fibrillation was an unsynchronised beating, a "tumultuous activity", which resulted in a complete lack of coordination, and generated no output from the heart. From this research, ultimately there emerged a potential strategy for aborting the collective cardiac chaos: the delivery of an external electrical shock to *defibrillate* the heart. It would be many years before this theory of defibrillation became a clinical reality.

Through his long life, electrical engineering academic Professor William Kouwenhoven (1886 – 1975) devoted himself to external defibrillation. His fifty year career culminated in the maturation of an electrical discharge system, from an original enormous apparatus, which required to be wheeled and needed an internal delivery (within the chest cavity directly onto the heart), to one that could be applied externally, directly onto the patient's intact ribcage. Prior to external defibrillation, in a scene that seems redolent of an Inca sacrifice,

cardiac surgeons on their ward rounds were in the practice of carrying a surgical blade: an immediate means to open their patient's ribcage; expose their heart; and thus enable manual massage of the fibrillating heart (Kelly: 1999).

In the 1950's science (theory and experiment) began to conceptualise a different technique for managing a cardiac arrest. Publications, though sparse, were ground breaking. The key figures and their papers were:

i. Peter Safar (1924-2003), the "father of modern resuscitation" (Acierno and Worrell, 2007), conducted experiments in mouth to mouth respiration (1958). In an experimental study, that would be almost impossible to receive modern ethical approval due to its risks to the study subjects, Safar completely paralysed willing clinical colleagues, and monitored their oxygen levels, as their respiration was supported only by volunteers undertaking mouth-to-mouth respiration. Safar further simplified the approach to the teaching and operation of this technique by introducing linear stages for resuscitation: A for Airways; B for Breathing; and C for Circulation (Baskett, 2003). Safar published the first ABC of Resuscitation (Baskett, 2001).
ii. Paul Zoll, who with Milton Paul, Arthur Linenthal, Leona Norman and William Gibson undertook pioneering work on the beneficial regulatory effects on irregularly beating hearts of externally delivered electric currents (1956)
iii. William Kouwenhoven (1960), who with James Jude (1961) and Guy Knickerbocker, pioneered closed or externally delivered chest compressions, in contradistinction to previous open heart compressions.

As Safar developed the breathing component of C.P.R., Kouwenhoven, Jude, and Knickerbocker developed the cardiac massage aspect. In time, work led to the development and miniaturisation of defibrillation devices. Whilst with the passage of time, resuscitation techniques would be refined, and distinct behaviours and competencies developed, the decade of the 1960s was when

CardioPulmonary Resuscitation first entered medical and public consciousness. It was Safar (Baskett, 2001) who formally launched the technique of C.P.R. in September 16, 1960, in Ocean City, at the Maryland Medical Society meeting. An early concept, now a critical legacy of that decade, was of intervening to save, in the words of a key paper of the day, a heart that was "too good to die" (Johnson and Cross, 1967).

In his initial conceptualisation Safar thought of C.P.R. as primarily being about preserving brain function, and even, late in his career, continued to discuss resuscitation in these terms (Safar, 1981). And though the respiratory component of CardioPulmonary Resuscitation would be increasingly disputed, and eventually in current guidelines minimised[3], from this period onwards, C.P.R. became a standard emergency treatment.

[3] In current guidance respiration is not now advised when resuscitation is practised by non-medical bystanders, its place being retained only when C.P.R. is undertaken as part of a medical team response.

Section Two 1970 to current day:

General discussion

As C.P.R. developed on both sides of the Atlantic, research gradually grew. Initially, publications reflected the sporadic, non-standard nature of the enterprise but, over years, enduring themes developed. By the middle of the 1980s C.P.R. was so established that the first historical retrospectives were written (Couves, 1987, Rosenthal, 1987, Hermreck, 1988). Whilst C.P.R. itself underwent further evolution, and in recent times, has undergone considerable scrutiny, undoubtedly the belief has persisted that it should be widely available both in and out of hospital. Training for C.P.R. has undergone systematic review. The recent Best Evidence in Medical Education (BEME) guide (Mosley et al, 2012) has confined itself to discussion of these topics: how should it best be delivered written and practical); how and how often should it be reinforced (follow up quizzes etc.); and how often should it be retested and recredentialed?

In recent times there has been a focus on the team that undertakes C.P.R. The skills training for C.P.R is neither clinical discipline nor individual speciality specific. In the later years of this review concerns have emerged over the inappropriateness blanket use of C.P.R., and the issues associated with witnessing C.P.R. (either as a family member or as a professional participant in the process itself). However, this literature has rarely looked at such experiences with a qualitative lens, mostly continuing the fact-proving positivist tradition of clinical medicine in general.

Each theme is now presented below:

Theme I: The preparedness of graduates to enter the workplace

In the late 1970s, surveys and *ad hoc* skills evaluations showed that disappointingly significant proportions of junior medical staff were failing *ad hoc* skills assessments (Lowenstein et al., 1981, Nelson, 1981, Casey, 1984, Yates and Wakeford, 1983, Skinner et al., 1985). As, prior to this, training in C.P.R. had been delivered in postgraduate clinical programmes, there were now calls to formally extend training into undergraduate programmes (Casey, 1983, Hunskaar and Seim, 1983). The first international comparison in undergraduate medical training in C.P.R, noted disappointing differences between the paucity of training offered in the U.K., compared to that in the U.S.A. (Smith and Hill, 1987).

Goldstein and Beckwith in Canada published the first comprehensive survey, at a national level, of undergraduate medical student preparedness for C.P.R. (Goldstein and Beckwith, 1991a). The earlier studies (Graham et al., 1994a, Graham et al., 1994b) marked the first attempt to do this in the U.K. The impetus for this research was the acknowledged anxiety (Moss and McManus, 1992, Gillard et al., 1993) of qualifying graduates of inadequate preparation to undertake C.P.R. competently. It is only relatively recently that research from Canada has suggested that early mandatory and comprehensive training may reduce this anxiety (Lyttle, 1996).

The U.K. position of undergraduate preparedness had probably improved slightly by 2001 (Phillips and Nolan, op. cit.). Unfortunately, that study used a different questionnaire to the earlier Glasgow one (Graham et al, 1994, op. cit.,) so an exact comparison was not possible. By the following year, substantial progress was reported in addressing students' anxieties for undertaking C.P.R. when a five year study reported on the introduction of formalised C.P.R. training in Glasgow University (Graham and Scollon, 2002). Nonetheless, there remained no U.K. consensus over where to introduce C.P.R. training into a curriculum, and how to assess it. In Germany, research (Beckers et al., 2009) demonstrated a

similar lack of national level consensus. Later U.K. work, although it showed further movement towards national consensus, demonstrated that individual medical schools met curricular requirements for C.P.R. competence in different ways (Barton and McGowan, 2010). The most heartening aspect of that research was that 75% of medical schools required their graduates to have passed the Immediate Life Support (I.L.S.) qualification of the U.K. Resuscitation Council.

Researchers from Monash University recently published the first questionnaire study of Australian universities and the extent of their C.P.R. preparation of medical undergraduates (Barton et al., 2013). This study was performed to establish a baseline of knowledge about the extent of medical schools preparation of undergraduates on C.P.R., and to enable a comparison with those studies undertaken in the U.K. and Germany. That study showed a marked lack of consensus over preparation for C.P.R. As it was only recently that the U.K.'s I.L.S. course was licensed in Australia (Leman and Jacobs, 2011), it is perhaps understandable that only 2 schools (12%) had established this as an explicit end competence, though several individual schools believed they offered similar programmes. It was probably reassuring that almost all Australian medical schools (87%) were confident that their own unique programs gave their students adequate preparation for their role as a first health practitioner responder at an in-hospital arrest, even if it was less obvious how this was demonstrated, and if they achieved any level of national equivalence.

Theme II: Promotion of national standards and practice

For the earliest times there was a consistent message about the potential benefit to C.P.R. (Lemire and Johnson, 1972). Amongst the major medical editorials of the time, one editorial in the New England Journal of Medicine noted that doing C.P.R. properly was not easy, and required training and commitment. The authors concluded that the inevitable and binding conclusions of the early research of Lemire and Johnston were:

…a challenge to every physician, nurse and hospital in the land.

(Kravits and Killip, 1972: 1000)

It therefore became established that clinical staff must be trained to undertake C.P.R. (Duke, 1975, Carveth et al., 1976); when they were trained, performance was more consistent and results improved (Bernhard et al., 1979). National standards were promoted early on at national conferences, for example the 3rd Wolf Creek in 1985 (Anonymous, 1985b). Publications of common standards and guidelines began in the 1980s (Montgomery et al., 1986, Rosequist, 1987, Chamberlain, 1989, Marsden, 1989).

The early seventies, particularly in the United States of America, witnessed the first attempts at standardisation of the technique, for example the ratio of chest compressions to assisted breaths, in the Journal of the American Medical Association (Carveth, 1974, Anonymous, 1974a, Anonymous, 1974b, Anonymous, 1974c). Common errors were documented (Frank, 1981), and refinements to practice continued to emerge (Josephson, 1980, Luce et al., 1980, Donegan, 1981, Zideman, 1982, Zideman, 1983, Hanashiro and Wilson, 1986, Weisfeldt and Halperin, 1986, Snape and L, 1987, Zylke, 1987, Rosequist, 1987).

The "chain of survival" (Newman, 1989) was a relatively late concept, though it readily became part of the planning of a national response strategy (McCrea et al., 1989, Cummins et al., 1991). Essentially this concept states that there are several stages within the process from when a person collapses, and importantly, that any seconds lost seconds in the chain become critical to saving the person's life. It is illustrated below Diagram: 2.1, the Chain of Survival.

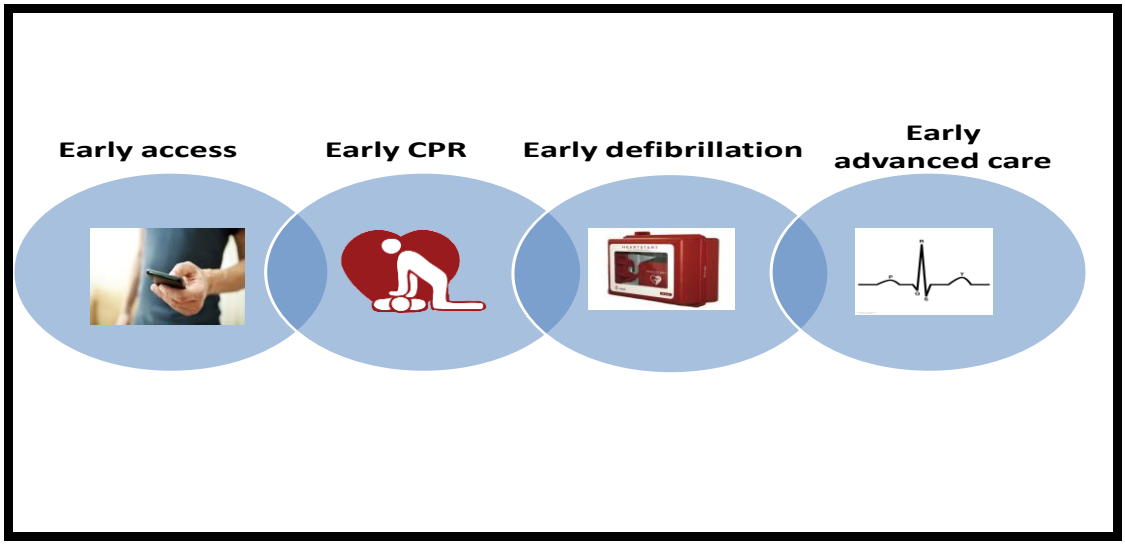

Diagram 2.1, the Chain of Survival

By 1980 some medical specialities had initiated an internal debate about mandatory C.P.R. training for every clinician (Dalen et al., 1980). The continued competence of qualified consultants was even questioned (Thwaites et al., 1992). In promotion of national standards, assessment of C.P.R. competence became a formal part of postgraduate examinations (David and Prior-Willeard, 1993, Prior-Willeard and David, 1995). Practising nurses were also identified as requiring regular skills updates for many were unable to perform even basic life support (Wynne et al., 1987). Despite this last report, there was a suggestion of role reversal in C.P.R. (Lawler et al., 1988). Lawler posited that as senior nurses in Intensive Care Units (I. C.U.s) were a stable and a more highly experienced population in hospitals than the itinerant population of junior doctors in training. It was therefore logical for these nurses to lead an arrest; they should be in charge of the electrical defibrillation apparatus that restored rhythm and effective contractions. And interestingly, during this study, some participants would narrate cardiac arrests where such devolvement of authority occurred in an informal and natural manner.

Aspirational national standards were published in the 1990's (Wynne, 1990, Lawrence et al., 1991, Cobb et al., 1992, Moser and Coleman, 1992, Adgey, 1993, Anonymous, 1993a, Anonymous, 1993b, Anonymous, 1993c, Paraskos, 1993). Quality reviews (Baubin et al., 1992, Berden et al., 1992, Heath and

Brown, 1992, de Vos et al., 1999a, Dembo, 1999b, Gazmuri, 1999) discussed the potential of best practice; a perfect resuscitation was even critiqued (Eisenberg, 1992). The clinical reality however remained obdurately different (Goodwin, 1991, Green, 1991, Lawrence et al., 1991, Fitzpatrick et al., 1992, Daniels, 1994, Jaffe and Landau, 1994). Although it has been argued that some skills were better than none (Wills, 1997), the promise of C.P.R. had remained largely unfulfilled (Cobb et al., 1992, Fitzpatrick et al., 1992, Weil and Tang, 1997).

Perhaps one of the most surprising aspects of the standard practice of C.P.R. practice in the twenty-first century was its ultra-radical modification. Starting just as the 20th century was ending, research findings almost totally refuted the role of assisted respiration during C.P.R., especially when delivered by lay persons (Anonymous, 2000a, Anonymous, 2000b, Anonymous, 2000c, Braunohler and Scott, 2000, Gottlieb, 2000, Groh and Zipes, 2000, Hallstrom et al., 2000, Kern, 2000, Safar et al., 2000, Sprivulis, 2000, Berg et al., 2001, Dembo, 1999a). The very concept of Safar's *breath of life* itself underwent substantial revision (Dembo, 2000).

The movement for compression only C.P.R. strengthened (Hupfl et al., 2010, Kellermann, 2010, Nolan, 2010, Seethala and Abella, 2010, Weisfeldt, 2010, Bottiger et al., 2011, Ewy et al., 2011, Greenstein et al., 2011, Ogawa et al., 2011, Iwami et al., 2012, Nolan et al., 2012, Soar et al., 2012, Dumas et al., 2013), and, as these new research findings informed evidence based practice, there were unanswered calls for Safar's sacred acronym of A.B.C. to be revised to C.A.B. to reflect this new world order (Shapiro, 1998).

Through new research, almost forty years after C.P.R. was introduced, assisted respiration was thus eliminated from community based practice; its sole and only remaining possible use (Seethala and Abella, 2010) continued as part of more advanced resuscitations undertaken by trained clinical staff in hospital-based teams. Only clinicians therefore, expertly trained, should continue to find a place for it. 30 chest compressions to 2 assisted breaths became the new ratio

in C.P.R. (Ornato and Callaham, 2001); a far cry from the early ratio of 5:1 (Carveth, 1974, Carveth et al., 1976). All this new evidence effectively delegated assisted respiration to a footnote in history. Similarly, the once fabled **"stand clear!"** command, given before administration of electric defibrillation shock, and so beloved of TV dramas too, has proved unnecessary (Kerber, 2008): evidence has showed limited effects of collateral shocks, beyond the immediate physical discomfort at being shocked.

The Chain of Survival itself has however endured (Ewy, 2000, Spearpoint et al., 2000, Chandra et al., 2001, Jacobs et al., 2001, Pepe et al., 2001, Herlitz et al., 2005, Soar and Nolan, 2008, Chamberlain, 2010, Gorelick, 2011). Its importance has continued to be re-emphasised, with consequences for school children in the USA (see below). To this day, the critical concept of a finite number of vital minutes remains (Spearpoint et al., 2000). Current literature has focussed on further strengthening the *Chain of Survival (Sado et al., 2012, Voice, 2012, Eisenberg et al., 2014)*.

As the practice of community and in-hospital C.P.R. became deeply imbedded, further prognostic factors were added to speed of application and integrity of the links within the Chain of Survival in determining the potential for success with C.P.R. These were: the duration of resuscitation before return of a pulse (Pionkowski et al., 1983, Rozenbaum and Shenkman, 1988); a variety of general patient factors (Farber et al., 1984, Hanson, 1984); and specific pre-existing morbid conditions suffered by the patient (Hallstrom et al., 1985, George et al., 1989).

One important landmark was the early formation of the International Liaison Committee of Resuscitation (I.L.C.O.R.), with representatives from Europe, North America and Australasia (Resuscitation, 1982) to begin the generation of a global consensus around best practice. Though initially the revisions mentioned above may have been controversial, national consensus became almost a global

consensus in 2003 (Chamberlain et al., 2003). The Immediate Life Support (I.L.S.) course (Soar et al., 2003) was launched by the Resuscitation Council (U.K.) and over the next few years became the European standard training course. By 2005 the European Resuscitation Council guidelines (Baskett et al., 2005) were indistinguishable from those in North America (American Heart, 2006). In 2010 the I.L.S. course was licensed in Australasia (Leman and Jacobs, 2011)

Theme III: Training for C.P.R.

C.P.R. training has always been a practical rather than theoretical activity (Wynne, 1990). Over the years technology has been a prominent part of training with the use of manikins in simulation based education. The first of these models, Resusci-Anne, was introduced by a former toy manufacturer in Norway (Laerdal, 2001-2014). Laerdal has gone on to become a world leader in resuscitation equipment for intervention and training[4]. The face of the model was fashioned from a young woman pulled dead from the Seine in the late 1880s, the so-called *L'Inconnue de la Seine* (English: The Unknown Woman of the Seine). The wax death mask of her face became fashionable, Image 2.1 *L'Inconnue de la Seine (*public domain published).

[4] *Laerdal's* most popular manikin, the Resusci-Anne, has been for many years been the pre-eminent resuscitation manikin in use across the world, enabling Laerdal to claim she has been, and is, the world's **most kissed face**.

Image 2.1 ***L'Inconnue de la Seine***

Methods of delivering C.P.R. training developed: skills based courses were offered; modular courses (Herrin et al., 1980); and refresher courses were discussed (see below). National level overviews of C.P.R. training were published, though such research was often crafted to draw attention to deficiencies (Mather, 1984, Baskett, 1985). There was some acceptance that regular refreshment courses to maintain resuscitation skills were needed (Kaye and Mancini, 1986). The debate then became about how best to maintain competence (Berden et al., 1993, Buss et al., 1993, Dent and Gillard, 1993).

Best practice in C.P.R. training, was the subject of early debate (Gass and Curry, 1983, Curry and Gass, 1987, Yakel, 1989). As training in C.P.R. skills was refined, pleas were heard to strengthen instructors: to remove a "weak link" (Wynne et al., 1992). With the advent of the Immediate Life Support course a national standard for education provision by accredited providers was established in the U.K. (Soar et al., 2003) that has gradually been adopted across Europe (Baskett et al., 2005) and Australasia (Leman and Jacobs, 2011). Improved skills teaching has continued to evolve through enhanced simulation and feedback techniques (Douglas et al., 2010, Smith, 2010, Cave et al., 2011, Hostler et al., 2011, Nicol et al., 2011, Stefan et al., 2011, Williams, 2011,

Monette, 2012, Mosley et al., 2012, Sopka et al., 2012, Bobrow et al., 2013, Edelson and Lafond, 2013, Anderson et al., 2014, Blewer and Abella, 2014).

Fundamentally though, this training focusses on technical aspects of the process: how best to undertake the technique; what drugs to use; what ratios of chest compressions to assisted respiration to use; what decisions to make and when. This then determined how subsequent critical analyses of the process or research are conducted: were the correct decisions made; at the correct time; and were the correct interpretations made on the evidence available?

Theme IV: The development of C.P.R. provision

i) Hospital settings

The results of C.P.R. in individual institutions were regularly documented (Scott, 1981, DeBard, 1981, Ridley and Thomas, 1982, McGrath, 1987, Newman, 1987) as part of a clinical benchmarking process. Later this review extended to the longer term survival, not simply the event itself, but after the patient's discharge back into the community (Urberg and Ways, 1987). Towards the end of the seventies, and again in the United States, paediatric cardiac arrest and its resuscitation became established as a separate discipline (Chameides et al., 1977). The research presented here will look at adult C.P.R. as this was where I anticipated most newly qualified doctors would work. During the interviews however one young clinician (Diana[5]) unexpectedly discussed her dramatic story of a neonatal arrest.

[5] As this thesis was written, using the term "Participant number X" seemed to artificially separate the researcher's experience of interviewing a colleague who offered with trust such detailed and emotionally charged personal reflections. It was decided to substitute a *nom de plume* for each participant; the researcher's identity was recorded as Seamus. See end of Chapter 4, Table: 4.2 Participant pseudonyms.

Most of the studies of hospital C.P.R., including a massive study (3765 patients) in Britain that analysed the accumulated experience of many hospitals (Tunstall-Pedoe et al., 1992), continued to show the potential for C.P.R. but somehow the reality remained disappointing (Green, 1991, Sainsbury, 1992, Smith, 1992, Stewart and Wagg, 1992, Bradbury et al., 1995, Cook and Sarmah, 1995, Graham and Hair, 1995, Borzotta et al., 1998, de Vos et al., 1999a, de Vos et al., 1999b).

As the performance of in hospital C.P.R. continued to be less than its potential, attention focussed on other potentially softer, so called meta-skills (Hilton and Slotnick, 2005) in professional medical practice. Over recent years this has often focussed on the team performance of C.P.R. attempts and, in particular, the role of leadership within teams entered the literature (Fischer et al., 2010, Smith, 2010, Hunziker et al., 2011, Fein, 2012). The poverty of preparation for leadership, and its subsequent effect on performance, has been identified as a *leadership vacuum* (Schenarts and Cohen, 2010). During the study, participants' witness and interpretation of clinical leadership in action during C.P.R. was particularly evident.

ii) Pre-hospital settings

This section chronicles the development of the general community, *pre-hospital C.P.R.*, as the first provider of C.P.R., i.e. at the inception of almost all cardiac arrests. Once the resuscitation process was established in hospital there began early, significant attempts to extend the scope of C.P.R. into the wider community. Appropriate transport and first stage expert care responsibilities for paramedics or ambulance crews were established to provide initial stabilisation of patients and to promote rapid transfer to hospital (Flax et al., 1976). Community education programmes to train lay members of the public in performing C.P.R. (Flax et al., 1976, Tweed and Wilson, 1977), began. The premise was that

everyone in society had the potential, with some brief training, to offer basic C.P.R.

The experience of community programmes (Eisenberg et al., 1980, Vincent et al., 1984, Anonymous, 1985a, Goodenberger, 1985) has enabled them to expand. The initial belief was that immediate access to life-giving interventions was important and successful. In the eighties, this policy came under some scrutiny (Cummins and Eisenberg, 1985). In response to these concerns, poor results however were seen as defects in the system itself. There have been further initiatives to widen the process and to promote integration, for example of ambulance services, to enable better application of the "chain of survival" (McCrea et al., op. cit.).

By the early 1990s large studies reported the results of pre-hospital ambulatory care (delivered, for example, by ambulance crews), including one from Scotland of the national "Heartstart programme" (Cobbe et al., 1991) which assessed defibrillation in the community. In some ways, the results were encouraging, but, inevitably, always fell short of expectations. Its practice expanded further with later pleas to include nursing homes (Finucane, 1993). There have recently been calls to further extend community C.P.R. through training children to perform it. In the U.S.A. a debate has opened about the advisability of children performing C.P.R. and whether this education should form part of a formal school curriculum (Nicholls, 2006, Jones et al., 2007, Maconochie et al., 2007).

From a technical perspective a major innovation in the overall process of C.P.R. provision was the development and introduction of highly portable (readily carried in one hand by someone of average strength) Automated External Defibrillators (A.E.D.s). These devices have transformed cardiac resuscitation both in and out of hospital. Not only did they make in-hospital defibrillation much more standardised, through automated recognition of shockable rhythms, they transformed the extent of the

interventions available in the community (Mancini and Kaye, 1999). Across the world, shopping malls, large sports facilities and public gatherings have equipped themselves with A.E.D.s.

An A.E.D. is a remarkable machine. It requires no training in their use: simply willingness by the bystander to attempt to intervene; and a capacity to follow recorded verbal instructions from the device itself. The most modern ones run on a pre-set algorithm and speak to and guide the rescuer throughout: they dictate the next step in management; and will automatically provide electric shocks as necessary (Liddle et al., 2003). Professional health facility models retain the capacity for the settings to be changed to manual; however, by using these models junior staff can now completely rely on automated advice, rather than their own judgement of when to defibrillate.

Theme V: The "ethics of resuscitation"

Soon after the integration of C.P.R. in hospitals, concerns emerged about its seemingly wholesale application (Martin et al., 1984). Later discussions around the appropriateness of C.P.R. (Dans et al., 1985), and the experience of implementing it in hospitals, led to the first serious questioning of C.P.R. and acknowledgment of hitherto hidden controversies. Occasionally these concerns related to the not-insubstantial financial implications of managing the arrest itself and the downstream costs of caring for the survivors of C.P.R. (DeGross, 1990). Sometimes however, they related to more immediate practical issues. The spread of infection, with mouth-to-mouth resuscitation, was a concern in the early years of the HIV epidemic (Anonymous, 1989). The reluctance of some junior clinical staff to engage in C.P.R. has however continued to be recognised (Horowitz and Matheny, 1997).

Ethical controversy papers initially came from particular clinical areas, for example, paediatric units (Schleien et al., 1989), where resuscitation has posed unique questions (Chameides et al., 1977). However, though the specific issue of paediatric resuscitation continued, increasingly, papers concerned the resuscitation of the elderly (Saklayen, 1989, Eisenberg et al., 1990). There was in the literature, early mention of the futility of C.P.R., as researchers connected the long term outcomes for patients and health care institutions with the ethics of resuscitation (Tomlinson and Brody, 1990): this research initially focussed on C.P.R.'s appropriateness for certain individuals. One key issue was that some staff initiated a C.P.R. response, which was doomed to be futile, for what should have been viewed as the normal end point of a human life: their death (Tresch, 1991).

This debate on the theme of futility developed further (Von Gunten, 1991, Adams et al., 1992, Anonymous, 1992, Davies and Reynolds, 1992a, Davies and Reynolds, 1992b, Jecker and Schneiderman, 1992, Crimmins, 1993, Landwirth, 1993). There followed a number of papers that explored the theme of ethics and futility: "when to withhold C.P.R." (Boucher, 1993, Dudley, 1993, Skinner, 1993, Stewart et al., 1993); "how to limit inappropriate C.P.R." that included a heartfelt plea for improved patient selection (Combs, 1996); and finally "how to stop C.P.R." (Jecker and Schneiderman, 1992, O'Marcaigh et al., 1993).

As a result clarity was sought on what was meant by the policy of *Do Not (Attempt) Resuscitate instructions*, often referred to as a D.N. (A.)R. order, as no consistent national D.N.A.R. policy existed (Dangoor, 2001). Earlier evidence had shown that, even when such orders existed, not every nurse was aware of a patient's D.N.A.R. status (Jones et al., 1993). One review of the practice reassured clinicians that the "right decisions" were *probably* being informally made most of the time (Burns et al., 2003). This debate however continues unresolved to the present day, with recent papers still highlighting inappropriate patient selection for Code Blue calls (Loertscher et al., 2010, Hall et al., 2011).

Hugh Tunstall-Pedoe, who in the previous decade was the lead academic behind the U.K. study that outlined the results of over 3000 C.P.R. attempts (Tunstall-Pedoe, op. cit.), raised concerns that C.P.R. had become a ubiquitous and unnecessary end of life response and…"should not be part of every death"(Tunstall-Pedoe, 2001). From the USA came a paper that asked the seemingly innocuous question: "When is dead dead?" (Holleran, 2002). Thus there seemed little consensus over when to call for C.P.R.; although there was much more consensus over what to do when the resuscitation team arrived.

The television drama of C.P.R. has been very popular, though there have recently been ethical questions raised over its apparent success rates. Clinical researchers on both sides of the Atlantic have sat through whole series of TV dramas set in hospital emergency departments to critique the extent of the realism in both practice and outcomes. These researchers have identified a gap between reality and its media portrayal both in the USA (Baer, 1996, Borowsky, 1996, Byrne et al., 1996, Chheda and Hauptman, 1996, Diem et al., 1996, Troy, 1996, Wootton, 1996), and in the U.K. (Gordon et al., 1998). C.P.R. portrayal has therefore been shown to be hopelessly optimistic (Harris and Willoughby, 2009). Such accounts, whilst linked to a happy ending for the cast members, may only have served, over the years, to strengthen unrealistic public expectations of what can be achieved for patients, their relatives (who have been increasingly present during the process, see below) and attending staff.

The moral debate over the pro and cons of the presence of family members during resuscitation attempts began at the start of the 21st century (Axelsen, 2002, Manista, 2002, Marien, 2002, McClenathan et al., 2002, Skillings, 2002, Tsai, 2002, Creamer, 2003, Davidson, 2006, Hill and Fuhrman, 2008, Fernandez et al., 2009). That research has recognised that what could be good for the relatives, and enable them to come to terms with the death of a loved one, even though it could place the treating physician under considerable stress. Arguments have ranged without resolution; the presence (and simultaneous distress) of family member has featured regularly in this research.

Family member's attendance at C.P.R. events therefore has become, if not routine, then certainly not unusual; some potential benefits to family members were documented, yet individual variation also remains (Alam and Velmahos, 2011, Anonymous, 2013, Colbert and Adler, 2013, Downar and Kritek, 2013, Jabre et al., 2013a, Jabre et al., 2013b, Kramer and Mitchell, 2013).

Theme VI: The early experiences of the workplace including the effects of being a witness

The final theme that emerged concerned itself with the human experience of participation in C.P.R. and similar critical health care interventions. This focussed particularly on novice health care workers and could be seen as part of a more humanistic trend in healthcare research in general. Until the very end of the 20st century C.P.R. research had almost exclusively been science based: the best scientific way to deliver C.P.R.; how to spread the practice and improve its uptake; even the ethics of resuscitation was to a large extent founded on scientific issues of differentiating a heart that was "too good to die" (Johnson and Cross, op. cit.), from those naturally at end of their life. No papers however were identified that discussed "emotional debt" (Simon, 2016) in the context of C.P.R., and specifically from the perspective of young clinicians.

Nursing research started to figure prominently in its own right, and included first-hand accounts of acute care including C.P.R. experience (Page and Meerabeau, 1996, Pups et al., 1997, Clark and Springer, 2012). Whilst these were not detailed hermeneutic interpretations, they represented early attempts to look at the experience of undertaking C.P.R. and other emergency interventions, in the early years of vocational life, as opposed to the research surveys of the anxiety levels that preceded them. Nurses led the way by opening discussions around feelings such as panic (Meerabeau and Page, 1999). This research has moved the debate well beyond the skills and knowledge needed to prepare young health care practitioners. It asked: "what is the emotional impact on them of providing this care?"

Around this time there emerged uncomfortable evidence of unacknowledged problems in access to C.P.R. in hospitals. Sometimes poor hospital engagement was related to the previously unacknowledged physical demands[6] of providing C.P.R. (Lucia et al., 1999): it has now been recognised that a clinician's personal cardiovascular fitness and strength is important. Unfortunately there were concerns that darker limitations, including fear, may be behind the dis-engagement of clinicians (Lambert, 2000, Scott et al., 2003). Research has begun on being a participant in the dying process: the first study on when student clinicians first witness the death of others was recently reported (Kelly and Nisker, 2010). Physician stress, whilst undertaking C.P.R., was becoming acknowledged as research began into its effects upon participants (Bjorshol et al., 2011, Smyth and Perkins, 2011, Bobrow et al., 2013). Almost all this research however has used questionnaire surveys.

Two qualitative papers on C.P.R. participation were identified (Page and Meerabeau, 1996, Ranse and Arbon, 2008). Both papers used focus group methods and had axiological issues around the relationship of the researcher to the participants group. Both were based on interviews initially undertaken by one of the researchers (Page in one and Ranse in the other); these interviews were each analysed later in a collaborative process with their co-researcher. Both interviewers had an educational, and, in the case of Page, a mentorship, relationship with their participants. The later paper (Ranse and Arbon, op. cit.), of newly graduated nurses' experience of C.P.R. was of particular interest, in part because the study was conducted in Australia. In this study, researchers interviewed six participants, each with less than 12 months experience of practice and employed a hermeneutical phenomenological approach to the research. They identified many negative features encountered during resuscitation:

[6] The physical demands of C.P.R. identified post hoc unexpectedly correlated with the experience of the study participants. Unfortunately, for many of them, however much they had been warned about it, it was surprising how demanding the process was in real life.

> *A chaotic resuscitation environment, having too many or not enough participants involved in a resuscitation event, being publicly tested, having a decreased physical and emotional reaction with increased resuscitation exposure and having a lack of an opportunity to participate in debriefing sessions.* (Ranse and Arbon, 2008: 38)

One missing detail of this research is that Ranse and Arbon did not formally specify the implications of their choice of a particular sociological framework. There were too, other important differences between this study, as it was conceptualised, proposed, undertaken, and will be reported here, and that of Ranse and Arbon (op. cit.), namely:

- The nurses were from a single tertiary centre hospital in South Australia, rather than being dispersed, as this study was, between rural and metropolitan sites, and across several different Australian states.
- The qualitative data generation was from two focus groups of three participants each. The researchers acknowledged misgivings about single person interviews, as they were concerned that a qualitative methodology had not yet been established in resuscitation research. Interestingly however, their paper acknowledged that a true hermeneutic approach should require them to be interested in the experience of single individuals, which would necessitate, at minimum, one to one interviews. As this was what the study originally planned to do, it was both reassured that this was the correct approach, and, furthermore, that it had not been researched previously. By interviewing face-to-face it was hoped to obtain more granularity. This study also intended to interview a larger sample of participants, having proposed and agreed with my supervisor that I would conduct 16 interviews for this project: to widen and deepen the existing research.
- The junior nurses interviewed were mainly involved in initiating the C.P.R. request (and in assisting with the arrest as required). I planned to interview junior doctors, some of whom, it was speculated, could be exposed to higher levels of responsibility than they had anticipated. It was considered possible that, due to extreme circumstances, they could

end up in higher positions of responsibility than they had been prepared for. Therefore the tasks and the responsibilities between the two groups would be significantly different.

- Finally, Ranse has been a specialist nurse in resuscitation with many years of experience of being part of the management of cardiac arrests: the researcher's last cardiac arrest was in 1980, over thirty years earlier. Therefore, though having an acknowledged *a priori* engagement with the subject matter, this researcher's interest was in that sense more distant and uninfluenced by current experiences in educating young doctors (C.P.R. tuition is a highly specialised area within medical education) or being part of modern resuscitation practice.

Additional research area

Whilst not initially part of the main literature review, I later searched for specific references to the sudden death events of young adults. This was in response to several distressing accounts narrated during the interviews. During this research study, this issue of previously well asymptomatic young adults presenting with sudden collapse, and dying (despite apparently effective C.P.R.) unexpectedly emerged as one of the main C.P.R. stories narrated by the participants. Although Emergency Departments do everything that they can to save these young patients, almost invariably, their clinical situation cannot be reversed (Raymond et al., 1988). Few other studies have reported on such sudden death presentations, other than noting them when they occur in young adults who collapse and die whilst engaged in sport (Westrol et al., 2010, Link and Estes, 2012).

Unfortunately this new research has shown that, for many of these unfortunate individuals, their demise does not usually remain a medical mystery. It is regularly discovered to be due to the presence of either a previously undiagnosed congenital heart valve disease or a progressive, asymptomatic, and relentlessly evolving cardiac disease: Hypertrophic Obstructive CardioMyopathy

(HOCM). Though less numerous than middle aged or elderly presentations, these patients, and their subsequent deaths, have been shown to exert a profound effect on clinicians, especially when they are of a similar age.

Ethical motivation for the study

The concept of a duty of care has developed especially as part of the overarching responsibilities that mentors and employers have towards young clinicians (Laws, 2001, Newton, 2007, Prince et al., 2005). Recent work has begun to question the long term effects of early exposure in clinical life to adverse events associated with signficant stress (West, 2011) or emotional indebtedness (Simon, 2016). Whilst it is not claimed that this is exactly comparable to the severity of consequences of Post Traumatic Stress Disorder (PTSD), recent publications (Fahrenkopf, A, 2008, West, C, 2011, Oskrochi, 2016,) have begun to research how early stress is associated with later "burnout" in clinicians. Professional "burnout" has many negative impacts: the individual (they can become unable to continue to work clinically and leave the profession prematurely); or society in general (doctors are very expensive to train and their experience may be an irreplacable loss to a health care system); or patients in particular (doctors suffering burnout tend to become cynical and if they continue to work, may perform poorly in their job (Fahrenkopf, A, 2008).

There is now a growing awareness that young practitioners' transition is a chaotic and stressful time, with the emergent possibility that it is linked to the development and evolution of "emotional debt" (Simon, 2016). Research has begun to scope these experiences and contrast them with the individual's pre-qualification expectations, in the hope of offering them a more grounded preparation for vocational life. Nurses have led the way in looking at the effect on staff of participation in front-line, acute care delivery. The first hermeneutic inquiry of young graduate nurses experiences during C.P.R. has only recently been reported (Ranse and Arbon op. cit.).

It is in the nature of health care that clinicians, not just doctors, become exposed to patients who are very ill; some improve, some remain unwell, and inevitably some die. Medical education literature has started to look at desirability of balancing the cost (or effects) of giving care against the emotional requirements to be a care giver or patient advocate (Wilkinson et al, 2009). For Wilkinson and his colleagues, this is an important and under-researched tension within medical professionalism, between "balancing availability to others with care to oneself". Within Symbolic Interactionism, this is the relationship and responsibility that the "I" simultaneously maintains towards both its inner "Me" and external "others" that are made of patients and their families (see later discussion in Chapter 9: Conclusion).

Wilkinson and his colleagues' concerns arose when they were conducting a meta review of assessment tools for blueprinting the assessment of medical professionalism. What their research uncovered was that for many areas (for example policing personal boundaries and the maintainence of clinical competence) there was already a strong professional and lay public consensus on how doctors should conduct themselves. Accordingly there were usually well crafted assessment instruments in existence or being developed, for example the recent adoption of the situational judgement test (SJT) as an common entry point into the N.H.S. for all UK graduates (GMC, 2016). However there were several areas, namely "self-regulation" and "altruism" where the exact relationship between what a professional should do and how their conduct should be judged were at best opaque; the expectations of professions and broader society in these areas are unclear.

In two personal conversations with Wilkinson (2015 and 2016), he expanded on the theme of "altruism". In their research "altruism" could mean "subjugating oneself for others" which was potentially at odds with "maintaining a healthy work–life balance". They had therefore adopted the concept: "balance availability to others with care for oneself." He acknowledged that this is a

concept that medicine in particular and healthcare in general need to spend some time defining; it is not well if at all taught in formal curricula. Currently therefore many novice practitioners have in this area of personal engagement and sacrifice of self, a poorly defined set of understandings against which to titrate their clinical experience.

Given this, a powerful and ethical reason for becoming involved in *post hoc* discussions would be to assit in the professional calibration and formation of personal horizons that form as a result of their C.P.R. experiences. From Gadamer (1975), influential experience (Erlebnis) has a conditioning effect on an individual. Thus one benefit of this study has been to determine if, within C.P.R. there are episodes of traumatic practice, and to estimate the normative gap between how novices and senior staff experience C.P.R.

Summary

Since its introduction in the early 1960s the scope of C.P.R. has expanded beyond the confines of the emergency hospital setting where it began. There are now many more sites where it takes place, more members of the community members are trained to initiate the process and thanks to A.E.D.s there is now in many places ready access to virtually instant and safe defibrillation.

CardioPulmonary Resuscitation has developed and revolutionised care of some sudden death presentations. The concept of “heart too good to die” (Johnson and Cross, op. cit.) has proved extremely durable. The techniques for C.P.R. have evolved to a stage where there is a very high level of international consensus on the process. It has become much simpler: defibrillation is now reserved for only two shockable rhythms.

With the extension of C.P.R. in the community many more patients, especially young previously fit athletes who collapse suddenly, arrive in Emergency Departments in Code Blue states. Improved access and response times, and TV dramas have elevated the public's expectations for a reversible and treatable event; unfortunately the opposite is true. As C.P.R. has become more ubiquitous, popular fictional accounts have mythologised its likely benefits. This has raised unnatural personal expectations within staff of what they should achieve, and perhaps also raised the bar on the expectations of family members for what medicine can do.

Despite the radical transformation of C.P.R. several stubborn problems remain. Within the hospital sector, there are two main concerns: some staff remain inadequately prepared, trained, or experienced in managing the complexities of C.P.R.; and too many inappropriate patients are offered C.P.R. Medicine is better at providing C.P.R., but its benefits may ultimately be disguised by initial selection of inappropriate patients and subsequent faulty administration. C.P.R. education and training course have become increasingly standardised at an international level.

The transition literature in clinical vocations has gained momentum since the start of the 21st century (Ives, 2002, Radcliffe and Lester, 2003, Prince et al., 2005, Wall, 2006, Newton, 2007, Duns et al., 2008, Gomer et al., 2008, Roberts, 2008, Small et al., 2008, Pellico et al., 2009). Recently, thinking around the topic of vocational life preparedness has been broadened to look at the emotional upheaval of clinical life, both in general (Laws, 2001), and early life in particular (Pigott, 2001). Although C.P.R. has been inspected in some early studies, it has not been examined in the manner planned in this study. Research has shown an improvement in the provision and standardisation of U.K. undergraduate C.P.R. training between 1994 and 2010 (Barton and McGowan, op. cit.), though until recently (Barton et al., 2013) less was known of the Australian context.

This literature review has identified that there is a paucity of research that looks beyond the technical and cognitive aspects of C.P.R. preparation and conduct, to how the event itself was experienced. Little is known on the effects of successful or unsuccessful resuscitation attempts on newly qualified undergraduates, the most inexperienced members of the resuscitation team. Attention has rarely focussed on dealing with the emotional aftermath of C.P.R., being limited to audit data collection to learn from the procedural aspects of individual interventions.

Healthcare interventions have rightly focussed on patient outcomes first and foremost. It is now however opportune, and within a broader canvas of understanding transition experiences, to explore the formative potential of early immersion into the critical intervention of C.P.R.: for its own sake; as a window for transition into the workforce; and to look at how professional identifies are formed. Hermeneutic approaches are currently extremely rare within C.P.R. research, one-to-one interviews with participants rarer still; it is now timely for them to be applied.

CHAPTER 3: METHODOLOGY

> *"I have no data yet. It is a capital mistake to theorize before one has data. Insensibly one begins to twist facts to suit theories, instead of theories to suit facts."*
>
> Sherlock Holmes speaking in "*A Scandal in Bohemia*"
> (Doyle, 1891-2 (original), 1981 (this edition))

Introduction

The purpose of empirical research is to generate new data, and "the data of human science are human experiences" (van Manen, 1997: 63). Sherlock Holmes existed in a post-Cartesian and Modern world. Holmes never faced the dilemmas of Post Modernity[7] namely: which type of data to uncover; how to resolve the difficulty in persuading self, and others, of its intrinsic trustworthiness; how to choose the processes through which the data is interrogated and analysed to enable subsequent generalisations or tentative assumptions or insights to be drawn from it; and finally how to render the data useful beyond its own self-relevance. Holmes existed in positivist world where facts were established through logical proofs and the world of science would, in time, explain everything, however improbable.

Exploratory research should "develop and fill out as comprehensive and accurate a picture of the area of study as conditions allow" (Blumer, 1969: 42). The great German philosopher Johann Gottlieb Fichte however cautions us to an inherent trap in how we choose to interrogate the world. For Fichte, there is an intimate and living connection between the system of philosophy individuals select and the fundamental nature of that person. The system and the chooser must be mutually aligned to breathe life into each other:

[7] Post Modernity: David Harvey has defined Post Modernity as the condition the world finds itself in after the breakdown of the "Enlightenment project…in which it was axiomatic that there was only one possible answer to any question."

"What sort of philosophy one chooses depends, therefore, on what sort of man one is; for a philosophical system is not a dead piece of furniture that we can reject or accept as we wish; it is rather a thing animated by the soul of the person who holds it."

(Johann Gottlieb Fichte (1762-1814): 16)

An ancient Chinese proverb says: "*to call things by their right name is the beginning of knowledge*". During this doctoral write up there has been rare and limited concordance over exact definitions, meanings and applications of many of the terms used in qualitative research. An example of this is that two of the *paradigms* listed in O.S.1. Schema (Positivism and Interpretivism) have been defined by the qualitative Research Unit of the National Centre for Social Research as *Epistemological Stances* (Snape and Spencer, 2003).

For Philosophical Hermeneutics, linguistic meaning is ontologically inchoate, for "understanding is an event" (Gadamer, 1975: 320). Understanding develops through negotiation, is inter-subjective, and yet is both historic in origin and contemporary. Despite this admonition several explicit definitions and statements of meaning will be offered as a *lingua franca* for this thesis, especially where they relate to commonly used meta-conceptual terms. These definitions are posited merely as temporally situated linguistic anchors, and offer a starting point only: they are not exhaustive statements of fact, but enablers of understanding. They should not generate conflicting or irreconcilable accounts of the phenomenon under study, and should be internally consistent.

Method and methodology

Two terms that, according to Bryman, are frequently confused (Bryman, 2008b) are Methodology and Methods.

A method is a system or way of doing anything, a procedure; more particularly it is an orderly, definite process of investigating. Etymologically method is derived from the Greek word *methodos,* meaning *"a* going after, a pursuit, a system" (derived from *meta* which means *after* or *beyond* or *coming* and *hodos* which means *a way*). Method is therefore research action: methods are "procedures, tools or techniques" of research (Schwandt, 2007: 191). Research methods are the practical activities of research: sampling, data collection, data management, data analysis, and reporting. Method is accountable to, and makes visible, methodological and epistemic choices.

In contrast to method, methodology is usually considered to be the *study* of methods. Schwandt has further defined methodology as:

> *A theory of how inquiry should proceed…involves analysis of assumptions, principles, and procedures in a particular approach to inquiry…governs the use of particular methods…*
>
> (ibid: 193)

The first task of a methodology chapter is to describe and justify the actual ways the data are to be generated; it must therefore make explicit the researcher's *assumptions, principles, and procedures* (ibid). Methodology is the foundational intellectual act before the realisation of the research; Methodology should also expose these foundations or the researcher's foundational prejudices. Methodology is the critical process that credibly explains to researchers and others the nature of researcher's assumption(s) about the research question itself and why they have selected their means of answering it.

This chapter will present and critique the rationale for the philosophical framework within which this inquiry was conceptualised and has been located. In discussing and justifying the chosen methodology for this study, this thesis must navigate a path that avoids applying a "methodological label to a study design that is at odds with even the most relaxed interpretation of that

tradition" (Carter and Little, 2007: 1319), yet, at the same time is "thoughtful, historically and theoretically situated, and flexible rather than dogmatic" (ibid: 1318).

As a practitioner of a scientific discipline this researcher's education had prized established facts. Almost 20 years ago understanding of the complexities of explaining the world exclusively through this single route became insufficient. Single authoritative explanations, whilst in some ways accurate, seemed increasingly limited and partial: richer and more authentic ways of explaining the varying experiences of the world were needed. A formal introduction to Post Modernity (Anderson, 1996, Lyotard, 1984 (1979 original)) was initially through informal conversations with colleagues within the Department of General Practice of Glasgow University. Since that time I have moved increasingly towards an understanding based concept of the world, where universal givens are less trusted to represent the complete picture. Intuitively, Post Modernity has always easily aligned with me; Post Modernity paved the way for Gadamer and Philosophical Hermeneutics to become a part of my mindset.

In 2007 I chose to use a qualitative research methodology for my M.B.A. project (University of Strathclyde). Using the research process developed by the National Centre for Social Research (Ritchie and Lewis, 2003), though intellectually challenging, was, to paraphrase Fichte, reassuringly comfortable. When a potential project for this doctorate was considered, a study that promoted understanding rather than to proving a universal fact was more appealing: from the outset, a qualitative methodology was preferable to a quantitative one. Chapter 1 (Introduction) has already discussed why this was; this matter will discussed further in Chapter 8 (Personal Reflection), where the influence of self on how the original research question came to be framed and rationalised will be discussed.

Lao Tzu has stated, "A journey of a thousand miles begins with a single step." According to Moncur's more modern interpretation (Moncur, 2004: web link), a

more accurate translation of the original Chinese would be: "The journey of a thousand miles begins beneath one's feet" (ibid). From this analogy, the first task of methodology is that it surfaces and make explicit the point of origin of the research journey: where the researcher's feet stood at the start of the research. This clarifies the point of perspective from which one's gaze was cast (Nagel, 1989). Nagel's defence of a personal vantage point from which to interrogate the world is consonant to that of Philosophical Hermeneutics (Gadamer, 2006): each researcher has a unique stance, and a unique lens or series of lenses with which they critique reality. The challenge is therefore is to inter-mingle one's personal inner lenses and one's outer selected lenses so that they complement each other. Furthermore the use of any external lenses must accord with accepted or common use by others; or, if one departs from this, then one must avoid an interpretation of the lenses that strains "*even the most relaxed interpretation of that tradition*" (Carter and Little op. cit.).

Once the vantage point is determined, the second task of methodology becomes to decide on its destination: the research question and how it should be addressed. Perhaps the most famous exhortation, cited by Couger, about the rigour necessary when defining research questions, is that often attributed to Albert Einstein:

> *John Dewey believed that a problem well stated was half solved. Albert Einstein was even more emphatic about the importance of the definition of a problem. He was once asked: "If you have one hour to save the world, how would you spend that hour?" He replied, "I would spend 55 minutes defining the problem and then five minutes solving it."*
>
> (Couger, 1995: 178)

Rationale for this research

As outlined earlier, few previous research studies had generated human experience data within the event of C.P.R., and none had done so in the circumstances this study proposed.

Through listening to their story the research would illuminate: how it was perceived by them; what made it memorable to them; which aspects of the resuscitation process were unanticipated by them; which aspects of the resuscitation process were other than they expected them to be? This would broadly address the question of alignment (or lack) between expectations and experience, and was framed as research question 1: *How do the participants' expectations of participating in C.P.R. align with their experience of it?*

The practical intent of this research was to determine whether the participants' actual experiences could inform the future preparation of undergraduates for C.P.R. This was framed as research question 2: *What potential improvements could be made to the current preparation of medical undergraduates for C.P.R.?*

The third agenda running through the research was to understand the narratives offered from the perspective of Symbolic Interactionism. This was undertaken because of an initial conceptualisation of the work place as a social and dynamic one, and related, in part, to the interpersonal interactions within the experiences narrated in the trial study. The exact nature of what would be uncovered would be determined by the witness offered by the participants and therefore a specific question could not be posed. And, so, the third question was broadly stated to be: *What additional insights are offered when participants' narratives are analysed using the sociological framework of Symbolic Interactionism?*

And finally, whilst not initially within the research agenda, an emergent issue that surfaced during the study was around the support needs (debriefing/simple ventilation or more professional mentoring) of young clinicians. This was framed around questioning whether all young clinicians need support post C.P.R., if so when it should be offered. The role of individual with responsibility for offering post C.P.R support also emerged as requiring clarification at this stage. The fourth research question, inserted during the study and justified retrospectively, was: *What are the post CPR support needs of young clinicians?*

The study was designed as empirical research, within the naturalistic tradition (Lincoln and Guba, 1985, Schwandt, 2007). Following Lincoln and Guba's suggestion (1985: 8), naturalistic enquiry will not be defined other than to note that the study is to be situated "in the natural world" (Denzin and Lincoln, 2005: 24). The study was conceptualised to receive un-manipulated data from participants' experience; it would not determine *a priori units on the outcome* (Lincoln et al, 1985: 8). Definitions of what is meant by quantitative research abound (Ritchie and Lewis, 2003: 2). The definition by Denzin and Lincoln, offered below, is as helpful as any:

> *"Qualitative research is a shared activity that locates the observer in the world. It consists of a set of interpretive material practices that makes the world visible. These practices turn the world into a series of representations…qualitative researchers study things in their natural settings, attempting to make sense of, or to interpret, phenomena in terms of the meanings people bring to them."*
>
> (Denzin and Lincoln, 2000: 3)

Their definition is not offered here as the orthodox truth. Rather, it holds within it a number of key properties of the activity: its location in the natural world; the use of reified representations; a purpose of sense making and establishing meaning(s). The definition is a starting point to facilitate understanding, not an unqualified end point. It is offered as a more positive

delineation of what qualitative research is, than the simpler definition of Strauss and Corbin, namely:

> *"...any type of research that produces findings not arrived at by statistical procedures or other methods of quantification."*
>
> (Strauss and Corbin, 1998: 11)

The paradigmatic, methodological, ontological, epistemological, ideological, axiological, and method (research process) choices that define the milieu within the research is situated will now be outlined.

General discussion

A paradigm may be defined as: "a basic set of beliefs that guide action, containing the researcher's epistemological, ontological and methodological premises" (Lincoln and Guba, 2000: 19). This doctorate will resist becoming a combatant in the *paradigm wars* (Bryman, 2008a), and use the term within the research framework advocated in the Ed.D. Open Studies One (O.S.1.) unit. This framework, shown as Diagram 3.1 Ed.D. research schema, offered five possible paradigms: Positivism, Postpositivism, Interpretivism, Critical Theory and Constructivism (Hedge and Enslin, 2008).

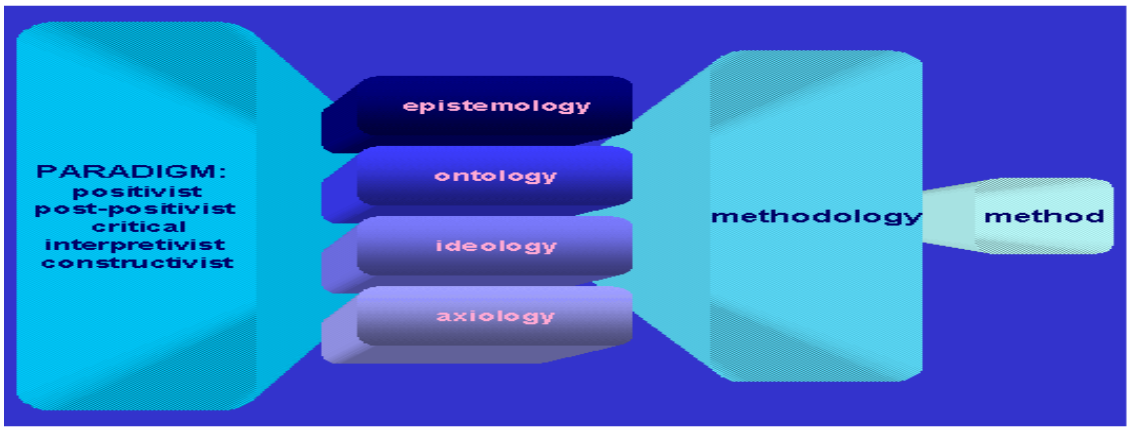

Diagram 3.1, Ed.D. ***research schema***

Paradigms offer a practical conceptual skeleton for researchers to think about their inquiry, undertake their research, chronicle the analysis and synthesis of their findings, and ultimately prepare these labours for public scrutiny. The normative tendency of paradigms is both their strength and weakness (Patton, 1978: 203). Paradigms thus offer those critiquing scholarly work a coherent, overarching framework on which to judge consistent application, alignment and integration of a number of discrete metaphysical concepts within an accepted tradition.

The full O.S.1. research schema provides opportunity for a formal exposition of the consequences of paradigm choice, viz. the resulting epistemological, ontological, ideological and axiological dimensions that flow from the initial choice of paradigm. Whilst the O.S.1. schema offers an effective structure, within this study the model experienced has been less boundaried or linear. It has been more complex and has comprised a multi-layered set of connections and iterative influences, with an organic overlap between its various dimensions. Growth of understanding, or clearer exposition in one dimension, has invariably provided further clarity in the others; the whole evolved as each philosophical choice influenced my overall understanding of the process and its components.

Initial consideration was made of the Simple Relationship model, see Figure 3.1 below, (Carter and Little, 2007: 1317) as a means of displaying the relationship between Epistemology, Methodology and Method (action process).

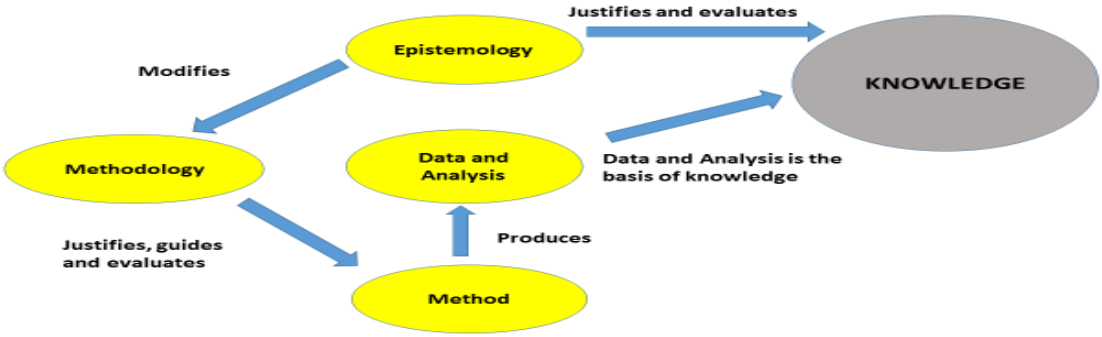

Diagram 3.2, The Simple Relationship between Epistemology, Methodology, and Method

Carter and Little's model was a tempting one as it focussed almost exclusively on epistemology: "the study of the nature of knowledge and justification" (Schwandt, 2001: 71). However despite the emergent dominance of epistemology within this chapter, the adoption of the O.S.I. 1 framework enabled formal inclusion and recognition of ontology, axiology and ideology.

For this study to be of value, the experience of the participants must generate knowledge that is "trustworthy" (Lincoln and Guba, 1985: 218). For Guba, "trustworthiness" satisfies four key criteria, advanced as the qualitative counterparts of quantitative research (1981: 80). These criteria are "credibility" (the substitute for internal validity), "transferability" (the substitute for external validity), "dependability" (the substitute for reliability) and "confirmability" (the substitute for objectivity). The utility or validity of aligning characteristics of qualitative and quantitative research in such a fashion is not universally accepted (Ritchie and Lewis, 2003: 270).

Ultimately however, though there is no universally agreed criteria exist for what constitutes trustworthiness or its "goodness" (Miles and Huberman, 1994: 2), for this doctorate it will be understood as: the employment of a scholarly approach; the demonstration of academic rigour that includes an acknowledgement of limitations; the alignment with respected research traditions; whilst being accompanied by a reflexive commentary that accurately displays the *known-to-self* perspective(s) and biases of the researcher that defines the lenses through which the research data is filtered and refracted. Perhaps the most cogent constraint on the merits of qualitative research is to consider what may or may not be legitimately "extrapolated" from qualitative research. At best therefore:

> *"Extrapolations are…modest speculations on the likely applicability of the findings to other situations under similar, but not identical conditions. Extrapolations are logical, thoughtful, and problem orientated, rather than statistical or probabilistic."*
>
> (Patton, 2002: 584)

Mindful of Patton's exhortation, the study has adopted the stance where epistemology is the key to assessment of the quality of data; the foundation of qualitative research must be an analysis of the study of knowledge itself (Agen, 2000). For Agen, epistemology assumes precedence over ontological, axiological and ideological perspectives. That is not to infer that these dimensions should not be surfaced when they reflect the *a priori* or hidden assumptions of the researcher. It does however acknowledge that detailed expositions of these perspectives are beyond the scope of many doctorates, where the emphasis is not on philosophical argument, but, rather on empirical research.

It has been argued that to explore a pure ontology (Bruner, 1990, Blackburn, 1993) within research is to seek to establish its foundational dimension (Carter and Little, op. cit.). For Carter and Little, interesting metaphysical inquiries about the nature of reality, regardless of how they relate to social reality, will rarely justify significant and specific scrutiny within the cramped agenda of most researchers. They consider that whilst, in their model, ontology, ideology and axiology are not formally included as dimensions to be explicated in detail, there is an expectation that, within the full exposure of their epistemological stance, the researcher's foundational assumptions in these dimensions is surfaced. Furthermore they contend that axiological considerations are usually addressed within the details of the ethical aspects of the research. Though this discussion will follow the format advocated in O.S.1, it will only therefore briefly delineate Ontology, Ideology and Axiology (see below). The focus of the discussion will be concentrated on the epistemological consequences of choosing Interpretivism as the research paradigm.

Interpretivism will be aligned within the Hermeneutic tradition; Hermeneutics will be deployed as a "*second order theory of understanding and interpretation of linguistic and non-linguistic expressions*" (Ramberg and Gjesdal, 2013: web-link). Hermeneutics (Madison, 1999, Gadamer, 2006) is often aligned with Phenomenology (Smith, 2013), though it may be that Hermeneutics has a much longer lineage (see below for explication of this). Whilst in strict terms it is appropriate to think of Hermeneutics as being located within the study of

phenomena, Hermeneutics has been preferenced over Phenomenology (the study of phenomena) within this doctorate because it is:

> *The interpretive study of the expressions and objectifications of lived experience in an attempt to determine the meaning embodied within them.* (van Manen, 1997: 38)

This study has selectively invoked the Philosophical Hermeneutics (Gadamer, 1975 and 2006) and linked this to Symbolic Interactionism (Mead, 1934, Blumer, 1969, Charon, 2010), a school of thought within social science. For Symbolic Interactionism, personal experience is governed by a constant search for consistent meaning; life events undergo continual critique for the symbolic intent of behaviours between the self, the self that one acts towards one's own internal self, and towards external others. Within the Epistemology section proper, a detailed exposition of Philosophical Hermeneutics and Symbolic Interactionism will be offered. The other dimensions of the O.S.1. research scheme (Ontology, Ideology and Axiology) will now be briefly discussed.

Ontology

For Guba and Lincoln (1994:108) one basic question for researchers is the form and nature of reality and, from that, what can be known about it. Whilst there is less variation in the formal choice of an ontological basis for a study than when choosing epistemological or paradigmatic stances, genuine differences over what constitutes reality exist (Schwandt, 2007, Snape and Spencer, 2003). This study locates itself within the choices of theories offered by Snape and Spencer (ibid): *Realism* (and its two variants *Materialism* and *Subtle Realism*): *Idealism (*and its variant *Subtle Idealism*): and *Relativism*. In Subtle Realism, although the existence of social phenomena is independent of their human representation, such phenomena may only be accessed through human representations. Social phenomena need humans to witness them and subsequently form personal, internal versions of them. Hammersley, the major

proponent of Subtle Realism, contends that all knowledge involves human construction: his realism rejects the position that "*knowledge must be defined as beliefs whose validity is known with certainty*" (ibid: 50).

It is unknown whether the levels of anticipated anxiety and concerns over unpreparedness previously noted in junior doctors' expectations (Moss and McManus, 1992, Lambert, 2000, Prince et al., 2005, Duns et al., 2008) is matched by their lived experience. Ontologically therefore, one of the core research aims will be critique pre-existing perceptions of being ill-prepared with actual clinical reality during C.P.R. events. New and empirically generated experiential and reflective data will be explored through researcher's interactions, during one-to-one interviews, with the study population. The attributes of their experiences (those interactions with life that contain enduring significance) will be instances of "mind, thoughts, consciousness, values, feelings, emotions, actions and purposes" (van Manen, 1997: 3). This research therefore has selected Subtle Realism as its ontological basis (Hammersley, 1992).

Ideology

Ideology is *a set of beliefs about the social world and how it operates…both a cognitive map of sets of expectations and a scale of values in which standards and imperatives are proclaimed…as a clue to understanding and as a guide to action* (Wilson, 1973: 91). To highlight the influence of collectives, several groups have further refined a definition of ideology as *the shared framework of mental models that groups of individuals possess that provide both an interpretation of the environment and a prescription as to how that environment should be structured* (Denzau and North, 2000: 24).

Others have lamented however that: *it has become increasingly clear that there is no simple means of separating method from ideology* (Gergen and Gergen,

2000: 1024). Like ontology, ideology may be considered as being intrinsically imbedded within the research process. Within this doctorate a more detailed exposition of formal ideology will not be offered separately. Informal ideological tinting will emerge during the defense of research stance, practice, analysis and discussion. The researcher's social beliefs have already been established within the AIM table.

Axiology

Etymologically the term comes from the Greek words *axios* meaning *worthy*. Axiology is the study of value or worth. Carter and Little (2007: op. cit.) have asserted that, because it contains values, epistemology is, of itself, intrinsically axiological. Furthermore they believe that axiology becomes transparent within a full exposition of epistemology. Epistemology explains and critiques the rightness (or wrongness) of knowledge, and determines the admissibility (or inadmissibility) of types of knowledge, and finally, justifies that knowledge. Knowledge must always therefore be generated through evaluation and justification against a broader set of cultural norms; knowledge is inevitably situated within an axiological frame of reference.

Whilst not confined purely to ethics, axiology has an important readily transparent dimension throughout. Any ethical issue addressed within the proposed research and the conduct of the study proper, the reflexive commentary presented throughout, and Chapter 8 (Personal Reflection) in particular, will be inherently axiological. As with ontology and ideology the presence of axiology will be contained within the body of the thesis.

Research paradigm

Within the O.S.1. research schema, the paradigm that fits best with the stated goals of this research, understand participants' experiences, Interpretivism. Its

core principle is "understanding" (Schwandt, 2007: 160); this aligns with the stated emphasis on epistemology within this study. Early in the thesis development, the epistemological posture of *Geisteswissenschafen* (the sciences of spirit) was explored and adopted.

Wilhelm Windelband (1848–1915) is considered (Marshall, 1998) to be the first philosopher to have identified the dichotomy between what can be known from the laws that govern natural science (*Naturwissenschafen*) and the culturally generated, subjective knowing of human science (*Geisteswissenschafen*). Accordingly, the epistemologies of natural science and human science generate fundamentally different outcomes; causal explanations (*Erklarung*) in the case of natural sciences and understanding (*Verstehen*) in the case of human science.

The starting point for the philosophical aspect of research methodology was the Neo-Kantian writings of Wilhelm Dilthey (1833 – 1911). Windelband's initial use of "*Geisteswissenschafen*" for moral sciences was expanded by Dilthey to include mental and social perspectives and to present an internally generated explanation of events (Makkreel, 2011). According to Makkreel, Dilthey expanded thinking around how *Verstehen* was created, when he conceptualised *Erlebnis* or lived experience. The etymological root of *Erlebnis* is *Erleben,* which means to "be still alive when something happens" (Gadamer, 1975: 56). However initially Dilthey did not fully differentiate between Erlebnis and Verstehen (Makkreel, 2011, Gadamer, 1975: 57), for initially Dilthey did not recognise that Erlebnis need not necessarily promote self-understanding. The difference for Verstehen is that it offers novel understanding: it results from an act of intellectual consideration and judgment, rather than being a mere regurgitation of previous representation or a pre-existing version of reality. In seeking this interpretation, there must be a search for implicit or hidden meaning. This active interpretation, rather than uncritical or passive regurgitation, becomes the basis for a hermeneutic process, for:

> *"A hermeneutics that regarded understanding as reconstructing the original would be no more than handing on dead meaning"*
>
> (Gadamer, 1975: 167)

According to Gadamer (op cit: 57) it took many years for Dilthey to recognise that it is the experiential potential of Erlebnis that is the true root of self-understanding. This uncovering requires formal relationships with other selves: one is with one's own inner self, and one is with the outer selves of others. This understanding of a double internal self and of the two relationships discussed above in many ways anticipated and aligned with the social theory of Symbolic Interactionism, and, in particular, Meads seminal thinking on inner "dyads" (Mead, 1934, Aboulafia, 2012), including the relationship between the "I" and the "Me". Max Weber played an important step in the further development around understanding: he promoted the idea of an idiographic interpretation of the participants' uniquely socioculturally situated events, rather than generating from them nomothetic laws applicable to all (Kim, 2008).

Theoretical Frameworks:

Within this thesis the analysis will be sited within a single individual, this author. Much of the prior reflexive analysis was undertaken to establish the point of his gaze; there is no *view from nowhere* (Nagel, 1986). Additionally, three theoretical lenses have been used throughout: the Philosophical Hermeneutics (P.H.), as a second order theory, of Hans-Georg Gadamer; the sociological framework of Symbolic Interactionism (S.I.); and the Experiential Learning Theory (E.L.T.) of Peter Jarvis. These theories will on occasions be deployed individually, and at other times be deployed in support of each other. Each is now discussed. The discussion on Philosophical Hermeneutics is preceded by a general introduction to Hermeneutics.

Hermeneutics

Dilthey's concept of *Verstehen* was one important step in a long development of the Hermeneutic tradition, which stretches back to ancient Greek philosophy (Gadamer, 2006). In the earliest incarnations of the art of interpretation the term was etymologically aligned with the Greek god Hermes (Gadamer, 2006). In mythological times Hermes descended from Mount Olympus to give mortals the verbatim word of the Gods (predominantly of Zeus). Formal concepts of "hermeneutics" are first thought to begin with the writings of Plato (Sedley, 2013). As the voice of Socrates in the *Cratylus,* Plato states: *I should imagine that the name Hermes has to do with speech, and signifies that he is the interpreter, or messenger, or thief; or liar, or bargainer; all that sort of thing has a great deal to do with language,* (translation: (Jowett, 2015). Plato thus captured the essential paradox of the messages. Hermes always spoke the truth, but whose truth it was, and what the divine messages meant, was another matter entirely. How his message was heard, and therefore subsequently interpreted, enabled truth to become scrambled or at least appear opaque.

The basic purpose of Hermeneutics therefore is that of negotiating meaning. From an ontological perspective, Hermeneutics takes meaning to be an inter-subjective construct: it is never static. Meaning may be relatively stable historically (especially when the world order is unchanging) but, ultimately, meaning changes over time, and is discovered in the interplay between speaker and listener. The challenge for a scholarly research approach to Hermeneutics is to employ sufficient rigour to the exogenesis of meanings that are claimed, so that others, who are not party to the initial dialogue, feel connected with and not alienated from it.

From its earliest incarnations a war between literal and metaphorical (even allegorical) meaning of language has waged. Hermeneutics has been played out in two important arenas (Gadamer, 2006). Firstly, in a jurisprudential sense in law courts, beginning when Greek culture dominated, and culminating in the hegemony of the Roman Empire. Law(s) needed to be interpreted remote from

the Assembly (in the case of Ancient Greece) or the Senate (in the case of ancient Rome). Secondly, in the Middle Ages, and culminating in the upheavals of the Reformation and Post-Reformation Europe, in the study of the Bible, and what was meant by the Gospels and the word of God. This doctorate will not however discuss Reformation Hermeneutics and Martin Luther's claims of *sola scriptura*[8].

Similarly this thesis can only briefly acknowledge the contribution to Hermeneutics of Benedict de Spinoza, who exhorted, in *Tractatus theologico-politicus* (*Theologico-Political Treatise*), that one should be aware of the historical context for meaning, especially when trying to decipher "all the passages which are ambiguous or obscure, or which seem mutually contradictory" (Spinoza, 1670). For Spinoza, the historical horizon at which the texts were written was just as influential as the historical context in which they were read (Nadler, 2013). The temporal situation of a text affected how it was written and what would be understood from it.

Spinoza was one of the first to describe the *hermeneutic circle*; the movements and interplay between the parts and the whole of the text (Nadler: ibid). For Spinoza, understanding of the whole is possible only through understanding of the parts, which in turn depends on understanding of the whole (IMAGE: 3.1, The Hermeneutic Circle). One way of thinking about this is as endless iterative linkages, a relationship akin to the renowned M.C. Escher print of a pair of hands drawing each other.

[8] *Sola scriptura means by Scripture alone*, through which every reader makes the truths of the text her own, and its particular emphasis on inwardness.

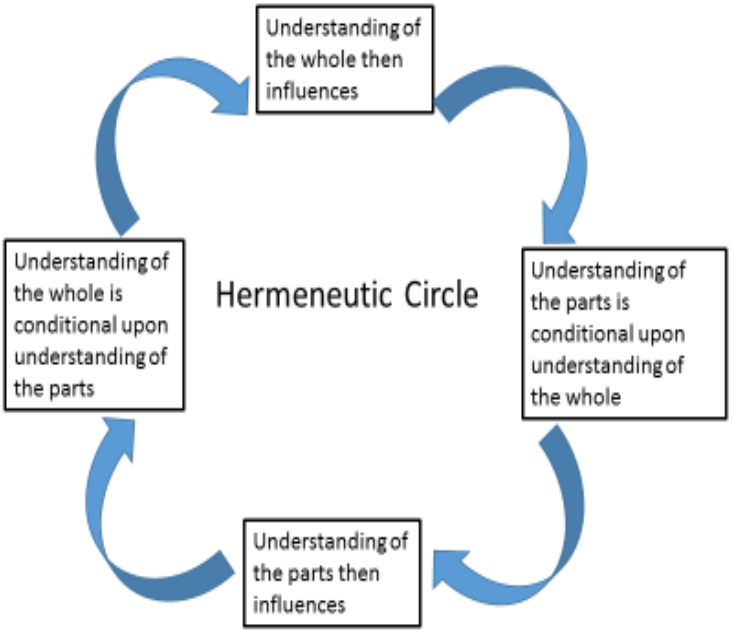

Image: 3.1, The Hermeneutic Circle

Further advances in Hermeneutics were made in the eighteenth century when, in 1742, in *Einleitung zur richtigen Auslegung vernünftiger Reden und Schriften (Introduction to the correct interpretation reasonable speeches and writings)* Johann Martin Chladenius (1710-1759) formulated his philosophical theory of understanding (Ramberg and Gjesdal, 2013). To differentiate and liberate Hermeneutics from logic, Chladenius crafted a typology of *points of view*. This enabled him to justify the normal variations in personal perception that result in the variety of different meanings that are attributed to the oral communication acts of others. According to Ramberg and Gjesdal, from this time Hermeneutics walked "hand in hand with epistemology" (ibid). With his linkage of the search for truth and the search for meaning and understanding in communication, Chladenius foreshadowed 20th century hermeneutics, in particular, the Philosophical Hermeneutics of Gadamer and Ricouer (Madison, 1999).

In a similar manner, only limited acknowledgement is offered here to Georg Friedrich Meier (1718- 1777), who critically asserted that the meaning of a non-

verbal or natural signs was its relationship to other signs (Ramberg and Gjesdal, 2013). What he discussed in *Versuch einer Allgemeinen Auslegungskuns* (*Attempt at a General Interpretation of Art*, 1757) was a natural fit with 20th Century Symbolic Interactionism, but was again beyond the scope of this doctorate to explore.

Friedrich Schleiermacher (1768-1834) is held to be the first to assemble "the intellectual currents of the time, so as to articulate a coherent conception of a universal hermeneutics, a hermeneutics that does not relate to one particular kind of textual material… but to linguistic meaning in general" (Ramberg and Gjesdal, 2013). Schleiermacher insisted that we must interrogate our own, often deeply concealed, hermeneutic prejudices; the filtering, the perception of the speech acts of others, began with scrutiny of our own inherent biases of personal culture, theology and philosophy. From Schleiermacher therefore, comes the notion that: "all use of language is located somewhere between radical individuality and radical universality. Neither of these exists in an entirely purified form" (ibid). Ontologically therefore, and aligned with the ontological choice of Subtle Realism, meaning is communicated by the social phenomena of language, and this is personally mediated in its transmission and reception. Within hermeneutics and epistemology therefore, language therefore is placed front and centre, as a fundamental part of our nature. In the 20th Century, both Hans-Georg Gadamer and Paul Ricouer offered major contributions to hermeneutics (Madison, 1999).

Theoretical Framework 1: Philosophical Hermeneutics

This doctorate will adopt Gadamer's, and not Ricouer's, interpretations, stances and perspectives, and site the thesis particularly within his Philosophical Hermeneutics (Gadamer, 1975 and 2006). Other philosophers have rejected Philosophical Hermeneutics. One of Gadamer's most outspoken critic is Jürgen Habermas, 1929 - , the leading exponent of Critical Theory (Bohman, 2015), who

has long viewed Gadamer's position as being naïve. According to Habermas, Philosophical Hermeneutics relies too much on the authority of tradition, within which there is no place for critical judgment and reflection (Bohman and Rehg, 2014). Over the most of second half of the 20th Century, and until the death of Gadamer in 2002, Gadamer and Habermas critiqued each other's position extensively, a debate this doctorate will not engage in.

Gadamer was a follower of Martin Heidegger (1889–1976). Heidegger asserted that language is the house of being, a shared reality with others in a *common and commonly known world* (Wheeler, 2014). In developing his Philosophical Hermeneutics, Gadamer insisted that historical works can never be value free or neutral objects: all are formed from unique "horizons" (Gadamer, 1975: 246). The perspective of an individual, which includes their *Vorurteile* or *prejudices* (Gadamer, 1975: 282), results from *Wirkungsgeschichtliches Bewußtsein* (the *fusion of horizons*). This "*fusion"* is generated through a dialogical interaction between the individual's present and their past. Gadamer totally refuted the Enlightenments "prejudices against prejudices" (op. cit.: 283). Within his Philosophical Hermeneutics, he insisted that total comprehension required one to bring one's own presuppositions into play: for complete meaning, personal insights are *unaufhebbare* or "ineradicable" (Gadamer and Palmer, 2007: 62).

As discussed in the literature review, there is a research space for perspectives of the human experience of delivering C.P.R. As indicated earlier this researcher's desire for this understanding could be viewed as a strategic response to a deep seated personal agenda. From a Gadamer's perspective, this motivation is however legitimately generated in the merging or 'fusion' of the respective horizons of the interpreter and the hermeneutical object. In defending "fusion" Gadamer liberated personal awareness. Understanding is always driven from the subjective, and inevitably involves "fusion".

A reflexive and open emancipation of past experience in fact became a necessary step to ensure rigour. Gadamer explained it thus: *"to bring about this fusion in a regulated way is the task of what we called historically effected consciousness"* (Gadamer, 1975: 317). A truly reflexive approach is not a casual or automatic process but a key and skilfully undertaken pre-requisite of quality. The resultant fusion however is much more than an inter-splicing of legitimate horizons, or indeed a mollifying process to erase any conflict between alternate horizons:

> *The hermeneutic task consists in not covering up this tension by attempting a naive assimilation of the two, but in consciously bringing it out."*
>
> (Gadamer, 1975: 317)

Gadamer delineated the '*horizons'* of the historically effected consciousness of the interpreter and of the effective history of the object of interpretation thus:

> *Every finite present has its limitations. We define the concept of "situation" by saying that it represents a standpoint that limits the possibility of vision. Hence essential part of the concept of situation is the concept of "horizon." The horizon is the range of vision that includes everything that can be seen from a particular vantage point... A person who has no horizon is a man who does not see far enough and hence overvalues what is nearest to him. On the other hand, "to have an horizon" means not being limited to what is nearby, but to being able to see beyond it…the hermeneutical situation means the achievement of the right horizon of enquiry for the questions evoked by the encounter with tradition.*
>
> (Gadamer, 1975: 313)

This stance of a personal perspective is therefore understood by Gadamer as mandating the reflexive inclusion of one's own *prejudices*. Prejudices are essential and non-pejorative in nature, and must be exposed to the gaze of self and of others. Any view requires a stable platform of reference for its gaze: all views are thus partial and particular, but need not be capricious (Nagel, 1989). It then follows logically that there is no "omniscient and trustworthy

Archimedean point from which to leverage knowledge and wisdom" (Dowie, 2002: 5). This research will accept that the researcher's horizons are indeed fused. It will both respect and interrogate the historic influences on these horizons, through making transparent the ground beneath the researcher's feet, and the reasons for their choice of research lens.

Theoretical Framework 2: Symbolic Interactionism

As the research would understand how C.P.R. experience was perceived and interpreted, it explicitly studied how the individuals made sense of their experience and constructed their own reality during the nascent phase of their vocational life: it was insight generated through subjective knowing. The Interpretivist social theory of Symbolic Interactionism (Blumer, 1969, Lyman and Vidich, 2000, Charon, 2010) is the sociological framework in which the research is sited. The beginning of Symbolic Interactionism is attributed to George Mead (Charon, 2010), its subsequent naming and extensive development to Hubert Blumer (Aboulafia, 2012).

To reiterate, Symbolic Interactionism rests on three central tenets:

1. *"Humans act toward things on the basis of the meanings that the things have for them."*
2. *"The meaning of such things is derived from, or arises out of, the social interaction that one has with one's fellows."*
3. *"These meanings are handled in, and modified through, an interpretative process used by the person in dealing with the things he encounters."*

Symbolic Interactionism has been defined as a 'down-to-earth approach to the scientific study of human group life and human conduct." (Blumer, 1969: 47). Blumer was influenced by the writings of Walter Lippmann (1889 – 1974).

Amongst Lippmann's claims to fame was his coining of the term "stereotype". Lippman contended that *we pick out what our culture has already defined for us*, because people *define first and then see*, as opposed to *see first and then define* (Lippman, 1922: web link). From a Symbolic Interactionist perspective, the participants' pre-vocational life has created within them a proto or rudimentary self that fits into an already defined proto and anticipated world. This research will report how novice physicians, make sense of crucial early clinical experiences, during interactions with *objects* (Charon, 2010) in their world. These objects are both internal (their prior and current selves) and external (others, most notably professional colleagues and peers).

For Symbolic Interactionism, human beings are individual actors in a social drama, culturally located in a particular, and unique, time and space. The actions of individuals in real life dramas are governed by the meaning that *objects* (in the most encompassing sense of that term) are perceived to have for them. Such meanings are iteratively generated and negotiated, consciously and subconsciously, during their purposive social interactions with fellow actors. This search for meaning is undertaken against both external objects and their own internal object. The inner self is generated by social interaction. Mead initially developed his seminal concept of dyads or the "*generalized other*" (Mead, 1934, Aboulafia, 2012), to explain how the self is developed. Blumer extended Mead's concept of the nascent self, created when others interpret our signals the way we intend them to be received (Charon, 2010).

All generalised others contribute to the defining of a person through their interactions and the meanings they generate: for *self becomes a self as self does and others respond (*Weigert and Gecas, 2003*)*. When our actions are perceived the way we want, we move more assuredly towards a confirmation of or a sustained reinforcement of self. Conversely when our actions are perceived in a way that is incongruent with our intentions, dissonance in experienced. Identity is challenged; people become unsettled and embark on an uncomfortable search for other interpretations. This inner object is the "I" that

personally experiences life and which then, upon self-reflection, become known to self as “Me”.

Within this doctorate these two streams of thought of Gadamer’s “fusion of horizons” and the Symbolic Interactionism of Mead and Blumer are brought together in the following manner. The experiences that generate information to self are perceived during social interactions with both one’s own self and the widest possible variety of external others (objects and beings). The way that meaning is ascribed is based on the “I” that countless previous interactions have defined. This “I” is the fusion of each personal horizon that continue to evolve the inner “I”. This “I” is the pure existentially self-aware self, which experiences life directly, but cannot reflect upon itself, as an “I”. It can only glimpse itself fleetingly, like a passenger in a train carriage, as it experiences life, for when it moves beyond sensing self to reflecting on self (when self-awareness is raised up) the “I” it senses changes: the self it is becomes aware of is the “Me”. “Me” is always a past self.

Though the interactions are perceived during social interaction, the interpretation placed upon them is unique to any one individual, as each has their own unique fusion of horizon. However, for Philosophical Hermeneutics, the challenge is not a passive acceptance of historically effected perceptions, but rather through a deliberate act of will to interrogate one’s inner “Me”. Through an active and rigorous, reflexive critique of self the roots of our own *consciousness* should be uncovered, beginning with an honest exposition of our inner assumptions.

Theoretical Framework 3: Experiential Learning Theory (Jarvis)

The final theoretical framework within this doctorate is the Experiential Learning Theory (E.L.T.), 1987 of Peter Jarvis; according to Illeris (2009), Jarvis is one of the most influential and authoritative figures in lifelong learning

circles. His earliest personal influence is a profoundly held belief in Christianity; his interest in faith and the influence of spirituality in learning continues to this day (Jarvis, 2009). His interest in lifelong learning is one manifestation of his broader commitment to inclusive and equitable education for all. Jarvis achieved little at secondary school; his formal education truly began later in life within his service in the Royal Air Force. When he left the military he qualified as a Methodist preacher. Further study and research deepened his engagement with education and in the mid-1980s he began his seminal work into experiential learning. Initially he argued that "all learning begins with experience" (Jarvis 1987: 199). More recently, he has concluded that learning is both existential and experiential; in effect learning now has become "an existential phenomenon" (2012:19).

His most significant educational influence has been John Dewey, who he regards as the "most significant of writers on reflection" (Jarvis 1987: 87). In addition to the societal communitarian appeal of Dewey's philosophical work (Education and Democracy, 1916 and How We Think, 1933, Experience and Education, 1938), Jarvis readily aligns his own work as a development of Dewey's flexible thinking on the potentially negative outcomes of learning. Dewey would recognise such negative experiences as "mis-educative" (1938, Chapter 2). Alongside his resonance with the social inclusiveness of Dewey, Jarvis recognises the importance of Freire's work (Pedagogy of the Oppressed, 1972) on the emancipatory and humanising effects of continuing education for adults, his own particular field. Bruner's contribution (Towards a Theory of Instruction, 1966) validates his own commitment to lifelong education, for Bruner too holds that one part of the natural state of a human being is as a (*lifelong*, author's insert) learner. For Jarvis, Bruner's interest in curiosity is the "outcome of disjuncture" (2004: 207), see below for more detail.

On the importance of the relationship between reflection and learning, he acknowledges a debt to Boud et al (Reflection: Turning Experience into Learning, 1983). Argyris and Schön's work on "reflection-in-action", "espoused" theory and "theory in action", "single" and "double loop" learning (1978), has also been influential in his own E.L.T. He has recognised Piaget (1953) as the

"most influential" of cognitive theorists (2004: 86) and Kohlberg's work on the stages of moral development (1981) is also important (2004: 87). He has some reservations about the extent to which their work is based around children's development, though he acknowledges that Kohlberg's work may extend into the ethics of adult education.

Of the modern theorists, Malcom Knowles and his work on andragogy and pedagogy (The Adult Learner: A Neglected Species, 1978) is valued for his recognition of adult autonomy and the social and personal conditions that motivate the adult learner (2004: 130). The social dimension to learning, favoured by Lave and Wenger (Situated Learning: Legitimate peripheral participation, 1991) and Illeris (The Three Dimensions of Learning, 2002), is a key feature of the milieu in which the E.L.T. is located. Jarvis advocates openly for a social imperative to learning: he describes educational transformational as "learning to be a person in society" (2009: 21).

Jarvis (1987) recognises that David Kolb (1984) has perhaps done most to popularise the concept of experiential learning; he has argued however that his learning cycle represent an oversimplification of experiential learning. For Jarvis, the individual who encounters a new situation constructs their knowledge dependent upon their intrinsic motivation for learning. Thus they can simply memorise, understand or analyse, or create new knowledge through considered active reflection (Jarvis 1987: 19). Kolb limits his model to a single version of "concrete experience" see diagram below. Thus for Jarvis, the main deficiency of the Kolb cycle is that "it does not explore the conceptual cycle about the nature of experience or the person who learns" (2005: unnumbered conference paper). This thesis will not however offer a detailed critique of the work of David Kolb (Diagram 7.1 below), for it is Jarvis' theory that is the critical lens under consideration. It will however detail his reservations, see below, to offer a more complete understanding of how his model conceptually differs from the Kolb learning cycle.

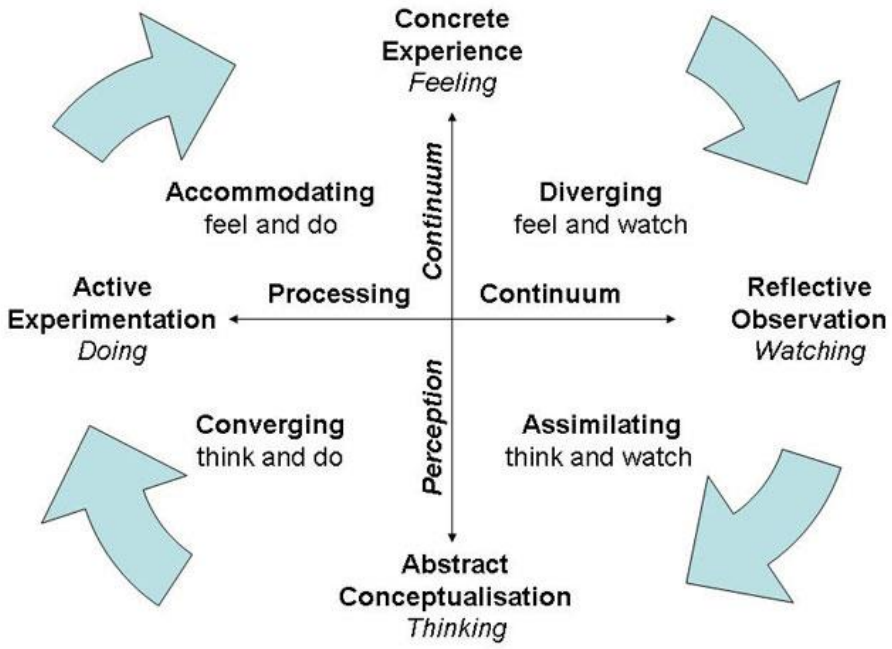

Diagram 3.3: Kolb learning cycle (1984: 42)

It is acknowledged however that, despite the reservations of Jarvis and others (see below), Kolb's theory has continued to be influential (Dennison, 2012). Kolb like Jarvis was himself heavily influenced by earlier writers on learning such as Dewey and Piaget. In particular, the experiential learning model of Kurt Lewin (1951) offered the broad basis upon which Kolb built his own (see Diagram 7.2 Lewinian Experiential Learning Model, cited by Kolb, 1984: 21).

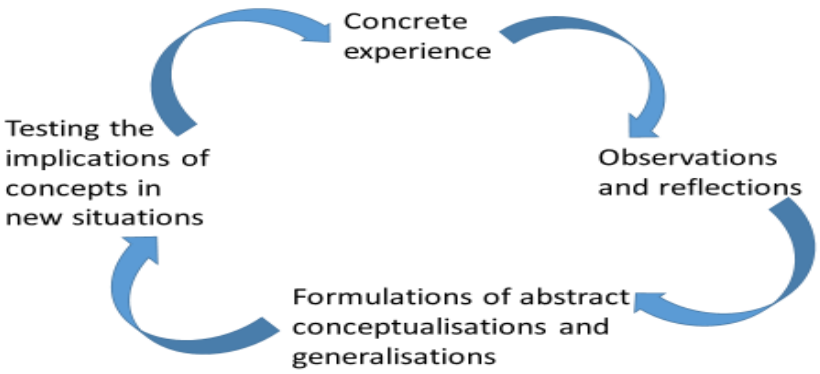

Diagram 3.4: Lewinian Experiential Learning Model

The starting point of Jarvis' research, and his resultant model, was the discomfort felt when, during adult learning theory workshops, he tried, with increasing frustration, to teach and defend the Kolb cycle to others (1987: 20-21). His workshops began with small group activities where participants were asked to reflect upon a learning event and map this onto the Kolb model. As he puts it: "most people who undertook this exercise found it very difficult" (ibid) and so he became dissatisfied and disenchanted with the Kolb model. Accordingly he began to leave formal teaching of the Kolb cycle further and further behind. His presentations became interactions with the participants in which they were asked to reflect upon their own learning experiences. By the end of a series of such workshops, conducted between spring 1985 and April 1986, (across the USA, the UK, and Scandinavia) he had collected over three hundred individual accounts of how individuals navigate experience. Jarvis proposed his E.L.T. in *Adult Learning in the Social Context* (1987); later he has modestly revised it (Jarvis, 2004). His model embraces a social and interactive dimension to learning and legitimises the uniqueness of individual learning. For Jarvis, socially generated learning is as much about existence as it is to the particular experience, for "the learner and personhood are inextricably intertwined" (1987: 37).

Other educators have also voiced concerns of the cycle. Boud et al considers that the Kolb model does not pay adequate attention to reflection (1985). For Illeris (2002) the social dimension to "situated learning", favoured by Lave and Wenger (1991), is not acknowledged. Jarvis' location of the individual within a unique time and space, that is socially and culturally contextualised, is supported by Anderson (1988) who notes a lack of consideration for culture within the Kolb model.

Jarvis's detailed criticisms of Kolb

Jarvis contends that any strict relationship of learning processes to knowledge is intrinsically problematic, specifically however, he has three criticisms of the model:

1. The Kolb model posits strict linear progress with learning, which Jarvis considers unrealistic. He is supported in this view, from an earlier age, by Dewey (1933) who noted that, within reflection, a number of processes can either occur simultaneously or be jumped all together.
2. Alongside Tennant (1977), Jarvis considers that the claims for the four distinct learning styles are an oversimplification (2005).
3. The empirical basis for the Kolb study (unlike Jarvis' own comprehensive 300 plus participants study) was weak, and few studies have sought to replicate it since its presentation to the world in 1984 (Jarvis, 2004).

Philosophically and psychologically, Jarvis positions himself within the concept of a learning *self;* he embraces George Meads' (c.f. Symbolic Interactionism) central concept of "self", a self who is a social construct (1987: 46). From Mead, Jarvis has argued that the mind and the self are learned phenomena (1982, 1987). His model is thus one that naturally aligns with Symbolic Interactionism: it combines his "sociological view of an adult learner with the mechanism of pragmatic learning" (Finger and Asun, 2001: 51). However, with respect to Mead, Jarvis is far more influenced by the social psychology of Mead's dyadic concepts of the "I" and the "Me" than he is by the use of symbols to communicate meaning. Thus whilst he has recognised the importance of gestures (1987: 44), this does not extend to the mature form of Symbolic Interactionism developed by Blumer and the later Chicago school (Charon, 2010).

The Jarvis model illustrates a variety of responses to, and outcomes from, the opportunities for learning that arise within lived experience; these responses are varied. Whilst it is not within the remit of this doctorate to critique the theory itself an explanation will be offered to assist with understanding its later application. It is a complex socially situated model (Fig 7.3 Revised model of Jarvis E.L.T.) within which there are three central components:

A. The **individual,** who has their own pre hoc version of the world before meeting experience, illustrated below.
B. The **episodic experience,** which is the event that has the potential to change the individual, and their world view
C. The **social context,** which are the sociologically defined circumstances in which the experience is located.

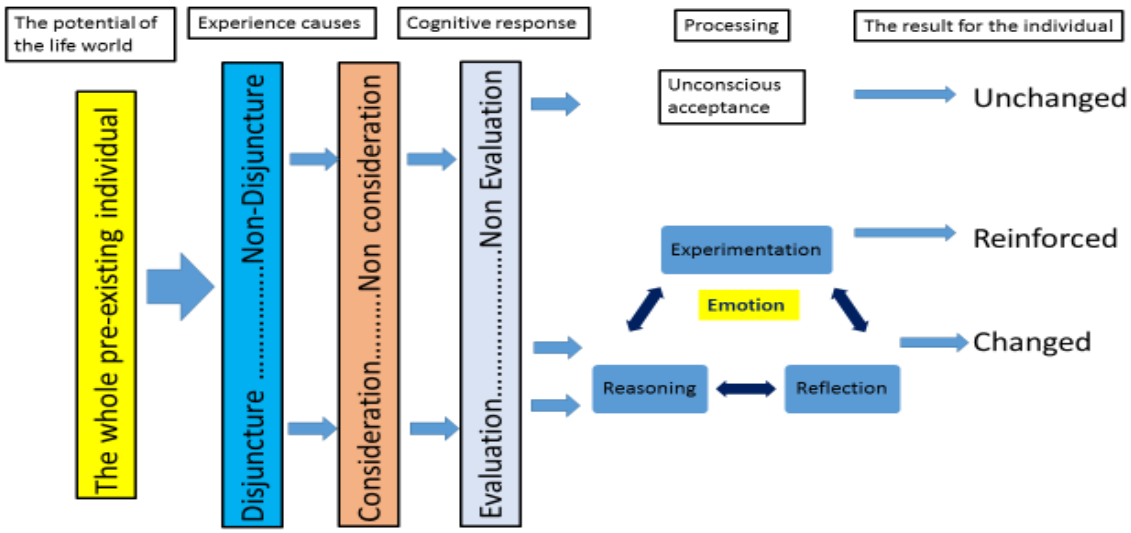

Diagram 3.5, revised model of Jarvis E.L.T. (2004)

Within the model therefore, levels of "disjuncture" may become influential or be ignored. Jarvis has preferenced "disjuncture" (Jarvis 2012: 7 and 11) rather than 'cognitive dissonance" (Festinger, 1957, Festinger and Carlsmith, 1959), noting that "experience begins with disjuncture" (Jarvis, 2005: 25). Experimentation takes a variety of forms (practice, thought or reflection), and

can thus result in change or in reinforcement. The Jarvis model therefore explains how individuals react both cognitively and emotionally to their experience and then learn anew or are re-affirmed from it. From this model, and dependent on the inter-play between these three components, a variety of paths can be traced that result in significantly differencing outcomes. These can be:

- unconscious re-affirmation of the anticipated world, through non-reflective or non-considered reinforcing of the status quo
- conscious re-affirmation of the anticipated world, through reflective or considered reinforcing of the status quo
- unconscious change of the anticipated world, through non-reflective or non-considered processes applied to the status quo
- conscious change of the anticipated world, though a variety of evaluation and reflective processes applied to the status quo.

From Gadamer's perspective the pre hoc reality with which an individual encounters new experience is the result of the fusion of their previous experiences: it is no less than their personal *historically-effected consciousness*. During this thesis the partial adequacy of the philosophical underpinnings of Jarvis' theory have been enhanced through the specific and formal incorporation of Philosophical Hermeneutics to offer traction on the *self* that meets experience. This is presented in Diagram 3.6, Integrated Model of Jarvis E.L.T. (Gadamer "pre hoc").

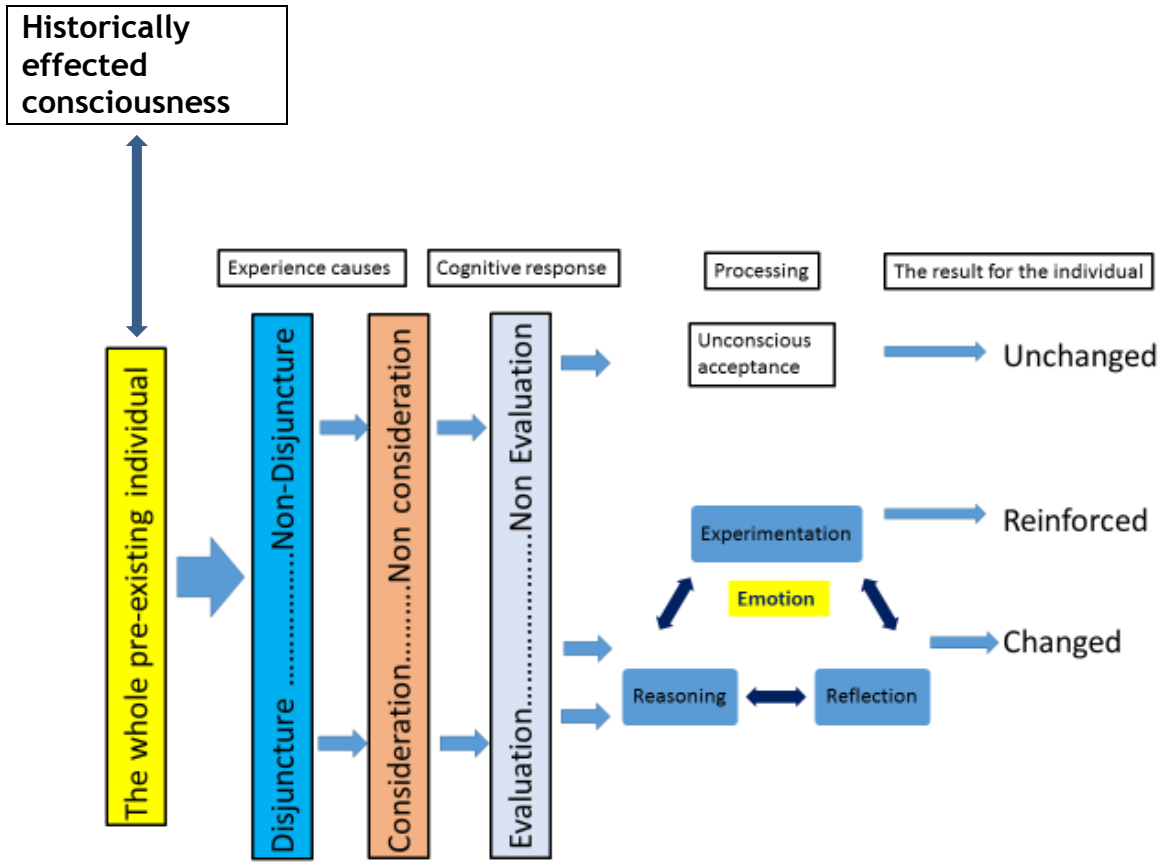

Diagram 3.6, Integrated Model of Jarvis E.L.T. (Gadamer "pre hoc")

The E.L.T. is a complicated model that offers reflects the uniqueness of individuals as they encounter experience. Learning is holistically generated and it may be useful at this point to cite Jarvis' current definition of learning:

> *Human learning is the combination of processes throughout a lifetime whereby the whole person – body (genetic, physical and biological) and mind (knowledge, skills, attitudes, emotions, beliefs and senses) – experiences social situations, the perceived content of which is then transformed cognitively, emotionally or practically…and integrated…resulting in a continually changing (or more experienced) person.*
>
> Jarvis (2009: 25)

Symbolic Interactionism therefore is the means through which social experience is perceived and then understood: it is the personal filter that renders initial meaning to the social experience itself, and is used to process the new experience. It is thus the essential mechanism that determines whether the situation is experienced as "disjuncture". The individual that experiences reality is one who is made up of a fusion of previous unique horizons which determine their expectations (conscious and unconscious) of the anticipated world. Within the model when initial personal meaning results then the individual uniquely navigates through the model and emerges reinforced, challenged and is resilient, or changed as a result.

Combining the three theoretical frameworks into a single instrument

This thesis contends that there is a strong and natural alignment between Jarvis' E.L.T., Blumer's S.I. and the P.H. of Hans-Georg Gadamer. Within the doctorate these three individual filters or lenses are combined within the author into a single instrument through which the entire study has been refracted. The research process is more than the single isolated use of each of perspectives or their use in combination. Analogous to the earlier requirement for alignment within the chosen paradigm of ontological, ideological, epistemological and axiological stances, the three theoretical frameworks offered a harmonious and complementary whole. Within the researcher, interconnection between the frameworks has been actively strengthened as they have been understood and experienced in the conduct of this research. From both the perspective of E.L.T. and P.H., this author has continued to learn for he is "continually

changing" (Jarvis; ibid). Thus the true relationship between them is symbiotic; it has rarely been simply additive.

Within Chapter 7 (Discussion), this integration has resulted in a further development of the Integrated Model of the Jarvis E.L.T. (with Gadamer "pre hoc"), the "holistic E.L.T.": the "holistic E.L.T." model fully integrates historically-effected consciousness (*Wirkungsgeschichtliches Bewußtsein*) and Symbolic Interactionism. Additionally, the accommodation of this integration within this author's personhood during the study and its writing, is discussed in Chapter 8: Reflection.

Researcher's experience of the trial study

The trial study modelled a similar inquiry process to the main study. The trial study was designed to offer insights into anything that might ultimately challenge the empirical basis, epistemological foundations, methodology, methods, viability, feasibility, rigour, credibility and utility of the proposed main research. Part of the motivation for the main C.P.R. study was the untested personal belief that, despite many years of clinical practice, early clinical events remained important: that memorable events within a doctor's early career (identified in the trial study as their *worst and best day in early clinical life*) retained high value in their professional lives. The trial study formally inquired of peers whether their perceptions of their early experiences remained as vivid and influential to them as this researcher held his to be (see Preamble).

The trial study confirmed that historic individual experiences held a wide variety of meanings. Six doctors narrated broadly similar events within their early professional life. The trial study demonstrated that mature clinicians, with minimal preparatory time for reflection, could readily recall significant events from their early, and often, now distant clinical life. Yet, though the clinical tasks discussed were relatively homogeneous, how they were experienced, and

what significance and meanings participants were subsequently ascribed to them, was individually negotiated with both their inner self and with external others.

One of the most informative aspects of their narratives was when they lapsed into conversations with themselves. They might for instance say: "*so I thought to myself "if this does not get any better"…*" This confirmed that the intended use of Herbert Blumer's Symbolic Interactionism, with its emphasis of creation of a self that one acted towards, sat comfortably with the early development of their professional identity. S.I. offered a common tent within which to locate, interrogate, and understand these diverse experiences.

Furthermore, in the trial study, the participants were comfortable in discussing these experiences in a one-to-one setting. If they became emotionally upset they could be supported and enabled to continue to discuss the matter at hand. Therefore one of the principal ethical concerns for the doctoral study did not emerge in the trial study: no one needed counselling after their interview. During the trial study an interview technique was practised which was balanced between a need, on one hand, to respond to emergent issues in the story telling and, on the other, to hold to the agenda of the checklist and thereby ensure coverage of key checklist themes.

One insight gained during the trial study was that the study began with this researcher; this uncomfortably challenged the unknown personal motivation for this C.P.R. research. It was only during the trial study proper that realisation began to dawn that the continued influence of early clinical experiences was a key motivation for the initial choice of C.P.R. as the doctoral activity. Thus, while in the initial proposal there were valid and objective reasons for studying this topic (improving the current preparation of medical undergraduates in my educational care), subjective roots back to 1977 began to be exposed.

Resulting method of the study proper

The main study used a qualitative methodology for data generation. It offered one to one, in-depth, interviews, using a semi-structured topic guide for the initial part of the interview (see end of this chapter). Although complex, authentic, vocational, and socioculturally contextualised data could have surfaced attitudinal perspectives that influenced professional practice, the study was never formally constituted as an ethnographic one (Moriarty, 2011): a single interview, rather than a prolonged sociocultural immersion in the world of the participant(s), was planned with each participant.

None the less, a potential ethnographic dimension to the interviews was initially considered as individuals' personal faith or belief systems could have potentially underpinned personal concepts of life and their witness of death and near-death. And too, in the preparation phase, individual support mechanisms were initially postulated to vary significantly through membership of social groups, faith or family, cultural or other common interest networks. This matter is discussed further in Chapter 4 (Data Collection).

I planned, by means of calculated avoidance of anticipated collusion opportunities, to limit agreements to facilitation and encouragement to volunteer deeper perspectives. Through challenging understandings when meanings were opaque, a form of *epoché*[9] would be observed. This would be the weak or local *epoché,* similar to that advocated by Husserl (Beyer, 2013), as opposed to the strong *epoché,* which was judged unrealistic given the researcher's prior experience in the world and its likely influence upon him. This was planned to ensure maximal disclosure whilst minimising any direct researcher influence on the study. Given however the earlier discussion about *Horizontverschmelzung* (Gadamer, 1975, op. cit.), this may only ever have been an unrealistic attempt to restrict the researcher's unconscious gaze.

[9] *Epoché:* Greek, meaning suspension

It was planned to follow participants' comments, and to select fruitful areas for further explication, to incorporate the dual influences of the data creation. Interviews would studiously avoid all formal terms that were linked to Symbolic Interactionism: for example, there was conscious avoidance of the words "identity" or "self", and these concepts were not explored per see at interview. Instead reliance was placed on the analysis phase to identify any instances where this topic arose. This would minimise skewing of the interviews and reserve the framework of Symbolic Interactionism for analytical purposes.

Sample process

It was proposed that the sample population be 20 participants, with the expectation of generating good data from at least 16 interviews. The participants for this research were to be drawn from the cohort of interns beginning work in the state of Victoria, Australia, in January 2013.

A purposive sampling frame was constructed to ensure access to a wide range of perspectives. Salient participant characteristics were identified: participant sex and age; C.P.R. outcome (successful or unsuccessful); location of undergraduate study (anticipated to be either Monash or Melbourne University); details of prior undergraduate training in C.P.R.; personal faith or belief system; team or singleton management of C.P.R.; and the level of responsibility during the C.P.R. event. Due to these recruitment difficulties, see Chapter 4 (Data Collection), this recruitment strategy was later amended from purposive to convenience; such diversity as was achieved was through emergent adhocracy rather than by deliberate design.

Ethical considerations

Once the study design was agreed with my supervisors in Open Studies 2 (Professors Penny Enslin and Nicki Hedge), ethical approval was sought. A dual

application was made for the trial study and the main study. Approval from School of Education's Ethics Committee (Appendix: Glasgow ethics) for both studies was granted on the 7th of March 2011, with no revisions, and informal recruitment for the trial study began through contact with local colleagues in Melbourne. The trial study was concluded before the ethical hurdles, reported below, for the main study, emerged and required additional action.

Due to the change in my personal circumstances (I had moved both my country of domicile to Australia, and my workplace to Monash University, since the initial conceptualisation of O.S.1.) I subsequently reviewed the adequateness of the ethics approval. It became apparent that ethics approval from the University of Glasgow would have no legal standing in the state of Victoria, Australia. Therefore a further two ethics applications were made to Monash University Human Research Ethic Committee (MUHREC): approvals were granted (Appendix MUHREC).

Recruitment

Awareness and advertisement of the study was offered in a variety of indirect ways:

1. presentations to graduating doctors from Monash University's final year MBBS
2. through the junior doctor network in Victoria
3. through hospital education officers
4. through posters (see appendix Poster: C.P.R. study)

Recruitment would be through self-identification and enrolment by participants. Participants were to be recruited after they undertook an attempt at C.P.R., regardless of its success, through direct approaches by individual doctors to the researcher. Word of mouth was anticipated to facilitate opportunistic

recruitment of colleagues of those already interviewed. Later poor initial recruitment results necessitated modification of this approach (see Chapter 4: Data Collection).

Data collection and interviewing

The participants would be offered an initial email or telephone contact with the researcher and subsequent correspondence (anticipated to be by email). Participants would be sent a standard copy of the research aims and an explanatory note. Before their interview, each participant would sign a consent form, acknowledging their role and part ownership of the data that the interview will create. This would be retained by the researcher.

A separate copy that acknowledged the researcher's responsibilities would be retained by the participants. This would contain a *revocation of consent* clause, a Monash University specification. At the enrolment the participants' identity would be known only to the researcher. Copies of the signed consent, and a coding document that identified the participants would be retained by the researcher in separate, secure, locked cabinets at his work premises.

To address axiological concerns that the researcher would represent a source of authority, the interviews would be offered at the preferred location of each participant: chosen by them to be a neutral, convenient and safe venue (most probably located within their own hospital environment). All interviews would be recorded using an Olympus DS-2300 digital voice recorder and the tapes transferred onto a secure hard drive on a PC within Monash University. Separate backups would be made onto a password protected USB drive.

The interviewer would use open questions and employ facilitation techniques. Responsive questioning would maintain a narrative flow. Modification to the

interview schedule would develop naturally as the interviews progressed. All interviews would be audio-recorded, transcribed verbatim, and stored anonymously as numbered audio and text files. The interview topic guide was accepted by both ethics committees. As the research progressed it was anticipated that the focus of the interviews would be iteratively modified to reflect the understanding gained in previous interviews, whilst still retaining the topic guide as the prime directive.

Data collation and security

To establish the framework for transcription the initial four taped interviews would be transcribed by the researcher. Further transcriptions were planned through use of transcription software (Dragon Speech Recognition), though early consideration was given to using a professional transcription services. For any subcontracted transcriptions the researcher would review the accuracy of the transcriptions and correct this where necessary, or adjudicate over areas where the conversation was unclear.

A formal stage was planned where transcribed interviews would be returned to the participants for their approval or correction. *Post hoc* revisions, whilst seeming to offer participants an opportunity for clarification or correction of meaning, can also undermine the historic data that was generated during the interview: revision or reinterpretation is effectively a corruption of what transpired. In the trial study attempts were made to return transcripts on several occasions with limited results (participants did not have access to the original interview tape). Furthermore, as the main issue was veracity, close listening established that the texts were accurate transcriptions. The real concerns for those being interviewed in the trial study were around breaches in confidentiality. Several of the participants made empathic statements such as: "I trust you, so go ahead and use the interview. I don't need to see it. Just make sure any identities are omitted."

Therefore, due to a combination of concerns about data corruption, emergent practical considerations of time involvement, the experience of the trial study where it was found to be unnecessary by participants, this step was omitted. The explanatory note for the main study was then amended accordingly. During the main study, no participant requested subsequent sight of their transcript; they all had the researcher's email address, mobile phone number and Monash University contact details by the time the interview had concluded. As expected, each emphasised the need for careful review and deletion by the researcher of any identifying hospital titles, geographic places or personal names; each expected this to be undertaken by the researcher without their oversight.

Once the data analysis had been completed, interviews and their transcripts would be stored within a secure site at Monash University until the dissertation was successfully submitted. Original taped interviews would then be deleted. De-identified transcripts would be retained for author's use in future research.

Data analysis

The research would employ a thematic analysis technique (Reissman, 2008: 53) and draw on the work of others (Gubrium, 1994, Silverman, 2000, Richardson, 2001, Reissman, 2008) to preserve the narrative dimension to the interview. I planned initially to use the schema developed within the trial study which utilised a simplified version of coding conventions in common usage (Silverman, 2000). Further refinements would be iteratively incorporated. I planned to begin the analysis with the development of an analytic hierarchy or an *abstraction ladder* (Miles and Huberman, 1994: 224). Having prior successful experience of using an established analytic framework (Spencer et al., 2003: 212), I planned to use it this as the basis for the analysis, see Table: 3.1, Analytic Hierarchy.

Seeking applications to wider theory/political strategies	EXPLANATORY ACCOUNTS	Iterative process throughout analysis ↕ assigning data to refined concepts to portray meaning ↕ refining and distilling abstract concepts ↕ assigning data to themes and concepts to portray meaning ↕ assigning meaning ↕ generating themes and concepts
Developing explanations (answering how and why questions)		
Detecting patterns (associative analysis and identification of clustering)		
Establishing typographies		
Identifying elements and dimensions, refining categories, classifying data	DESCRIPTIVE ACCOUNTS	
Summarising or synthesising data		
Sorting data by theme or concept (in cross sectional analysis)		
Labelling or tagging data by concept or theme	DATA MANAGEMENT	
Identifying initial concepts or themes		
RAW DATA		

Table 3.1, Analytic Hierarchy

Data would be reduced through thematic analysis by the creation of shared codes; codes would be structured in a hierarchy of topics to identify major themes. After multiple readings of the data transcripts and potential recoding of data I would develop interpretations of what the data meant and insights would be generated into how these critical events were perceived and understood by participants.

The trial study experience of NVIVO 9 suggested that this software package would be a useful aid for archiving and structuring the data for analysis. In the iterative manner of the trial study I planned to move to and fro between the NVIVO small coded texts and the larger meta-themes suggested by the data. I did not anticipate using it beyond this limited manner (see Chapter 5: Analysis, where this stance was modified).

The first interview was conducted on the 16/01/2012, using the following topic guide (next page). It contained broad themes from the research; it was influenced by the outcomes of the trial study.

Topic Guide for semi-structured interviews:

1. Experience and perceptions:

    a. Narration of events during first C.P.R. attempts.
    b. Feelings of participants during the C.P.R. experience.
    c. Feelings of participants after C.P.R. experience.

2. Preparedness for practice , specifically:

    a. Their procedural skills (cannulation, ventilation, etc.) required for the attempt.
    b. Their knowledge required for the attempt.
    c. Their emotional preparation, i.e. how confident they felt beforehand

3. Support and mentoring:

    a) Any conversations formal (team or mentor debriefing) and informal (friends, colleagues or family) about the attempt.
    b) Actual support available after the event?
    c) Perception of support needs?

4. Self-awareness of effects of experience:

    a. Has C.P.R. changed their views of being a doctor?
    b. Has C.P.R. changed the sort of doctor they would like to become?
    c. Has C.P.R. changed their feelings about being involved in C.P.R. in the future?

5. Any other consequences (direct or indirect) participants are aware of?

6. Anything else that you wish to share with me or feel that I have missed?

7. Demographics:
    a. age
    b. university
    c. sex
    d. years since qualifying
    e. ethnicity:
    f. experience: local or rural
    g. success of resuscitation attempts

8. How could your preparation be improved?

CHAPTER 4: DATA COLLECTION

Recruitment and interviews

This study is based on eighteen interviews, conducted between the 16th January 2012 and the 18th of October 2013. The recruitment process began in late 2011. Unfortunately the project then immediately stalled. It emerged that every hospital had its own Human Ethics Research Committee: before the study could interview any junior doctor, ethics approval would be required form each committee.

Fortunately, in early December 2011, the Junior Doctors Association of Victoria agreed to distribute recruitment notices through their website, thus bypassing hospital channels. From this advertisement the first participant, Marjorie (as discussed already, this is her pseudonym), identified herself via email. The inaugural interview was conducted at her preferred local hospital, in metropolitan Melbourne, on the 16th of January 2012; it lasted 31 minutes.

Marjorie confirmed that, especially in the rural setting, herself and other colleagues could face C.P.R. situations for which they felt ill-prepared, and after which there was limited, if any, professional help to process emotional consequences. This first interview was encouraging, in particular for the rich contextual detail offered. She agreed she would support the research by taking some participant information leaflets to circulate to her friends (the planned recruitment through snowballing).

The chair of MUHREC then intervened with the Monash Health[10] Ethics Committee to question their need for separate application (given a pre-existing bilateral reciprocal research arrangement). Several days after this intervention,

[10] Monash Health – a separate, unrelated health authority - has an intimate and long-standing working relationship with Monash University

the existing arrangement was confirmed; ethics approval to recruit across Monash Health was given.

After a meeting with Monash Health's Director of Education on the 3rd of February 2012, she offered full support for the study. Her secretary distributed the recruitment poster (Appendix 10.1 Recruitment poster C.P.R study) across all their clinical sites using internal hospital staff bulletin boards. Several audiences of junior doctors were then addressed during their scheduled weekly teaching programmes. From these personal appearance and one "snowball" recruitment, nine participants had been interviewed by the first of June 2012. Four of these nine initial interviews were of variable quality. Three, Elizabeth, Franz, and Eugene, were quite short (17 to 21 minutes) and during these interviews the mutual communication had not been relaxed. The interviews felt inspissated and it was telling that closed questions had felt, in general, as productive as open ones. Furthermore, in these nine early interviews, some participants had simply observed (not actively participated in C.P.R. itself).

Of the nine interviews, Henrietta, Samantha and Persephone, were slightly older (30, 33 and 38) than had initially been envisioned; Henrietta and Samantha had graduated approximately 10 years earlier. They had been interviewed as I was, by then, experiencing growing anxieties with recruitment and both these doctors could readily recount their early life. Henrietta in particular was able to recount five separate C.P.R. attempts, only one of which was successful; her interview was particularly rich with personal reflection and was the longest recorded at that time (48 minutes).

Persephone had not yet undertaken C.P.R. and had not even witnessed this as an undergraduate. Although she was aged 38, and had graduated in 2001, she had never participated in C.P.R. as a doctor, nor witnessed it as a student. Whilst as a junior doctor she had initiated Code Blue calls, these patients had never needed C.P.R. before the arrival of the Medical Emergency Team; her present competence came solely from annual refresher courses. Her account

contained important inchoate perspectives on issues that contrasted with the lived experience of other participants, all of whom had first person experience of direct C.P.R. involvement or witness, and who had thus moved beyond their *a priori* theoretical anticipation of reality.

These nine transcripts, obtained by June 2012, verified that the first and second research questions were being fully covered. The experiences narrated varied in depth. Where participants had been directly immersed in C.P.R. the experiences felt more profound and a more complete narrative was generated; where their involvement had been peripheral this was less the case. This initial analysis also confirmed that Symbolic Interactionism was a feasible and useful framework with which to interrogate the accounts. As indicated earlier (page 17), a supplemental question around explication of support needs post C.P.R. organically developed and was incorporated to form the fourth research question. Analysis confirmed that all subsequent interviews were able to address this issue too.

These early interviews confirmed that the question of personal faith or belief system was never explored during the interviews. Though attempts had been made to sensitively discuss this in these early interviews, intuitively at that time it had seemed, at best an unnecessary intrusive, and, at worst a contamination with potential to skew the whole interview. It was felt to be somewhat unnatural and tangential to the main narrative unfolding. Increasingly therefore it became apparent it was unnecessarily insensitive to inquire of this matter as the interviews focussed on the participants' experiences of C.P.R. and not about what they believed about life and death and personal faith. The topic was formally abandoned it altogether as a potential enquiry after interview 4 (Elizabeth).

After 6 months, there was therefore only rich detailed data from five interviews, one of whom (Persephone) had never undertaken or witnessed C.P.R.; the other four interviews were short and rather terse. Persephone's

interview was a fruitful and extended one, both due to the ease of the interaction and the perspectives she offered on never having undertaken C.P.R. By that time the scope of the interviewees had been broadened to specifically include other participants, including several doctors (aged in their early thirties) whose experience had been several years previously, but to whom events had been so important that they had good recall, and were willing to discuss their experience. This move from purposive sampling to convenience sampling was discussed and agreed with my supervisor.

From June 2012 until August 2012, recruitment continued by word of mouth and direct presentations to junior doctors at educational events. I also responded positively to offers of interviews from *ad hoc* encounters with very senior clinical colleagues encountered during academic and clinical work. This extended recruitment practice enabled inclusion of the perspective of a colleague (Chloe, interview 16) who had undertaken C.P.R. in the Indian subcontinent over twenty years earlier. Chloe's language was particularly evocative; she described her resuscitation event and its long term consequences as being "seared into my brain".

Personal work pressures and family member health issues then intervened to halt progress on the doctorate beyond this point, although sporadically, detailed work was undertaken in the cleansing of transcribed interviews (see below). Several further interviews completed the data collection. One senior colleague, Anthony (interview 17 on the 29th of January 2013) was a senior retired doctor (aged 58), who had previously been in charge of an Intensive Care Unit. Over his clinical life (as a junior doctor in renal medicine, as an intensive medicine specialist, and finally as a senior consultant) he had run innumerable arrests. He had valuable perspectives on: intern preparation for C.P.R.; the management of C.P.R. events; and the issues associated with the legal and emotional aftermath of cardiac arrests. As the project concluded five undergraduate medical students self-referred and offered to be interviewed (September to October 2013). As the contributions of undergraduates were not originally intended to be part of the data set, the study has restricted the

inclusion of data to include that of Harriet alone (participant 18). For these interviews, the interviews used the same topic guide.

To ensure heterogeneity, the study sampling should have been purposive: symbolic and representative for characteristics anticipated to be salient (Ritchie et al., 2003a: 79). This would contrast with later analysis, Chapter 5 (Data Analysis), which would treat the participants as a homogeneous group (Kuzel 1999), and in which no attempt would be made to compare or contrast their answers based on their individual characteristics. The participants were doctors (other than Harriet, interview 18), who self-identified as appropriate interviewees. As this data was generated from a mixture of planned and opportunistic interviews (convenience), coverage of key characteristics was fundamentally serendipitous rather than by deliberate design (purposive).

Despite this, see Table 4.1 Participant characteristics, see page 117, the analysis of key participant features confirmed that all anticipated salient perspectives were represented. The study participants comprised a heterogeneous group of individuals (male and female) who: were educated at Melbourne University, Monash University, several medical schools outside the state of Victoria, and internationally; had experienced successful and unsuccessful attempts (both at an undergraduate and junior doctor level); and who had undertaken C.P.R. in a wide variety of venues (teaching hospitals, situated in both major specialised quaternary centres and general tertiary centres). From a geographic perspective, inner and outer metropolitan and rural sites were well represented throughout.

After the interviews concluded, the researcher usually briefly chatted informally with participants. These interactions were, in a minor way, analogous to feminist stance (Olsen, 2000) on qualitative interviewing, where interviewers "must step outside the formal role of neutral asker" (Legard et al., op. cit.) to engage directly with the interviewee in a deliberate and legitimate process of collaboration. These fascinating conversations were never recorded as they

contained a biased and significantly directed intervention in which the interviewer's stance was not neutral.

During these post-interview chats, the researcher became an informed person, interacting with professional colleagues: interactions were more natural and open, in contrast to the disciplined neutrality displayed during the interviews. Usually participants wanted to know what had happened to other doctors and, sometimes, how others dealt with it. Most importantly however, each wanted to know how things would be made better, for those still in training, as a result of their interview. In these conversations there was further affirmation that the participants' motivation was genuine altruism. The discussions were always in broad terms and avoided specifics.

These short unrecorded conversations enabled further development of the researcher's interview technique than the simple conclusion of interview would have done. I thus developed quicker as a qualitative interviewer than if I had remained obstinately impartial and refused to engage in post-interview interactions. And too, I was expected to offer my own opinion post-interview. This had been consistently declined during the recorded interviews, where the researcher avoided agreeing or disagreeing with the subject's positions or perspectives. These off-the-record interactions represented a legitimate reward to the subjects for their time and candour. They enabled me to calibrate of thinking and assisted with the organic structuring of personal perspectives during an early sense making of what their story could represent. They offered an instant critique of the understanding of their position and how this sat with the stories of others.

Interviewing

Prior to each interview, participants were emailed a revised standard briefing, see Chapter 3 (Methodology) to explain the purpose of the research and list its conditions. The interviews lasted between 17 minutes and 1 hour 3 minutes; the average time was 34 minutes. The agreed interview topic guide was used throughout, except in the matter of personal faith exploration (see earlier comment regarding its deletion). This guide was developed with a group of clinical colleagues within the Department of General Practice, Monash University, using a modified Delphi technique, to identify legitimate, professionally valid issues. The creation of a guide often involves potential users (Arthur and Nazroo, 2003:116) of the research. Additionally, for the credibility of the interviewer, they need to ask "questions that are seen as meaningful by the participant" (Legard et al., op. cit.: 143).

As the research progressed that the focus of the interviews was iteratively modified to reflect the understanding gained in previous interviews. For example, whilst later interviews still followed the topic guide for major themes, an emergent question that surfaced during the early interviews, and that flowed from the inquiry of how the participants dealt with their experience, was around their post-event support processes. In early interviews some participants volunteered that, in the aftermath, they had spoken to partners or family members and Henrietta (interview No. 5) specifically commented on this. Her clinical experiences were amongst the most challenging narrated in the study; she had however undergone formal debriefing only once within her hospital career. Therefore, from interview No. 6 Franz onwards, deliberate inquiry was made of formal and informal support processes. This became, as discussed earlier, the fourth research question.

By the last postgraduate interview (Anthony: interview No. 17) there was a sense of repetition. Despite this being the longest interview of the study, and containing several detailed accounts of C.P.R., no fresh insights emerged: the

interview contained rich, contextual shading but served only to confirm the existing insights and did not offer any novel ones. It is possible a larger group of participants may have yielded further significant insights. As the research was not attempting a comparative analysis, it is possible that it did reach a form of *saturation* (Saunders et al., 1997: 338) for the issues under study. Though stories varied with clinical details, similar themes began to be repeated. Using a collegiate approach for the study may have enabled richer data to emerge; this was however beyond the resources of this single researcher.

As planned, each interview was recorded on an Olympus Digital tape recorder (Model DSS) and audio files located in a new sub folder in the digital memory of the device. Each interview had a DSS prefixed code assigned to it automatically. Initial listening calibrated the necessary volume to accurately record the interview, and each interview was then transferred as a separate digital audio-file onto my work laptop as soon as practical after the interview was concluded. By interview No. 3, the complexity of tracking multiple interview tapes became apparent, and the software of the recording device was updated to annotate a time and date component for each interview file.

Data transcription, cleansing and linguistic issues

The first interview was personally transcribed to establish a framework for transcription. This took six hours to complete and by that stage six interviews had been completed. An unsuccessful attempt was made to use a commercial transcription application (Dragon Voice Recognition software). It was realised that I would not have the necessary time for calibration of the software, or the expertise to transcribe the tapes quickly enough personally. With my supervisor's agreement, a Monash University credentialed professional transcription service was then employed.

The first read of the transcription was followed by a data cleaning procedure (Sweeney, 1996), a subjective, interpretative process necessary to make sense of the non-sentence construction and flow of human conversation. Data cleaning enabled subsequent detailed categorisation and modelling, and was further facilitated by additional comments from my research diary. Feld notes were entered contemporaneously into a separate EDD diary spreadsheet, begun on the 24th August 2010. This assisted with calibration and revision of the commercial transcripts, and also for data cleansing, to remove any compromising personal identifiers.

It was a fascinating and challenging process to subsequently interpret the participant's original, often unintelligible, conversational text account into fluent, comprehensible and readable English, whilst preserving its original spoken meaning. It was often necessary to put myself back into the interview setting and hear again the interviewee's voice to make full sense of the continuous, unpunctuated and incoherent written monologues that formed the initial transcriptions. This record of their continuous speech required reading, sifting and elimination of irrelevant data and offered reassurance that active listening had been used in the interviews (Hammersley and Atkinson, 1995). I had usually remained appropriately silent and employed a non-directive approach, unless interviews were particularly turgid. During these difficult interviews a more probing, potentially more interrogative, and less facilitative style was heard. This was probably due personal frustration as the difficult interviews were not generating the anticipated data and so pursuit of needed data slightly overtook intended style.

I had regularly sought clarification and further understanding of comments. I had additionally used an interview technique that I have regularly used professionally of repeating the participants' own words back to them. This practice reinforced their ownership of the interview content and offered them further opportunities to expand on the original answer. Though such *mirroring* technique is frequently ascribed to Carl Rogers (Rogers, 1951), it is open to speculation, how much further back it had been used by others. Erica Goode,

writing in the New York Times (Goode, 2002) cites that Sigmund Freud, writing in 1902, noted:

> "The doctor, like a mirror, should not show anything other than what he is shown".

Having researched varying techniques for transcribing spoken word (Gubrium, 1994, Richardson, 1995, Silverman, 1993, Silverman, 2000, Richardson, 2001) a thematic analysis technique (Reissman, 2008) was selected. The main purpose of the narrative accounts was to understand the meaning that the participants ascribed to their events. The research was not undertaking a detailed linguistic interpretation of their discourse and therefore specialised linguistic techniques, for example discourse analysis (Schiffrin, 1994), were unwarranted. For effective analysis it was necessary for the researcher to remind himself of their words as they were spoken to enable capture of the emotional inferences of their speech and the nuances of symbolic meaning and perspective contained within.

The schema devised for the trial study, which had followed many of the coding conventions of Silverman (op. cit.) was used again. A few unique ones were introduced, to capture, for instance, the differences between the nature and purpose of my own speech when it was interspersed within that of the participant. One particular aspect of editing that was informed by the trial study was the development of a systematic cataloguing method for the other actors in the participants' chosen drama. Other actors became identified as Doctor 1 or Nurse 2. Sometimes it became necessary, for example to enhance clarity, to introduce explanatory terms after the anonymised identity. Examples of this would be Doctor 3 (surgical consultant) or Hospital X (rural hospital). Whilst obscuring the identities of the other actors is important, what became apparent to me was that, by labelling them solely numerically or alphabetically, the narrative sense of the events themselves could become disrupted. This was resolved through the introduction of short explanatory terms placed in brackets

where potential misunderstandings could develop and became a part of the text coding.

Each tape was reviewed, inaccuracies were corrected, and the transcript modified to conform to the requirements of narrative form. An immediate disappointment on the first reading of several of the initial transcripts was the unconscious, limited, use of double questions ("do you think that…and have you ever…") and the frequent use of "OK". Though the use of "OK" can be a sign of a nervous or inexperienced interviewer (Legard et al., op. cit.: 159), this interjection was balanced by many of the participants responding by talking for an extended time. Where within the texts the researcher's speech used paralinguals to facilitate the flow of speech, and that the narrative of the participant was thus essentially unbroken, "umms" and "ahhs" and occasionally "OKs" of the researcher were embedded within the speech record of the participants. This was done in preference to formally splitting the text into separate lines of researcher dialogue through insertion of paralinguals. This enabled the participants' contributions to be read with a more sustained flow of their speech than a strict ping-ping of the contributions participants and researcher would have offered. Facilitation speech is often delivered during the speech of another talker, rather than as turn taking in debating.

The refined transcriptions were then stored in a separate folder and were coded with interview number and date of interview. Much of what passed between interviewer and interviewee could not be captured on the transcribed tapes. Initially, and even within the organic memory of both interviewer and interviewee, it will be understood differently. The transcription is based on an audio tape recording of what was said, yet this cannot capture the complete interaction (for example the visual aspects of the interaction or the emotions experienced by either party). It is then interpreted as a written text and further abstracted into key representative phrases or sentences.

One small regret that of this study is that on several occasions, due to communication failure, it was not possible to arrange interviews with several prospective participants: sometimes it was due to their shift patterns or work locations that rendered them inconvenient; at other times it may simply have been that their interest waned; or that they decided not to discuss the event again and to seek distance from it. After several attempts, further contact was terminated to avoid intrusion or bullying.

Once the tapes had been cleansed of identifying data and the text had been rendered into an intelligible form, data analysis began, see next chapter. The final table presented summarises aspects of the participant including the pseudonyms used in subsequent chapters in discussing their accounts (Table 4.1 Participant characteristics). As discussed earlier pseudonyms were employed to make the subsequent analysis, results and discussion feel more humane and less technical.

Interview	Pseudonym	Age	University Degree	C.P.R. events Post-graduate
1	Marjorie: F	24 years	Monash	2
2	Eric: M	24 years	Monash	3
3	Sebastian: M	27 years	Monash	2
4	Elizabeth: F	24 years	Melbourne	1
5	Henrietta: F	34 years	Monash	Innumerable
6	Franz: M	27 years	Monash	1
7	Eugene: M	26 years	Monash	2
8	Samantha: F	33 years	Adelaide	3
9	Persephone: F	33 years	Melbourne	None
10	Hugh: M	26 years	Monash	3
11	Crispin: M	39 years	Monash	2
12	Shane: M	35 years	Melbourne	3
13	Colin: M	28 years	Melbourne	4
14	Cornelius: M	24 years	Monash	14
15	Diana: F	26 years	Monash	3
16	Chloe: F	42 years	Calcutta	3
17	Anthony: M	58 years	Melbourne	Innumerable
18	Harriet: F	21 years	Monash	1 as Undergrad.
Summary	8 Female 10 Male	<30 years = 12 30 -40 years = 4 >40 years = 2		

Table 4.1, Participant characteristics

CHAPTER 5: CODING AND ANALYSIS

Introduction

The descriptions of the C.P.R. events narrated were extremely varied; though initially difficult to believe, one highly experienced doctor, Persephone (qualified for 10 years), had never witnessed C.P.R., nor had an active role during an arrest. All other medically qualified participants had some direct experience of C.P.R. For some, it was simple and safe supervised praxis, within a large team-based resuscitation, in a major city teaching hospital in Melbourne:

> *I was an intern involved in doing the actual C.P.R. on a patient….the consultant was there and was directing ...I think that would have been the first time I would have done C.P.R.*
>
> (Shane)

For others, it was a rapid immersion in a resuscitation in a remote setting in rural Victoria:

> *It was quite different…in almost every way…at remote hospital overnights, there is just one intern on and that is the only medical staff in the hospital apart…I pulled over the curtains and there's my friend…with the suction out and there's this purpling middle aged man, with just yellow vomit everywhere, all over his face, clothes, the floor.*
>
> (Marjorie)

For Chloe, whose initial medical career was in India, her perspective was of C.P.R. in a "third-world country", where the actual cause of death could easily remain unconfirmed:

> *We did not – again… they do not have a post-mortem exam…so, this again is how a third world country differed in their management.*
>
> (Chloe)

Henrietta and Crispin had significant experiences of many C.P.R. events. The most experienced study participant was undoubtedly Anthony: his responsibilities involved providing almost daily C.P.R. to any of his numerous patients on kidney dialysis. Those particular arrests, being secondary to an elevated blood potassium level, were almost invariably successfully managed, with very good outcomes. He confidently stated:

> *C.P.R. has changed me enormously, because I did a lot of it. That was my job, unlike lots of doctors for whom it was an event.*
>
> (Anthony)

Sometimes their experience was a wholesome one with a successful outcome; some participants could define success as, or at least take pride in, a faultless display of technical prowess where, despite their clinical competence, the patient died. The experience of Henrietta, in the unsuccessful resuscitation of a young girl of 16, was typical:

> *But…we had an effective output, we had reactive pupils…we were doing a really good job, um, and at first we couldn't understand why we lost her, but then once we got the diagnosis from the autopsy…she had HOCM*[11] *…and if it was just an arrest for some other reason, she wouldn't be dead, um… It sounds, it sounds a bit um, egotistical, but…her death had nothing to do with us because what we were doing with our C.P.R. was spot on.*
>
> (Henrietta)

For others their experience was much less positive: *horrifying* (Marjorie), *horrific um…there's no other word to describe it* (Henrietta, of a different arrest), and *scarring* (Chloe) were terms used.

[11] **H**ypertrophic **O**bstructive **C**ardio**M**yopathy

Data reduction

From the individual interviews, the research had accumulated a total participant contact time of 641 minutes: there were 301 pages of text data - approximately 110,000 words. I then performed a two-step, iterative process to reduce the data from being *highly rich in detail, but unwieldy and intertwined in context* (Ritchie et al., 2003b: 220), to a manageable load of fractured data. The first step was to listen deeply to the interviews to identify themes or concepts of particular valence. This was achieved through a prolonged familiarisation with the interview data (each interview was read at least ten times); in effect I learned each individual's unique story.

Data coding

Coding is the first place where the hand of researcher is obviously declared. I have acknowledged earlier, in Chapter 2 (Literature Review) and Chapter 3 (Methodology), how this study directly reflects the influence of the researcher; it is during active coding that the researcher has the authority to make choices. Here conscious decisions are made about the significant parts of the text to abstract from the documented conversation and interactions. The undifferentiated soup of qualitative data may be an "attractive nuisance" (Miles, 1979); it cannot remain so, and hope to offer anything useful beyond narrative regurgitation. The data must be pared down or condensed to essential representative elements. In undertaking the task of "data reduction", a central task of qualitative research (Spencer et al., 2003: 202), I was therefore highly conscious of the mind of the researcher being given unique authority to the significance and noteworthiness of textual comments. When, as in this study, a single researcher reviewed the data, the possibility that this will result in a biased distillation is increased, see Chapter 7 (Discussion).

The first coding action was to highlight significant hard copy texts within printed transcripts. Initially a manual process was used on printed paper of colour

highlighting or *unitising* important text, (Saunders et al., 1997: 480) and annotating it in the margin with a grouping category. Undoubtedly this highlighting could have been done through electronic means but for a short time computer connectivity was limited and *ad hoc* opportunities were used to perform the highlighting. For the first six interviews I experimented with highlighting some text in NVIVO but not consistently. This initial colour paper based highlighting was one of the few pleasures of the research study (colouring in was fun), though this is perhaps an example of the "digital immigrant" (Prensky, 2001) being personally alive and well.

On reviewing the initial data, the full *analytical hierarchy*, outlined in Chapter 3 (Methodology) page 102, was determined to be overly complicated for the level of analysis proposed. As this study was limited, exploratory research accessing the higher levels of the framework from "establishing topographies" to "seeking wider applications to wider theory/political strategies" was unlikely. For the reporting of its findings a descriptive account, not rather an explanatory one would be offered: therefore the study would be based in the lower two sections to generate descriptive categories during substantive, unhurried, and immersive readings.

NVIVO 9, a commercial Computer-Assisted Qualitative Data Analysis Software, had been experimented with in the trial study to determine whether it would aid in the coding process. I was mindful of the dangers of expecting the software to undertake analysis for me (Kelle, 1997). The trial study showed that the most naturally use of NVIVO 9 was for its analytical support (Coffrey and Atkinson, 1996): its organisation, administration and archiving capabilities. As discussed in Chapter 3 (Methodology) and 4 (Data Capture), NVIVO 9 was deployed to facilitate structuring of the data. All interviews were therefore saved as formatted documents in the Internals (a subsection of Sources) folder of NVIVO 9.

After reading the texts, construction began of an electronic skeleton. In using the node function, I experimented with placing subcategories in main nodes, moved nodes around the skeleton and collapsed and expanded the structure. In a recognised process (Strauss and Corbin, 1998), potential categories for the nodes were identified by three different processes:

1. The actual terms or real codes used by the subjects;
2. Existing terms found in the current theory and published literature;
3. Terms that emerged inductively from all the data.

The critical quality of these categories was that they possessed both *internal* and *external* validity (Dey, 1993). They were meaningful in relation to the *internal* dialogue of the subjects; they were meaningful in relation to the *external* question areas I imposed through the semi-structured interview schedule. These categories were then reviewed to determine if they needed subdivision or integration. The details of this are reported in Chapter 6 (Findings).

The naming of the initial *nodes* within the *data tree* was my first creative choice: I used short descriptive terms. A further step was to include, within the node *properties*, an exposition of what the label meant. This enabled nodes to retain their original intent: there was always an opportunity for the interpretation of a label to evolve during indexing of subsequent interviews. Having created a significant number of initially non-competing nodes I occasionally used the node movement function to group nodes into collections of related themes. The use of NVIVO 9 thus enabled a flexible and iterative structure to develop between the researcher and his interpretation(s). The adaptable architecture offered theme identification (using nodes) and coding. It was an effective interface between the inflexible transcribed texts and the original recorded taped interviews.

Following recommended practice (Ritchie et al., 2003b: 224), the first iteration of the Node skeleton or conceptual framework was generated from the three main research questions (1, 2 and 3) and the subsequent organically generated fourth question. A sub-set of six interviews with participants Marjorie, Eric and Sebastian (interviews 1-3), Persephone (no C.P.R.), Chloe (*scarred*) and Anthony (most experienced practitioner/longest interview) were then read and key areas of texts identified through marker pen highlighting; these were then mapped to the skeleton. This confirmed its applicability, and the need for further development. On some occasions the classification of a node was judged to be too broad. To offer greater clarity during the analysis some nodes were divided into sub-nodes. It was then possible to place text directly within the parent node or a sub-node or indeed both where appropriate to do so.

The main Node 1 (Alignment of the participants' expectations with their experience) was subdivided into further nodes of *positive, negative experiences, and effects on affect*. *Positive* and *negative* alignments were further subdivided into *knowledge, skills*, and *responsibility*. *Effect on affect* was subdivided temporally into *pre-, intra,* and *post C.P.R*. Main Node 3 was subdivided from the outset into the three tenets of Symbolic Interactionism. Finally for the draft skeleton the *support* node was subdivided into *feedback* and *emotional* sub nodes.

In undertaking this I followed the guidance of Richards and Richards (1994) who preference *indexing* over *coding,* to recognise the imprecision inherent within the early stages of thematic separation, and to evaluate the likely *fit* of the data with the initial framework. This elementary framework was then used to fracture the data within each interview.

Whilst initially intending use of NVIVO 9 to be limited to preparing the elemental structure, during the indexing, a fuller use of the software increasingly became merited. The nodal evolution was distinctly organic and during this process there was a growing concern that the eighteen interviews were becoming

increasingly unwieldy in their hard copy form. I therefore moved to a more formal inclusion of NVIVO 9 during the analysis phase itself. I used the text insertion from indexed interviews to fill out relevant nodes as opposed to the hard copy coloured text highlighting that had proved adequate for my MBA (2008). All interviews were printed onto hard copy and key sections of texts were highlighted (using coloured marker pens). Each interview was then opened in NVIVO 9 and indexed to the nodal structure, using the annotated hard copy text alongside (to ensure that no key text was missed). I did this because I considered my ability to interpret soft text (computer screen) inferior to interpreting printed copy. Following best practice, *key terms, phrases or expressions...in participants' own language* (Ritchie et al., 2003b: 229) were retained.

Special consideration was given to fragments that seemed important but for which there was no immediately relevant node. On these occasions, in an iterative and adaptive manner, a new node was developed. Whilst indexing located chunks of text within labelled nodes during the analysis phase, within the reporting phase a further decision had to be made about whether to present the nodal data as a discrete entity or whether to collate its content into an overall larger node. As an example, of the two sub-nodes *Rib Cracking* and *TV/Media,* situated within the node *Alignment of the participants' expectations with their experience,* it was decided that node *Rib Cracking* should sit within the overall discussion on *Alignment*, whereas node *TV/Media* merited identification as a separate topic.

Data from unique nodes is not always presented discreetly in the text; the nodes must support the analysis and interpretation of the research. The nodal structure does not dictate the presentation of findings. The analysis therefore varies between showing broad areas, which contains input from several nodes, and strictly bounded nodal content. Each interview (including the initial sub-set of six) was formally indexed in the same sequence as they had been undertaken; the previous trial indexing having been done for the development of a valid node index, rather than to comprehensively individually index those interviews per se.

Not all data produced from the fracturing could be included in the analysis. Like undertaking C.P.R. itself, interview data must be prioritised. A key responsibility of the researcher is to decide which data supports their assertions as they interpret their research; unfortunately all data cannot be accommodated. Comprehensive indexing had two consequences. Firstly it reduced the data to a manageable volume for analysis. Secondly this shrinkage was balanced by the organic growth of the framework itself as it captured experiences or insights not envisaged within the initial conceptual structure.

As the analysis progressed the following Nodes (and Sub-Nodes) added were. The indexing process was therefore organic, responsive and flexible to incorporate emergent concepts. After Shane (interview 12) however, though each subsequent interview added further richness and complexity, the indexing of important text was accommodated with the current structure: thus the final skeleton Table: 5.1, Final Node structure was completed by interview 12. The NVIVO 9 term "Sources" refers to the specific interview that generated the text, "Reference" (Ref.) means a specific text portion. The number of references will therefore always be equal to or exceed the number of sources.

Node	Sub-node	2nd sub-node	Sources	Ref.
emotion			7	10
comfort zone			13	32
slow event processing			2	6
The SEP field			3	5
alignment between their expectations and experience			17	46
	TV or media versions		6	9

	ribs cracking		5	9
	negative alignment		7	9
		procedural skills	3	4
		Knowledge	3	4
		responsibility	5	8
	effects on affect		12	15
		feelings at C.P.R.	12	28
		pre C.P.R. emotions	7	9
		post C.P.R. mood	7	12
		Witnessing distress	8	9
	positive alignment		7	14
		Knowledge	5	6
		procedural skills	6	9
		responsibility	6	8
Support			14	29
	emotional		13	26
	feedback		15	33

location			1	1
	remote		11	16
	City		8	9
patient familiarity			11	24
leadership			14	46
Improvements			11	23
	Deficits in simulation		12	38
	Better preparation		10	13
consequences			13	33
Symbolic Interactionism			16	69
	Professionalism		17	117
		Stoicism	15	44
		Self as clinician	16	61
	Interaction		5	9
	Interpretation and iteration		3	3
	Meanings		4	10

Table 5.1, Final Node Structure

After interview 12 (Shane), no new nodes were generated. This, combined with the decreasing rate of new node generation that immediately preceded it, was potential evidence of attainment of saturation of the research issues through the

interviews. It is inferred that the point of adequacy (Shane's interview) of the nodal skeleton therefore reflects not only the maturity and fitness for purpose of the skeleton itself, but also that, by then, the narrative accounts were generating no novel topics: saturation had therefore taken place with respect to the research issues, all subsequent interviews (13-18) being accommodated with the final nodal structure. Interviews 13-18 added further richness and granularity, but no new themes.

During the initial phase of indexing the indexed text was segmented and limited to a single phrase (perhaps, at most, a sentence). As the analysis progressed, the size of text indexed became larger. This reduction in micro-dissection was a positive choice: it captured complexity and context. One consequence of this larger section indexing was that such sections usually had multiple relevances, and were therefore indexed to multiple nodes. As the analysis progressed, it became rare for a chunk of text to be indexed to a single node.

One particular issue encountered during indexing was how to handle the interview data from Persephone (participant No. 9). Her unique perspectives, an important additional voice, were a counterpoint to the rest of the study participants. It seemed invalid to conflate the study analysis of the experiential accounts (of actual C.P.R.) of the others with her narrative, and so her interview was not indexed using NVIVO9 or included within the nodes of the cohort, but kept it apart and analysed using the traditional hard-copy colour coding technique.

The results of the analysis are presented in the Chapter 6 (Findings).

CHAPTER 6: FINDINGS

Presentation of findings

The analyses of the data are presented in several broad sections.

Section1: documents an initial landscape within which to situate the main research findings and describes the participants' overall experiences in the following sub-categories:

a) common experiences;
b) unfavourable (or negative) experiences and;
c) favourable (or positive) experiences.

This is a broad general discussion that sits before and prepares the landscape for the later sections that answer the specific research questions.

Section 2: documents the differences between the participants' preparation and the reality they experienced, with a particular analysis of contextual or environmental factors that generated unique and unrehearsed "ambient" conditions. This includes their suggestions on what could be reasonably done to improve their preparation. This responds to research questions 1 and 2.

Section 3: analyses the findings with respect to Symbolic Interactionism (S.I.), and contains an emphasis on the participants' conversations with their nascent professional selves, their inner S.I. "Me". This demonstrates how they interpreted and subsequently made sense of their vocational immersion, with a separate section on their witness of clinical leadership within the microcosm of C.P.R. This responds to research question 3.

Section 4: documents the participants' experiences of feedback and emotional support mechanisms, with their reflective comments of what they considered would be beneficial. This responds to research question 4.

Once all interviews had been fully indexed and the nodes populated, it was a relatively simple task to recognise those nodes with a high number of individual contributions, and those nodes with a high numbers of individual contributors. Whilst dominant or "recurrent" themes can assume primacy with the presentation of the data, one of the significant strengths of qualitative research is that all voices are legitimate. Qualitative research does not seek to be statistically probative for it is its "itemised content not the frequencies with which comments occur that matters" (Ritchie et al., 2003b: 244). Research must balance the need to present recurrence - the areas of consensus or common accord - against those insights or counterpoints offered by a lone voice. Therefore, throughout the analysis, the inclusion of outlier voices, an example of which would be Persephone, was an important consideration.

Section 1: Participants' overall experience.

1. Common experiences:

The most shared experience was that participants rarely felt out of their depth. Pre-C.P.R., almost all participants worried that they would be placed in positions of leadership and/or clinical decision-making. However, whether C.P.R. became a positive or negative experience was unrelated to their actual responsibility during the event. The longest they were in the position of true decision-making was briefly at the start of the C.P.R. process, and always there was a more senior person around. Often medical (though not infrequently a senior emergency or intensive care nurse) this person immediately took over management of the patient's airway, and ran the arrest.

> *…quite different in a lot of ways…because the nursing staff… they were fantastic. The nurse in charge knew everything to do, he knew drug doses, he knew when everything had to be given, so that took a lot of the pressure off us (*author insert: she means herself and a junior colleague*)…in terms of actually having to…we did not have to actually be able to think too hard in that situation.*
>
> (Marjorie)

Authority was naturally, and immediately, ceded to this more experienced clinician:

> *...but thankfully the obstetrics registrar on was very senior and took the lead with the neonatal resuscitation whilst the obstetrics resident looked after the mum.*
>
> (Diana)

This authority was maintained by them until even more senior medical staff arrived, usually within 5 to 10 minutes, when further changes to leadership were negotiated.

The hospital's location was most influential at the extent of hands-on experience. If the C.P.R. was undertaken at a major hospital (a city or regional hub location), then there was always a large team of individuals that arrived almost immediately, and the participants would only be there at the start if they themselves had initiated the Code Blue call. Even during the night, at a regional hub, an arrest team of up to ten individuals turned up. The smallest teams (1-5 members) were exclusively in the more remote (rural) locations in regional Australian settings, and this was particularly the case at night:

> *Um…it was in the country… Um and it was just after hours…And… most of the senior doctors had gone home, except for the evening cover registrar who was in the Emergency Department. Um, and ah, so it was myself, and one of the other interns, who first attended.*
>
> (Marjorie)

Some participants reported that this experience of heightened integration into small teams extended down to their undergraduate training:

> *You expect to a bit more hands-on in a country scenario, um, but you know it sort of um, we were sort of still discovering the boundaries of what they were happy to let us do if they thought we were competent.*
>
> (Eric)

The main consequence of location was in the level of involvement within the C.P.R. that occurred. In the larger teams, in major metropolitan hospitals, direct hands-on participation during C.P.R. was much less likely. Participants provided support activities: for example, organising blood tests (see below, Crispin discussing a C.P.R. incident as an intern); speaking to relatives; as opposed to being part of the human chain of C.P.R. and performing chest compressions:

> *So, again, my role was…was mostly getting blood, ABG (arterial blood gas) and um…yeah my role was mostly a clerical role…*
>
> (Crispin)

Within the remote rural setting, several participants did report difficult or challenging events, within small teams. The reason for this was however the intensity of their immersion in the resuscitation, rather than the location per se. It was their proximity to the patient's face (discussed below in the sub-section on adverse experiences) or their proximity to the leader during C.P.R., which mattered; being directed within a small team of two or three clinicians, significantly heightened emotional intimacy. Where their role was simply to be a pair of hands that rotated into the large chain of individuals undertaking chest compressions, they were unlikely to find this challenging, unless other contextual factors made it so.

Hugh discussed his experience of undertaking C.P.R. as a final year undergraduate. He narrates a conversation with fellow students: he was the first student of the group to be actively involved in C.P.R. during their placement in the Emergency Department (ED):

> *The consultants allocate roles and they are very clear on the instructions and if you are not doing the right thing at the very least the nurse who was managing the femoral pulse would have told you: "you were not doing the right thing". So there's plenty of direction…and the responsibility was easily manageable, and by the end of the rotation one of the other students had had a go at C.P.R. and their experience was similar to mine as well.*
>
> (Hugh)

2. Favourable experiences:

The most positive experiences were for those participants who felt safest and most secure throughout, with a real sense that what they did had no adverse effect on outcome:

> *An older lady…a low stake situation…obviously really unwell…the outcome wasn't going to be good…grim situation from the get go… my registrar was there and my registrar was someone who I trusted and who was good at guiding me…I guess a teaching experience as well…the outcome wasn't great…it did take away some of the fear of it a little bit.*
>
> (Samantha)

> *On elderly people…I think that psychologically it is easier to process.*
>
> (Eric)

> *If it's an elderly person with a few comorbidities then already the odds are stacking against them to recover.*
>
> (Sebastian)

The most positive comments made were those who undertook tasks within a heavily bounded set of responsibilities: being part of a chest compression chain, where they were completely supervised; in situations where they had no clinical decision-making; or were limited to administrative responsibilities (writing blood forms, placing an intravenous cannula, phoning the laboratories):

> *The people around you will adjust your role depending on your experience.*
>
> (Cornelius)

> *In my cardiology term…a pretty active role in arrests…a really good learning opportunity...I got to practise…um the protocol for basic life support…to put in an IV line…put in a central line, performed most of the C.P.R…I spoke to her family…then spoke…to my consultant.*
>
> (Cornelius)

> *Ah…one of the more senior residents…said that: "you know, this would probably be a good chance for you to have a go at compressions on a real person" and so I thought: "well OK, That's a good opportunity to get some experience".*
>
> (Diana)

And too, when they undertook these limited tasks, they perceived themselves positively. They felt part of the team (this is discussed in detail in section 3, Symbolic Interactionism):

> *He said you can come over and start some C.P.R. and I remember feeling quite good at that point…doing my turn of C.P.R. for a period of time… I did the majority of the C.P.R. for the rest of the arrest.*
>
> (Crispin)

Within these resuscitations these participants were often given formative feedback on the effectiveness of their chest compressions: the rate of their compressions; and their effectiveness as they inevitably became tired and inefficient. This offered effective on-the-job learning:

One of the senior doctors said, "OK that's very good compressions, you are getting good output there"…told exactly what to do and how to do it and when to stop doing it…made it much easier.

(Eric)

"Sometimes you're like so into it…do not realise it…when the older emergency physicians… said "would you mind just to swap with the other doctor"… you are so absorbed that you do not realise what's happening to you, like you get tired, therefore the depth of the compressions are getting less…that the rhythm is decreasing

(Eugene)

I think the experience is much more valuable, I learnt a lot more in that half an hour um, there then I did with like a lot of the sim sessions that we had.

(Franz)

Calm clinical leadership and a caring demeanour from their superiors (this is also discussed in detail in section 3, Symbolic Interactionism, under leadership), even during otherwise significantly challenging circumstances, was a major factor in making the experience positive. Amongst all participants the general consensus, on undertaking C.P.R. for the first time, was a surprising affirmation that they were doing it correctly, or very nearly, so that, with quite minimal correction, they attained the required standard:

The times that I've done C.P.R., I felt that I knew what I was doing…actually mechanically, the actual external cardiac process…in terms of the skills training, the system we have is good.

(Shane)

Occasionally some (like Eugene mentioned earlier) had to speed up their chest compressions a bit, or to press slightly harder but, fundamentally, they were all reassured about their skill: they could perform effective chest compressions. If anything, the calibration of rate and depth issue was a general resuscitation concern and the responsibility of a specific supervising other (a nurse or doctor dedicated to feeling for a pulse in the leg). This person would make comments

on the effectiveness of all those undertaking compressions; participants were never singled out in the process, but formed part of a general critique of the quality of chest compressions for all the team members.

3. Adverse:

There were a number of main factors that made the overall experience an adverse one. They were:

a. Having a personal identification with the patient. The more the clinician identified with the patient, the more troubling the encounter seemed to be when they died. There were two ways that clinicians regularly identified with their patient.

Firstly, arrests in young patients (individuals who were close to their own stage of life) were challenging. Samantha discussed a failed arrest that involved a young man sent in to emergency:

> *…but he was only about twenty six or so. Young, fit, healthy looking guy…we were working on him… I wasn't having to lead it… working on him for I think a good forty minutes…*
>
> (Samantha)

Secondly they could be involved in the care of the patient, for example, in the case of Shane, where he had cared for a young Motor Vehicle Accident (M.V.A.) victim during the early part of his admission. He was upset when this patient, whilst awaiting transfer to a city hospital, suddenly bled uncontrollably, collapsed and died several hours later:

Shane: He arrested and actually died in ED. I didn't go to that …I thought, well, there's four interns now… But I remember them coming back … Like, I'd spoken to the patient earlier in the day ….I remember that affecting everyone very much. Um….it's …close to our age and something that could happen to anyone, and just so unexpected.

Seamus: So…was there a developing relationship with that person?

Shane: Oh yeah, definitely. Yes, the first thing he said to us…it was, "Do I get a good doc?" ….But I remember….because I saw him before, and then I saw the looks on my friends' faces when they came back.

b. Participants personally blaming themselves or others for the situation and its consequences. Crispin describes a scenario of the fatal collapse of a patient with chest pains, several hours after he had admitted him in the E.D. Due to workload issues, it was a very busy night, and the patient had still not been seen by his supervisor when the man had a cardiac arrest and died:

the wife was there for the whole time I was with the patient, so those two hours, I was you know explaining to her she was sitting by the patient…I had started off being confident he was going to do well…I was with that patient almost for the entire two and a half hour… I had invested quite a lot…and that not long before he arrested my anxieties were increasing that something was not right.

(Crispin)

c. Clinicians feeling overwhelmed by environmental factors that occurred during the arrest. Several recalled vividly the smell of a patient who vomits, the resultant mess forming a challenging clinical environment to work in:

It was quite a messy ah…she had faeculent vomit which had been…there was a lot of smell…faeculent, you know dark faeculent dark vomit…So it was quite you know physically, yeah smelly as well.

(Eric)

and there's this purpling middle aged man, with just yellow vomit everywhere, all over his face, clothes, the floor, emmm…arriving to see C.P.R. being performed was the first shock and the second shock was…it was also pretty grotesque, yellow bright vomit everywhere.

(Marjorie)

d. Physical proximity to the patient at their time of death was highly disturbing; some participants recalled that, to continue to perform C.P.R. compressions, they needed to avoid looking at the patient's face:

That one probably emotionally affected me more…there were three of us just going around in a circle…But I remember as I was doing it I tried not to look at his face because he was just so young it was, yeah, it was pretty awful so he ended up, um, dying.

(Samantha)

This physical closeness (being near to the patient's head) was sometimes accentuated when the patient's conscious level changed during the process: their eyes started to open and they were able to grunt or be responsive during their C.P.R.:

There was an old - elderly gentleman…while we were doing compressions he actually regained consciousness because we were getting a cardiac output while we were doing the compressions. And then - so he was awake for that and you know obviously in distress.

(Sebastian)

e. Finally, witnessing the acute emotional distress of others, which was often confronting. The near distress of others: fellow doctors, nurses, or family members significantly disturbed some participants:

> *The patient's family member was…rubbing his feet desperately…you know trying to stimulate his heart again. I was…feeling really awful…and feeling because well, this person was obviously so distraught and even then it was likely that there was nothing that we could do to help him.*
>
> (Marjorie)

> *..some of the nurses were quite distressed because, obviously a very young boy…I saw one of them crying in the resuscitation… being consoled by the other nurses …she was the one who was managing the airway…I don't know what was going through her mind, and I probably never will know.*
>
> (Hugh)

Section 2: Differences between the participants' preparation and the reality they experienced

This section summarises the major differences between participants' preparation and their clinical reality. It will specifically include the role of media portrayals in shaping their C.P.R. expectations. Finally a summary will be offered of any suggestions that the participants made for improvements. Though initial consideration was given to reporting their suggested improvements within Chapter 7 (Discussion), it seemed more natural for these views to be offered here within the interview data. In the next chapter, the researcher will develop, and incorporate them into this study's recommendations.

1. General comments

The major difference between their simulation (sometimes called SIM.) training and their reality was the lack of true responsibility experienced during C.P.R.

Fundamentally their training had focussed on high drama scenarios that placed them in unrealistic positions of clinical responsibility and decision-making:

> *…in a SIM. session, it's junior directing juniors…You can learn what you should be doing, but…a senior needs to be involved in…in real C.P.R…you've got senior and you've kind of being directed then you kind of learn it a bit better than just like the blind leading the blind in SIM. Sessions.*
>
> (Franz)

Furthermore, the capacity of the simulation environment to prepare them to work in a team environment was perceived as being deficient:

> *I didn't know what it was like to work in a team situation doing an arrest. Because the C.P.R. training and everything that we did was basically you and one other person or you by yourself. So it was kind of weird to…work around so many people and have so many different people saying and doing different things all at the one time.*
>
> (Henrietta)

And too, there was the reality of being in a very crowded work space:

> *Too many people in the room, that's another overwhelming memory… 30 people in a four-bed ward, where there'd be an arrest in one of the quadrants, and the other three quadrants would be full of spectators.*
>
> (Anthony)

It was acknowledged to be difficult to simulate the real time consequences of a cardiac arrest, where seconds count:

Like, it happens so much faster...DRABC[12] *is over in half a minute, literally. The D is almost ignored…and R is sort of given…A is automatically done by someone who reaches for the bag and mask… So it, it's all over before you know it….it almost has to be instinct…you can't learn…unless you've seen it in action…Sim Centre training is good at putting that theory…until you've had the practical experience, you don't realise how to put it in action.*

(Hugh)

Inevitably there was tension, and this tension resulted in terse, focussed communication between team members. This exchange was rarely actually observed to be genuinely bad tempered; however, the urgency of the situation meant that the standard niceties of interpersonal communication were subsumed by the emergency itself and the need for clear instructions. Leaders were usually perceived as not being truly angry, but operating in a highly time-critical environment with no leeway for errors. Inevitably therefore, and in contrast to the simulation centre, some voices rose above the general clamour:

Tension gets fairly high and you know, people yell and you know…push you out of the way…not because they're angry at you, but just because you're in the way…

(Elizabeth)

The contextual experiences of those undertaking resuscitation in adverse clinical settings (vomit, noise, large teams and the potential for resulting chaotic environment) was acknowledged to be difficult to simulate:

And she was blue…literally blue from the chest up…ummmm…which I had never seen before…someone that blue

(Diana)

[12] DRABC or as is frequently subtitled DR ABC is an acronym used to respond to a collapsed patient. D stands for Danger (assessment of this for patient and staff), R stands for Response (assess patient's responsiveness), A stands for airways, B stands for breathing and C stands for circulation/chest compressions).

It was very chaotic…it's a tiny little space…he had 20 people around him and…needles and stuff, sharps everywhere, little ampoules of medication like falling onto the floor.

(Sebastian)

To discover that C.P.R. was tiring was a great surprise, for, despite what they had been told in their simulated training, and being able to ask for relief during chest compressions, their own initial fatigue was marked. And too, severe fatigue was frequently experienced in responding to heavily obese individuals in disadvantageous positions:

Yeah, cause like people always tell that you know C.P.R. is really tiring…And after the first experience, I was like: "shit, it really is very tiring, I'm not going to be able"…And it was a bit of a struggle the first time, one because she was obese, and too, I was a bit unprepared for how difficult it would be.

(Hugh)

One female too found her initial choice of clothing inappropriate for the heavy work of resuscitation as it limited her freedom of movement:

I think having to get up on the bed to do it, being so short, so you know realising that prancing around with you know on high heels and a skirt maybe on days you're on call isn't the most practical things to wear…literally…just the process of having to get up on the bed to do it…

(Samantha)

Perhaps the single biggest difference noted by participants was the violence inherent within the process; perhaps best encapsulated in their experience of "breaking ribs" during C.P.R. This key difference was emphasised by many participants:

….in fact when I was doing…C.P.R., I cracked one rib, but…the tutors in Monash say to you before "better crack a rib then a patient dead".

(Eugene)

This witness to violence was expressed more often by the younger doctors than the older doctors: see below, Sebastian (aged 27):

Sebastian: *Maybe it's the violence of it. …*

Seamus: *Violence, that's a curious word.*

Sebastian: *Well it is…a pretty brutal act. I mean really, you are really pounding away on this person's chest and you know ribs are cracking and you know it doesn't seem like a particularly pleasant sort of thing to inflict on someone…I am sure that's why a lot of people do very shallow compressions to begin with.*

2. Media portrayals

Many of them commented that media portrayals of C.P.R. were often hopelessly optimistic:

But it was quite overwhelming because it's different from…In the movies, it's different from, like my idea of C.P.R. was always just in the movies…you know…where the patient comes back to life and they put a defib (defibrillator) on. But in this case they didn't…they just um did chest compressions …

(Elizabeth)

Yeah, I mean in the movies they sort of sit there…they sort of maintain their fine looks as they're doing. So, but yeah, it was the physicality of actually having to get up on the bed to do it and actually having to exert yourself…

(Samantha)

For those who commented upon this, it was not so much that there were unrealistic public expectations of them, as that their own expectations were set

too high. A key consequence of C.P.R. for many therefore was to temper their initially overly optimistic expectation of C.P.R. with the reality that many individuals who develop a cardiac arrest do not possess hearts *too good to die* (Johnson and Cross, op. cit.). In these individuals, success is much less likely because their arrest is an end-stage consequence: a natural conclusion to life.

And too, media portrayals show a highly organised team which operates in a coordinated fashion: everyone does everything right, instinctively with a practised ease. For participants, their reality is otherwise: unstructured; chaotic; untidy; smelly; uncomfortable; unrehearsed; and many, unrelated clinicians arrive simultaneously:

> *Yeah, just like all these people flapping about going: "has someone touched the blue code…tell me about this patient…what's happened"…and no one sort of seemed initially in the first few seconds to know who was…taking the lead, until maybe the anaesthetics registrar arrived…*
>
> (Diana)

3. Improvements

There was almost universal agreement that the skills and knowledge instilled in the various undergraduate simulation scenarios had served them well. Several of the deficiencies were ones that could not be simulated: they required the reality of clinical C.P.R. These included:

- The depth of compression, where output was measured in terms of a physical pulse wave detected peripherally on the patient; and the varying rate of compressions during extended resuscitation.
- The fatigue from real (and often obese) patients.

A more pertinent learning role that participants considered appropriate was that of being led, by a senior nurse or colleague, where their simulated task was supervised chest compressions alone. Most felt that simulating an arrest where

they were led by a senior colleague, rather than being the blind leading the blind (Franz, page 145), would be much more realistic.

Most participants acknowledged that it would be difficult to simulate the emotional nature of the consequence of failure for the patient, their family and other clinicians. It is also difficult to know how to simulate the fatigability experienced by candidates as for most of them this only took place during genuine C.P.R. Several participants commented upon the almost pristine conditions of their simulated training which contrasted sharply with their experiences of the real active world:

> *I think it would be a very good idea if they put some noise…like for very disturbing noises, like shouting and screaming things like that… for the simulation centres.*
>
> (Eugene)

Three additional suggestions for improvement were:

- to calibrate their expectations of success to be more realistic.
- to enhance their preparation with accounts of some of the individual variations, through the recounting of actual "war stories".
- to offer "hands-on" lived experience in real-life arrests (e.g. performing compressions under high levels of expert supervision).

Section 3: Specifically report any finding against the sociological framework of Symbolic Interactionism

Symbolic interactionism (S.I.) is a sociological framework that offers a looking glass (or self-on-self) perspective (Charon, 2010). Generated from a subjective reality, it operates at the level of personal interpretation. Evidence of S.I. is uncovered when individuals narrate: how they locate themselves sociologically

within a particular environment; how they interpret and make sense of the behaviours of others; and illustrate how they perceive themselves relating to these others.

For Symbolic Interactionism the human condition is therefore a constant search for consistent and reliable meaning, for "as human beings we act singly, collectively, and societally on the basis of the meanings that things have for us" (Blumer, 1969: 132). Meaning is continually negotiated and or renegotiated with others: one's inner other or self (in the form of, thoughts, insights, or reflections); and external others (the outer world of human interaction). Whilst such meaning is never fixed, it is expected to be stable to enable it to become trustworthy.

This analysis will critique the statements of the participants to determine occasions when, during C.P.R., they sought or negotiated sociological meaning and reference these against the framework of S.I. This moves the study beyond the descriptive accounts (in sections 1 and 2) to a more abstract conceptualisation of the research data. During the indexing for section 3, I consciously undertook an abstract categorisation (Ritchie et al., 2003b: 243). However as this data is limited to eighteen interviews (and a single interpreter), the abstract conceptualisations presented here would be best thought of as modest speculations, inadequate for the development of typographies or the deeper analyses necessary for formal theories (ibid: 248).

As stated earlier, the material to be presented here is from *implicit* and *explicit* accounts. To reiterate, implicit accounts are those critiqued through analysis or interpretation by the researcher, whereas explicit accounts are those generated from face value comments by the participant (ibid: 253). An implicit account therefore was where the researcher determined that observations were being sociologically interpreted by the participant (often when the actions of others were being explicitly valued). In contrast, explicit accounts mostly occurred during internal conversations within the participant's consciousness, when, for

example, they said: *I thought this* or *I said to myself*. The implicit accounts have mostly been presented against tenets I and II, and the explicit account have mostly been presented against tenet III.

Tenet I: *Humans act toward things on the basis of the meanings that the things have for them*.

The young doctors understood that undertaking C.P.R. was to be one of the major clinical challenges in their early professional life. From their detailed scenario rehearsal, and dramatically reinforced with media portrayals, they had anticipated not only performing chest compressions, but also managing a patient's airway and making leadership decisions, and too, that the patient would live. Some, like Shane, reported that they were genuinely terrified by this prospect and therefore they decided to adopt a role of researching the patient's notes:

> *Shane: Well, prior to the time that I first did the C.P.R…very much less involved…I'm the one with the file…So, that was not without any pressure at all, but definitely not the same amount of pressure that…*
>
> *Seamus: …is that a reporting pressure?*
>
> *Shane: Yes, so it's night and I'm in the dark and knowing nothing about the patient… about the history…*
>
> *Seamus: So how did that make you feel?*
>
> *Shane: Those were, they were pretty scary, the first, because it was the first night and it was within a couple of hours of me starting the job.*

Others placed intravenous cannulae or took part in a distant manner until they were confident to become part of the chest compression team:

> *I suppose as an intern I always assumed that it would not be me. I hoped that it wouldn't be me. So I always sort of did stand back a little… to try and avoid that…and just really, really hope that a more senior person would be along very, very quickly and be in charge themselves.*
>
> (Diana)

A further example of what might be termed *bounded participation* behaviour emerged anecdotally in a recent informal conversation on this research with a respected colleague (March 2015). She informed me: *I always ran a little slower than the others to the arrest and prayed that the on-call registrar would get to the arrest first.*

For some, their inclusion in the human chain providing chest compressions was the response to a direct invitation to become involved by a clinical superior, rather than something that they self-presented for. For many clinicians, once they had been part of C.P.R. several times, it was demystified: they had performed it, and through hands-on experience were reassured of the effectiveness of their technique. And too, with the calibration of previous unrealistic expectations against their clinical reality, much of their fear evaporated; they were now sanguine about the outcome:

> *In…resuscitation…doing…C.P.R. and you fail to save them…it really, really hits you that you can't save everyone…you know as doctors we're not gods and can't, we can't do the impossible… participating in resuscitations has taught me…there really are things where you can't do anything about.*
>
> (Hugh)

As their internship progressed, although C.P.R. would retain its dramatic intensity, its dominance was balanced by other clinical experiences: the death of patients would be experienced by all doctors before the end of their intern year, in contrast to their undergraduate preparation, where it is known that students rarely encounter death (Kelly and Nisker, 2010):

Yeah. Well, I think that was actually the first time I saw a dead person; not a cadaver, like a dead person.

(Harriet: final year medical student, after a poor outcome C.P.R.)

There was an understanding that C.P.R. was part of the transition from a novice physician into an experienced and competent practitioner. Several participants described going through C.P.R. in terms redolent of a clinical rite of passage. Successful C.P.R. therefore seemed to have significant personal valence; it was evidence of fitness to be a member of a select club. It was viewed as an ultimate test; by holding their nerve and doing C.P.R. properly they reassured themselves that they were clinically trustworthy. C.P.R. was therefore an inevitable and unnerving challenge that participants knew they would encounter, yet none were certain how they would meet it:

It still sticks in my mind, nine years ago…"so still pretty fresh, yeah"…I handled it and ***I did not fall apart*** (author's emphasis)

(Samantha)

The account of Persephone is particularly relevant. She discussed how she felt about never having to undertake C.P.R. She was disappointed not to have participated in the formal management of a cardiac arrest and, for her perhaps, one personal metric of clinical competence remains unmeasured: she has not been tested:

Interviewer: *Without being cruel about it, it almost sounds like you were disappointed not to have to do your resuscitation….in some way.*

Persephone: *Well…at the City Hospital 3, yes I was.*

Sometimes participants reported that they could become genuinely bewildered by their own emotions. When meaning was illusive, it was perplexing and confounding. When they were unsure of their role, or did not know the patient

or their fellow team members (often simply providing chest compressions) then their immediate reality could be experienced as surreal (Franz, Samantha and Shane). Their surreality was noted to be different from either of the contrasting emotional states (a calm demeanour that implied a controlled management of inner self or tearful distress) they witnessed in clinical colleagues (see below tenet III) when they strove to uncover the implicit expectations of affect during, and after, C.P.R.

During this surreality they were less connected with their surroundings. Samantha noted that she was "like being…if you like, in a vortex", and that the time "flew" and she had been "in a different world". Henrietta has a described how she learned to place her mind elsewhere during any arrest:

> *I pretty much blocked it out while I was actually doing the C.P.R.…I concentrated on the technical and scientific side of things and didn't think about who the patient was…but then afterwards would be when the emotional side of things would kick in….I was able to put my brain into just you know C.P.R. mode.*
>
> (Henrietta)

Tenet II: *The meaning of such things is derived from, or arises out of, the social interaction that one has with one's fellows.*

For many, an implicit theme was their witness of the professionalism of doctors and nurses during C.P.R. This was exemplified in two distinct ways. Firstly, it was in the conduct of the team leaders, especially when they exhibited a calm and respectful demeanour:

> *But the interesting thing that I remember is, the consultant was very calm and collected, and was basically saying, "Okay, what do we do now?"*
>
> (Shane)

Many narrated, in glowing terms, their experience of leadership they witnessed. Henrietta related her experience during a large scale debriefing, when staff discussed the conduct of the registrar leading the arrest:

> *"and we were able to say: "you know Dr Registrar did a really good job at this and he, you know, he did this…we were really impressed when he did this"*
>
> (Henrietta)

It was not merely the technical correctness of clinical conduct and decisions, but, perhaps more importantly, how they treated colleagues and the patient's relatives. Meaning came from the personal conduct of other clinicians, mainly doctors, and the attitudes they did, or did not, exhibit: in effect how they managed and displayed their personal selves:

> *"I remember feeling…those people know what they're doing…you know partially grateful but partially a bit of awe and thinking "you know I hope one day I'll get to that stage where I'll be, you know, cool enough to handle this" .*
>
> (Samantha)

> *"But you know just the way that they gently handled the situation, they were very respectful…I think all those things were very admirable and I'd certainly like to have… that ability um as a doctor."*
>
> (Sebastian)

Sometimes what they experienced, like Franz observing a patient having their chest cavity opened and the physical massage of their heart, was so shocking that their emotional processing of it seemed to lag behind their actual experience:

Franz: *C.P.R. was started and then it actually ended um, doing, um, she ended up getting her chest cracked on the ward and then…*

Interviewer: *So her chest opened?*

Franz: *yeah, yeah, cardiac massage on the ward, um, and I think this is **quite extreme** (author's emphasis)*

Furthermore, the capacity to work on after the event (see Tenet III below) was witnessed as the mature behaviour of an experienced clinician. As participants were processing what had happened (especially after an unsuccessful C.P.R.) there were two distinct examples around them. Some clinicians (only occasionally was this a doctor) became emotionally upset or cried. Almost always however, doctors got on with the next task in hand; usually the care of a different patient. Only, on rare occasions, was there any pause for immediate reflection or discussion by the more experienced staff member; if it occurred however, it was invariably in support of junior colleagues. Senior colleagues usually carried on as if they were unaffected:

> *I was pretty okay…it never ceases to amaze me…how after something like potentially traumatic and something quite significant like that such as somebody's death, immediately after, everyone goes back to work…..So within five minutes of performing C.P.R. on someone who has just died you are just talking about some routine medications and things like that… I don't know if it's, you're expected, but I think we expect of ourselves…to go back to work and continue the day's work.*
>
> (Eric)

From an S.I. perspective, the junior doctors here took their cue from seniors. They continually read others to make sense of what had happened, and to discern what was then expected: they were learning and trying to assume the behaviours and attitudes of those they sought to model themselves upon, and perhaps sought acceptance by. Therefore, when they are offered examples of conduct post-C.P.R. that espoused personal resilience and insulation, then that was what they would identify as being worthy of replication. It seemed that they felt that when they could display this attitude effectively, they felt they

would send signals that they are ready to be a member of their aspirant social group: competent doctors. Thus, it was OK for nurses to cry, but implicitly not for doctors (see tenet III below).

Another form of meaning came from attempted entry into the professional club of clinicians through speech acts during C.P.R. Within the close resuscitation environment, there was use of *dark humour*, a special form of language that belied the seriousness of the clinical reality:

> *I do remember that usually, the response of all of us in this situation was - someone would make some smart crack…black humour. No one would ever say, you know, Anthony, you've sort of cocked up again…it was always about, you know: "Hope you weren't having dinner".*
>
> (Anthony)

Like many forms of specialised communication, knowledge of this secret language, and its easy use, evidenced membership of the club. The ability to walk the fine line between inappropriate and appropriate interpretations demonstrated stable, reliable and shared understanding.

Tenet III: *These meanings are handled in, and modified through, an interpretative process used by the person in dealing with the things he encounters.*

This section will analyse how participants, often using their thoughts to document it, made sense of their experience with respect to their emergence as a clinician and what it meant to be a doctor. The expectations of being a doctor are made clear through the meanings generated or confirmed through their observations and their subsequent interpretations of the conduct of more senior clinicians. Some of this naturally developed from the public face of professionalism discussed in tenet II. However, here professionalism will be understood in a different way to that used by peak bodies when they set

standards of medical conduct, for participants' discussions here referred to choices of a clinical mindset that were made in their journey to become a doctor: in many ways they had witnessed and were assimilating medicine's "hidden curriculum" (Hafferty and Franks, 1994, Passi et al., 2010). It is that dimension identified earlier by the meta-review on professionalism (Wilkinson et al, 2009): the clinician's ability to be resilient and to balance the effects of being a caring doctor against the costs to their own emotional wellbeing.

For Crispin in particular, the events he experienced over fourteen years earlier became truly seminal in his development:

> *When people asked me: "you know what's it like being a doctor?" ...and you know it must be hard"…and I go: "yeah, there's been a few hard times" and I tell them this particular story and "it was quite upsetting at the time…you know"...So they would say: "that sounds quite a, quite an experience for you".*
>
> (Crispin)

One particular transition concept they evoked was that of an inner strength: an ability to withstand being part of acute medical emergencies and survive emotionally intact. A variety of emotions were experienced as they attempted to navigate this space. Some young doctors actively practised suppressing their emotions:

> *Emotionally um?...you try to be strong emotionally...right…you're not let yourself become affected emotionally…like if you let yourself out get affected emotionally you will not do your proper job…I think I was okay.*
>
> (Eugene)

> *I mean I guess you sort of suppress any emotion and focus on what you are doing…quite difficult…you have to try and look competent and even though inside you are not really feeling like you have any idea what you are doing.*
>
> (Marjorie)

Even Harriet, who was still a medical student in final year, could experience this form of thinking:

> *I think I was just trying to detach myself from the fact that she was a real person. I was just trying to focus on doing the compressions as well as I could.*
>
> (Harriet)

Other participants experienced powerful and different emotions. Some were genuinely saddened at what had happened (see previously in section 1). Others were in a high energy state responding to the situation. "Absolutely adrenaline pumping", was Sebastian's memory, whilst some described the event as being *exciting*. However, as they spoke these words, participants seemed uncertain whether this was a wholesome emotion (or perhaps even one they should admit to their inner selves). From an S.I. perspective, their "I" was reflecting on their "Me", and speculating if all was well with their developing self:

> *it was very exciting um…I really enjoy that kind of high pressure kind of um, moment, So actually it was quite exciting for me, very eye opening, it was the first time I had to do C.P.R…*
>
> (Franz)

> *I know it's quite morbid, but actually quite enjoyed it.*
>
> (Franz)

> *I felt a little excited as well but that sort of wore off as soon…as I calmed down. And then we sort of just went on with our jobs.*
>
> (Hugh)

Some, from their own somewhat detached or surreal perspective, had witnessed the distress of others and wondered whether they, as human beings, were reacting appropriately:

Because…like I didn't cry and I wasn't emotionally ridden…And I think back and I thought mmm….last time that I was in that resuscitation I didn't cry either. I wonder if it's something wrong with me…my character...or…because…we're trained to deal with these things subconsciously. I don't know…

(Eugene)

I can understand a person reacting like that…but I just sort of thought: "there has to be an element of disconnect that we try to develop as health professionals…even though we are still human, and of course we are going to feel sad if someone dies.

(Diana)

Young doctors therefore sought meaning in variety of ways and variously interpreted their interactions with others as part of their calibration process in their move from nascent professional to a fully-fledged one. There was no single or predictable emotional response as the ambient conditions of the arrest, their own prior or immediate intimacy with the patient or the arrest leader, and the emotional resilience of others engaged in the arrest or witnessing the death of their loved ones, evoked a wide variety of emotional responses that ranged from positively or negatively heightened ones to a form of surreality that none expected.

Section 4: The participants' experiences of feedback and emotional support mechanisms, with comment of what would have been beneficial

For almost all participants, their C.P.R. events were rarely subjected to any formal clinical review process, where others might offer different interpretations of the experience. It was thus highly unusual for the resultant learning and emotions experienced by young clinicians to be subject to the gaze and interpretation of a more experienced doctor. Most commonly this task fell to close family members, immediate work colleagues, or intimate partners (who may or may not have been medically qualified).

In terms of a formal conversation with someone more experienced, several did narrate one-off events, where a senior clinician offered one to one discussion with junior staff. For Crispin, this was immediately after the unsuccessful resuscitation and he interpreted this as more of an information gathering (and risk minimisation step for the hospital department in question) than representing genuine interest in him as an individual:

> *He sat me down. But I can't remember whether he, a sense of what that was for and my idea at the time was him wanting to find out what happened medically to the patient.*
>
> (Crispin)

Within the research there were only two accounts of a formal debriefing. One was offered to Henrietta dealing with the death of the young person who had H.O.C.M., and had died despite a huge effort by many staff; Henrietta had very many arrests, but only one debrief. This large scale debrief was almost at a community of practice level, was conducted by the hospital's highly regarded grief counsellor, and was viewed as offering both clinical closure and emotional support. The other debriefing discussed was that after the paediatric resuscitation undertaken by Diana. This was exclusively a technical exercise, undertaken as an audit or clinical review. She described it as being highly "accusatory"; it was little more than "just finger pointing meetings". She witnessed an ill-tempered blame game session between the different disciplines involved in the care of the pregnant mother who had given birth to the severely asphyxiated neonate (the infant had subsequently died several days later).

Hugh discussed the missed opportunity for debriefing and feedback when he had attended an arrest as a medical student. He had accompanied an elderly female patient (who had not returned to a regular heart rhythm after multiple defibrillation shocks) into a further assessment unit, where she was not offered further support and her C.P.R. was ceased. He reported this decision and outcome to his consultant on return to the E.D.:

> *"What was the outcome?" and I told her the discussion that they had with the consultant and the decision not to operate. And she was like, "mm, yeah, given her condition her prognosis wouldn't have been very good anyway", and then the conversation just sort of trailed off.*
>
> (Hugh)

Therefore, it is completely incumbent upon the young student or doctor to make their needs known to the more senior or experienced member of staff. Where others reported impromptu debriefing or feedback, this took place in the context of one of the parties presenting as being emotionally upset. Sometimes, if like Chloe (after her "scarring" resuscitation) or Crispin (described above), they demonstrated significant emotional upset, then a senior colleague would spend time with them, and usually their shift was then terminated:

> *After the unsuccessful arrest…Eventually the admitting officer did take me into an office or a room and sat me down …I remember sort of leaving there and basically being told "um, it's probably best you go home".*
>
> (Crispin)

Several of the more senior doctors interviewed narrated situations when they were the ones offering emotional support to junior colleagues. This was however an *ad hoc* behaviour, invariably triggered by someone's visible distress or shock. For many, as they reflected upon and dealt with their conduct after the event, their most pressing need was for emotional support rather than a clinical debrief. Most commonly when individuals were emotionally affected, the event was discussed afterwards with someone close to them, who could be clinical or non-clinical. For Eric, this individual was his own mother. To him, the presumptive status of a coping clinician was reinforced when his supervisor asked: "are you OK?" Eric judged that the expected reply was "yes", and that to offer a comment otherwise would have meant self-identification that he was not. By implication, this would mean he was not ready to join the clinical competence club. For many others the person trusted with this confidence was an immediate work colleague. Sometimes this individual was supportive, but on at least one occasion the response was less than sympathetic and, if anything,

served to enhance the junior doctor's unhappiness rather than lessen it, with lasting effects:

> *I think I didn't really tell anybody about it for probably years later…after that kind of comment by my friend of "going home with your tail between your legs"…*
>
> (Crispin)

For participants the feedback and support that they sought fell into three broad groups:

Technical feedback: which related to their own performance (compressions or airways management) during the C.P.R. itself or, where relevant, sensitive handling of any contribution their care prior to the arrest had made the arrest occurring. This would answer the question: *what should I have done differently*?

> *Like if I did any C.P.R., like the leader was "experience, what was good, quite good, what went bad and now we have to learn from all the mistakes", because if we'd keep doing, if I wanted to go for another C.P.R., any code blue, I would not know what I did wrong before…I think it's a very, very good idea have a formal debrief after*
>
> (Eugene)

> *I feel that, as a medical student the experience of doing C.P.R. is very important…I mean we practise on the mannequins but it's never a true representation of the real life and I finally realised how truly tiring C.P.R. is as well, because she was quite a heavy set lady…um…I guess a brief, a brief talk of the concerns just to let you know that "you did the right thing" and you know: "you did well in that resuscitation"…um would have been nice, but then again, my…like…I didn't have any feelings of…like… I didn't have any particular concerns.*
>
> (Hugh)

Contextual feedback: which related to the unique clinical features of their particular case, was acknowledged to be rare. It was uncommon for junior

doctors (there is only one other example of awareness of diagnosis: Samantha) to discover that, like Henrietta, the young person whose arrest she had been involved in also had H.O.C.M.:

> *…but I never heard the outcome. Um, just one of these things if you don't actively chase it up you will never hear the result.*
>
> (Hugh)

Emotional support: which related to their immediate and deferred needs post C.P.R. Most participants felt that they were coping, and that their existing networks were adequate to the task. However, when pressed, they considered that an appropriate response would be a genuine and non-presumptive inquiry of whether they needed support or not:

> *Doctors don't self-report well, do they? I mean, we know that doctors say: "I'm fine"…and we know that sometimes we're not.*
>
> (Anthony)

> *I think they (young doctors) need to be much better prepared for even who to contact if they feel that they need emotional support.*
>
> (Henrietta)

As Crispin noted, "people are very vulnerable during an arrest", and off-hand comments during the arrest such as: "why wasn't this patient transferred earlier?" can have a lasting effect on the doctor concerned. The choice therefore of an appropriate individual to undertake such a sensitive task was a further issue. It was acknowledged that the behaviour of the immediate superior during the arrest could have been a significant negative part of their suitability. Diana, who had the very testing neonatal resuscitation, would have anticipated major difficulties with her on-call consultant undertaking this:

I almost didn't really want to debrief with that particular consultant…maybe he felt…that I didn't get the message across quickly enough…So I did not know how useful it would be to debrief with him.

(Diana)

Summary

This research has offered witness to the experiences of young doctors as they engaged in Cardiopulmonary Resuscitation (C.P.R.). This study engaged 18 participants, from an undergraduate student at one extreme, through a range of practising clinicians of varying levels of vocational maturity, to, at the other extreme, a clinician who had retired after a long, illustrious career managing cardiac arrests. Through their narratives, their interviews have offered a first glimpse of how doctors, on an individual level, processed experience. It has recognised the significance of the experience to these doctors, how they felt at the time, how they reflected on and then understood it afterwards.

It has added to the existing research on doctors which has been until now of a questionnaire basis. Chapter 7 (Discussion) will link the findings from the research to the existing knowledge base and to explore where tentative extensions of current understanding may be suggested. It links this research principally, but not exclusively, to the significant recent qualitative study from a medium sized Australian tertiary teaching hospital (Ranse and Arbon, 2008: op. cit.) as this research has important resonances with that paper, in addition to offering several modest extensions of it. Other quantitative literature is compared where themes identified have been mentioned earlier. It will align the accounts to the chosen experiential learning theories of Peter Jarvis (op cit: 59) and the emerging important concepts of emotional indebtedness (Simon, 2016) and tie these to the development of professionalism (Wilkinson et al, 2009)

CHAPTER 7: DISCUSSION

In Chapter 1 (Introduction), the justification for this research was to research the acknowledged pre-vocational anxieties of young clinicians (Casey, 1983, Casey, 1984, Duns et al., 2008, Menezes and Morgan, 2008, Morgan and Westmoreland, 2002, Myint et al., 2010), in performing CardioPulmonary Resuscitation (C.P.R.). The study focussed on their transition phase (Barnsley et al., 2004) from students to practitioners. The heightened responsibilities they experienced by novice clinicians at C.P.R., were illustrated by one emotional narrative:

> *Yeah, you are the patient's last chance, yeah. And I am afraid of making a mistake then if a complication arises.*
>
> (Elizabeth)

No previous study had used one-to-one interviews to document junior doctors' lived experiences, nor tried to qualify the alignment between their expectations and workplace reality, with particular reference to their preparation. To reiterate, the study was developed as research questions 1 (the alignment) and 2 (potential enhancements to preparation), denoted in earlier chapters. To interrogate the subjective meaning of the interpersonal interactions during C.P.R. a critique, Symbolic Interactionism, a sociological framework, was applied (research question 3). Research question 4 (participants' support needs) was organically generated around the explication of participant support needs.

As discussed earlier in the introduction chapter whilst negative experiences may contribute to adverse consequences on an individual's professional trajectory, this study was bounded to generate primary empirical data specifically with respect to C.P.R. experience. It was not designed to explore substantially the consequences for them of such experience, though some speculation on this will be offered further in this chapter.

The analysis of the study has been presented in the Chapter 6 (Findings). This chapter will now discuss the significance of these results in three broad sections. Section 1 will contain seven separate topics (1-7). Each topic will be presented as a general **Discussion**, which will be followed by a **Finding**, and then will conclude with an **Implication**. The findings and implications will be tentative assertions; they will offer *modest extrapolations* (Patton, 2002), given the limitations that section 2 will outline.

Topics 1-5 will relate to C.P.R. participants' clinical experience and the effectiveness of their training. Topic 6 will relate to the methodological findings of the study: the effectiveness of one-to-one interviewing as a technique, and will contain a critique of using Symbolic Interactionism as a framework within which to analyse and interpret social actions. Topic 7 will focus on leadership during C.P.R. and the development of a clinical identity that copes with clinical responsibility, the *Stoic Me*. This topic will specifically align with the selected learning theory (Jarvis et al., op. cit.) identified in Chapter 2 (Literature Review). The revised model of the processes of learning is displayed again below. In these discussions the learning theory (Jarvis), sociological framework (Symbolic Interactionism), concepts of emotional indebtedness, and professionalism (as it pertains to the balance between care of self and care for others) will be included as relevant.

In this study, the participants' proto self that engaged with C.P.R. was a self that emerged from their undergraduate education. This self had pre-existing constructs about how it would encounter the world: a learned version of the world, containing its *a priori* assumptions, and how it, and the world, should behave towards each other. Symbolic Interactionism captured the communicative and interpretation processes through which the participants' personal meaning was perceived and understood: it interrogated the social interactions that were the basis for their sense making of the world. Did the world initially conform to their expectations; and, if so, what signals have transmitted this meaning? Was the world other than they expected; and if so, what signals indicated that their version was untrustworthy? In topic 7, the

discussion will identify several occasions where there were signals that pushed participants into a phase of cognitive dissonance with opportunities for further reflection, practise or experimentation. Sometimes they reinforced their status quo, sometimes they embraced a new reality.

Section 1 (see below) will relate this study to what is known or understood about this subject (that which already exists). In broad terms it will report progress towards its broad purpose: furthering an understanding of the C.P.R. experience(s) of young medical undergraduates and as a result improving their pre-vocational preparation. It will connect with the established body of public understanding on this matter, and acknowledge any accommodations the study has made in its conduct. Principally, this discussion will be against the study of Ranse and Arbon (2008, op. cit.) who explored, using focus groups, the experiences of two sets of three young nurses, who had initiated a C.P.R. emergency call. An earlier qualitative study (Page and Meerabeau, op. cit.) of cardiac care nurses will also be mentioned.

In both these qualitative studies however, there were axiological issues that immediately differentiate them from this research. Ranse freely admitted his formal relationship as a resuscitation team leader where the research took place and acknowledged this could influence their data. Page was the interviewer and identified herself as the coach/mentor to the staff members interviewed. One importance difference here is that this researcher had no relationship with, nor point of leverage over, the participants.

Additionally, however, as this study was generated from 18 face-to-face interviews, unique insights and understandings (unanticipated in the original study aims) were generated from the interpersonal and collaborative relationships between the researchers and the co-participants. It has offered new interpretations or insights (that which is novel). In this study, the potentially formative effects of the personal witness of C.P.R. event leadership (especially role modelling) and the conditioning of a personal clinical self (which

herein has been termed the "*stoic me"*), emerged as areas where the participants' stories opened up potentially new rich insight that had not been reported.

This study has incorporated reciprocity: it has emphasised the mutual respectful and collaborative approach advocated by many feminist philosophers (Smith, 1974, Hartstock, 1983), who see their participants as co-collaborators with equal agency. There is no single feminist orthodoxy, for, to invoke such a claim, would rest entirely "on which authors one takes as examples" (Ramazanoglu, 1992). Mindful of this qualification, this research has aligned itself with the broad position taken by Oakley (1981, op. cit.) who conducted her research from an initially distant stance but who later adapted it to respond to emergent needs that developed from the relationships she established. In line with this, the limited previous understanding of the support needs of vulnerable individuals post C.P.R., has been explicated and qualified in some detail.

One major difficulty encountered in describing the experiences of young medical undergraduates in undertaking C.P.R. is that they were highly variable: participants discussed significantly positive events, significantly negative events, and events that were "surreal" (where they experienced social dissociation). This finding of a very positive emotional experience is unusual. It is not frequently or extensively detailed elsewhere in the literature, except to relate it satisfaction of technical competence. The previous emotional evidence is predominantly on the negative effects of C.P.R. (Pups et al., 1997, Laws, 2001, Myint et al., 2010)). These emotional reactions will be Topic 4 for discussion.

Three further sections complete this chapter. Section 3 will outline potential limitations of this research: any issue within the study that could adversely affect its generalisability or broader utility. Finally, section 4 offers a selection of the future directions for potential C.P.R. research, which minimally should confirm, challenge or qualify this study.

Section 1: Findings viz.a.viz study aims

Topic 1: Technical competence in performing C.P.R.

Discussion: Despite the diverse narratives, participants offered common themes. All novice respondents identified pre-existing concerns over their technical competence; all reported that during actual cardiac arrests they were given feedback that they were providing effective chest compressions. Anxieties they had in undertaking chest compressions quickly vanished when they had an opportunity to do so, under supervision, during actual resuscitation. Inclusion in the team was competently and safely undertaken, whether they were an undergraduate student or a doctor. During such deep immersions, participants rarely felt out of their depth; most experienced significantly improvement in self-confidence. In contrast to pre hoc anxiety levels, their significant concerns were unjustified and largely unfounded.

One notable variation, during metropolitan area arrests, was the remit of the junior doctor. The impetus to include them as participants in C.P.R., often came from more senior colleagues, who purposefully included young clinicians. Whilst some juniors were deliberately introduced, others, unless they self-identified as being competent (they had to step up to undertake chest compressions), were perceived as being less experienced staff members. They were therefore given (or self-selected), indirect clinical or administrative tasks. Opportunities were sporadic for their direct inclusion in the chest compression chain.

Finding: Newly graduated doctors in this study performed chest compressions effectively at their first attempt on a real patient; they were effective when they undertook this as an unqualified final year student. Their undergraduate preparation is effective, regardless of where they are trained. However, within clinical life, opportunities to participate in C.P.R. are frequently haphazard and depend on the deliberate actions of senior colleagues. The active learning opportunities offered to young doctors or mature undergraduates within C.P.R.

teams are uneven and unprogrammed. Junior doctors could also expect that, in a large scale resuscitation event, they will be given feedback on the rate and effectiveness of their compressions, as part of a general activity within an arrest.

Implication: During their preparation, undergraduates should be reassured that their training will be effective. C.P.R. rehearsals should include being given formative feedback on their chest compressions in a similar manner to that conducted within real team-based events. Formal programmed opportunities to include junior staff and senior students in the provision of chest compressions should replace the current *ad hoc* and highly serendipitous arrangements.

Recommendation: resuscitation training for doctors should be restructured on a continuum of practice that would include: comprehensive undergraduate C.P.R. preparation; optimisation of opportunities for supervised intra-C.P.R. practise; and *post hoc* review of eventful resuscitation events.

Topic 2: Simulation scenarios for C.P.R. rehearsal

Discussion: Almost all participants reported having highly bounded responsibility in leading a C.P.R event and did not make complex management decisions during it. It was universally the case that more experienced clinicians were present and that they, not the novices, naturally assumed leadership. This was regardless of their clinical discipline or health craft group (for example, an experienced charge nurse would run an arrest until a more senior doctor arrived). The training scenarios that the junior doctors practised, emphasised higher levels of decision-making than were recounted in real life.

Their preparation thus rarely resembled the true natural order (where they were given specific instructions). Typically their training scenarios were perceived as the *blind leading the blind (*Franz, page 145) and had a bounded utility. It was a new experience to many of them, that, when they gathered at an arrest, they immediately became part of a much larger team, where they encountered many individuals, often unknown to them.

Finding: Many of the scenarios used in undergraduate simulation of C.P.R. rehearsed undue expectations of leadership and decision-making. Few scenarios offered realistic practise of close supervision, being directed within a team response. There was also significant variation in participants' experiences between those teams where individuals knew each other well (and were comfortable negotiating responsibilities), and those where team members were relatively unfamiliar to each other, and within which, responsibilities were immediately apportioned.

Implication: Undergraduate simulation scenarios should be modified to emphasise working under close supervision and within a team-based approach. Whilst within their total preparation, there may be some justification to the continuation of personal leadership teaching, a more credible and practical focus would base scenarios on realistic clinical responsibilities and activities. Team-based rehearsals, where individuals rehearse different roles, should be incorporated. Such scenarios should offer rehearsal of conditions where members of the responding group are unknown to each other and role clarity is negotiated.

Recommendation: resuscitation training should be reconfigured to reflect the reality of C.P.R. responsibility (including team membership and role simulation). It should be conducted in a multi-disciplinary and inter-professional educational setting.

Topic 3: The effect of "ambient" characteristic

Discussion: For the clinicians here, undertaking C.P.R. for an elderly infirm patient with an active DNAR order, and who is therefore at the end of their life's journey, posed little or no challenge to them, regardless of outcome. At the other extreme however, being part of an unsuccessful C.P.R. response to a young patient, with a previously undiagnosed medical problem, usually distressed them during the event, and continued to do so in its aftermath. The influence of what this study has termed the "ambient" characteristics of the C.P.R. event, have been further qualified; they exert a highly significant influence on what clinical experience the doctors made sense of, and how they remembered the event. This research has documented a number of key, individual, environmental characteristics, e.g. proximity to participant's own age, proximity of the patient to the end of their life, chaos, environmental noise, the human clamour of competing voices, the untidiness of multiple ampoules and needles being opened and discarded, and the unpleasant smells of human waste. This current list is unlikely to be an exhaustive one.

Whilst some of these, like the clamour from many people acting at the same time, could be simulated, others, like the smell and mess of faeculent vomiting, may prove beyond the resources routinely deployed in C.P.R. training. One of the most significant issues documented here was the prolonged resuscitation, and usually subsequent death thereafter, of young patients, many of whom were subsequently found to have previously unknown, yet sinister, congenital heart conditions (e.g. H.O.C.M.). Most resuscitations scenarios in training stop after 10 minutes; some events narrated here (Samantha, Hugh and Henrietta) ran for excess of 30 minutes (even over an hour on some occasions), and their fatigue was marked and unexpected.

Finding: The "ambient" characteristics associated with an arrest play a significant role in how any one C.P.R. event is experienced and remembered. Certain events are more likely than others to offer potential to affect those individuals involved.

Implication: An awareness of influential "ambient" conditions should alert supervising clinicians to anticipate stronger support immediately after the event for staff in their care. Awareness would facilitate discussions where critical reflection on such experience may be potentially beneficial. Whilst all events have the potential to cause distress understanding, the ambient conditions at the time of the event may offer better insight into those events that will become influential.

Recommendation: each C.P.R. event should be formally reviewed to determine if its particular circumstances contain emotionally challenging "ambient" conditions or "proximity" issues.

Topic 4: Emotional experience of performing C.P.R.

Discussion: One interesting finding within this research is that the experience of performing C.P.R. or attending at resuscitation may be a highly challenging or reassuring and affirming one. It may be an emotionally distressing, satisfying or uplifting clinical event in a young doctor's early life. At best, for those positively affected, their presence and participation during C.P.R. was discussed as wholly beneficial one. At worst, for those situations where they are negatively affected, the event was remembered as a significant time of personal distress or challenge, even where outwardly they displayed limited emotion and retained, and then processed, the experience internally.

Previous studies, not exclusively of young doctors (Hunskaar and Seim, 1983, Lucia et al., 1999) have shown how emotionally demanding C.P.R. can be. The negative emotions experienced by this study's participants echoed the findings of the published qualitative research (Page and Meerabeau, op. cit., Ranse and Arbon, op. cit.), where the nursing team or the young nurses who experienced adverse emotions frequently initially internalised them. Similar to these earlier studies, the common shared belief from this study was that, unless the individual was perceived to be obviously suffering or initiated a plea for support, they were coping. In many of the episodes narrated herein, individuals themselves later sought support from family or friends: institutional support was either non-existent or was not accessed.

Within this study highly positive emotions were almost as difficult to deal with as negative ones, especially when they were associated with adverse rather than positive outcomes. Several participants in their interviews talked, for the first time, about the tangible excitement they experienced in C.P.R. For them, this was a disquieting reality, and they described a form of cognitive dissonance, as they sought to balance their emotions with the experience that evoked them. It may be that to, invoke Jarvis (1995, 2003), that they had retained emotion confusion until they could process it and at a later time make sense of it. Some participants had remained within this process; they had not yet finally resolved its outcome.

The experience of surreality has previously had scant attention paid to its meaning. It emerged here as a relatively common emotional state. From the Jarvis learning model, this surreality is understood as a temporary state where judgement is suspended, and a variety of further cognitive processes, including evaluation, or reflection or experimentation are later evoked to promote learning. Learning and sense-making are used here synonymously. For some, for example, Samantha, time passed by unnoticed. For others, for example Franz, Shane and Harriet (the medical student), they formally attempted to dissociate themselves from reality. It is possible that at this point they are moving through events that are too challenging to be accepted in their current world model.

These events are then reserved for deferred cognitive processing: a form of self-protection to avoid being overwhelmed by novel reality.

Sometimes internal processing took many years: the circumstances were re-visited when the individual felt the need, or perhaps they had developed the emotional capacity to do so (Cornelius). Sometimes the external input of others was immediate and sometimes this was welcome (in the case of Shane who had an informal debrief with his peers in the aftermath of the death of a young victim of a Motor Vehicle Accident. Sometimes however when immediate support was sought, the peer response was derisory. At other, much later times, evaluation would involve input from trusted others (Cornelius at the dinner party when he was in known company). Understanding what might be occurring within the individual during these states of surreality could be worthwhile. Further speculation upon this specific issue of the experience of surreality is, however, beyond the remit of this doctorate.

Finding: There are a number of very different reasons why individuals may be emotionally challenged during the provision of C.P.R. If individuals have experienced a shocking or emotionally challenging resuscitation, support is however unlikely to be forthcoming at the time or even afterwards from their immediate superiors or the C.P.R. team. With no formal processes, affected individuals will seek informal support from family, friends or professional help groups; professional help groups or family physicians are rarely if ever involved. Furthermore, when highly positive emotions were experienced, participants struggled internally to balance their experience with its consequences.

Implication: Absence of obvious distress (or, for that matter, elation) should not be presumed to indicate that all is well emotionally with inexperienced clinicians post C.P.R. Consideration should be given to developing formal mechanisms to identifying those at most need of emotional support or feedback. For those in positions of authority or mentorship of young clinicians, a formal and more active search for distress should occur, especially if they are alerted

to significant ambient conditions. Such discussions may require delicate introductions and handling as the young clinicians may still be processing their experience or perhaps even be in a paused state of consideration. Discussions on adverse impact are likely to be easier than those around elated states.

Recommendation: Mentors and leaders of C.P.R. teams should be trained to look for hidden emotional distress, cognitive pausing or unexpected elation in inexperienced team members. They should be trained to respond according to each mood.

Topic 5: Support or feedback needs: long term effects of performing C.P.R.

Discussion: As discussed earlier, the acknowledged recruitment difficulties in the earliest stages of the project, necessitated expansion of the participant group to include the experiences of experienced clinicians: one of these had already retired; one had been in practice for over 20 years; and three others had been in clinical practice for over 10 years. Their stories added richness, rural experiences, and an international context to the data. Cornelius developed his personal legend to explain his identity to non-clinical others. Not only, therefore, were their experiences important at the time but, crucially, like those of the trial study participants who discussed their best and worst day of early clinical life, they possessed enduring importance.

For paediatric resuscitation (where it could be reasonably argued that Diana was very poorly prepared), her own inadequacies, as she experienced them, became the dominant dimension to her story. She was uncomfortable reconsidering whether how she had conceptualised these events at that time was unrealistic. She resisted speculating why a doctor with limited specialist paediatric knowledge (dating from her undergraduate educations several years earlier) should have been placed in a position of responsibility for neonatal resuscitation without a skills refresher course. Even though Diana admitted that nowadays

refresher courses are mandatory before embarking on a similar post, she was reluctant to re-evaluate her experience or what she had taken from it; for her it was beneficial for its guiding influence on her own later clinical conduct to remain. It seems therefore necessary to acknowledge that there are circumstances where an individual could be influenced in a positive way, by distinctly negative experience; not all negative experiences therefore need have an adverse long term outcome.

Within this survey the participants identified immediate technical feedback (from local clinicians), knowledge in the medium term of the event outcome or patient circumstances (to contextualise the case, for example in a patient who had H.O.C.M.), and appropriate emotional support in the immediate aftermath of C.P.R. (from a variety of trustworthy individuals) as highly variable post C.P.R needs. Beyond the immediate humanitarian need to support a (junior) colleague in distress there are significant reasons to normalise what would be a unique, draining and challenging experience.

Firstly, and as discussed earlier, in Chapter 2 (Literature Review), care of self within a broad agenda of professionalism (Wilkinson et al, 2009:) and associated questions around medical workforce burnout (Oskrochi, 2016: 650) and "emotional indebtedness" (Simon, 2016) mean that interest and care for a junior colleague should be undertaken for both immediate and long term purposes.

The second reason for such intervention is to assist in the calibration and formation of personal horizons that form as a result of their C.P.R. experiences. From Gadamer, influential experience (Erlebnis) has a conditioning effect on an individual. There would be merit in interacting with an individual at the point of formation of their unique C.P.R. horizon; this is discussed later (page…). The long term benefit thus goes beyond emotional support and a reduction in emotional indebtedness: it promotes the normalisation of their historically effected consciousness. Unfortunately however, given the mixed experience of workers in other emergency service sectors (Smith and Roberts, 2003, Bledsoe,

2003), it remains an extremely open question whether a critical colleague (Brookfield, 1995) or respected other, would enable a more balanced and realistic perspective to become the dominant

Any staff member undertaking this role would require a high level of training, empathy and personal resources (time and own emotions) to offer effective and credible support. And too, there would need to be confident that the process, whilst ethically motivated, would prove beneficial and not harmful: it should be guided by the established medical principle of *primum non nocere* or *first do no harm* (Sharpe and Faden, 1998).

Finding: Critical C.P.R. events in early clinical life narrated within this study have a powerful formative potential and exert an enduring effect. Events are rarely subsequently interrogated or re-interpreted, and are re-iterated unchanged, especially when they are anchored to a strong emotional memory. How they were experienced at the time is how they are remembered. Clinical experience is encoded uniquely; events are remembered in a highly personal manner and strong emotions at the time will dominate memory.

Implication: The long-term benefits or risks of challenging the personally encoded experiences of immature practitioners are unclear. It is not known whether any targeted interventions would promote a more balanced perspective, between personal sense-making and desired professional or consensual viewpoints. Such interventions could influence an individual's personal development and their ultimate professional identity, and offer long term benefits to themselves and to society. The balance between self-care and care of the patient and reduction in emotional indebtedness should be important goals for such interventions. The optimum proximity of these discussions to the event itself and the level of social intimacy (single person or group) of any planned intervention remain unclear.

Recommendation: research should be undertaken to establish best practice in timing and promotion of normative gap closure. Optimum training for those mentors or team leaders undertaking such interventions has yet to be developed and should include elements of learning theory and offer understanding of how meaning is socio-culturally perceived and encoded.

Topic 6: The use of one-to one interviews in C.P.R. research

Discussion: Only two previous studies that used a qualitative methodology were identified during the literature review (Page and Meerabeau, op. cit., Ranse and Arbon, op. cit.). Both of these used a focus group or similar process to interview their participants, and both were open to an axiological criticism. In their study Ranse and Arbon (ibid) critiqued their own methodology, noting that focus group research is methodologically incompatible with phenomenology (Webb and Kevern, 2001): due to the cross contamination effects of group process, a dominant individual could sway opinion. The same limitation could be even more significantly raised against the interviewing techniques employed by Page (1996: op. cit.). Not only did the group membership vary between three to six individuals, but the experience level of staff within the C.P.R. response groups varied from student nurses to experienced ward sisters. Axiologically therefore, some voices would naturally have more authority than others: senior individuals would be likely to be more influential.

This project has confirmed the following: it is feasible to recruit participants for one-to-one interviews; recruitment is time-consuming and problematic; a number of different recruitment methods need to be deployed to attract an adequate number of participants; one-to-one interview offer participants a unique exposure. One-to-one interviews eliminated cross-contamination by others or social inhibition and avoided recrimination when discussing team performance. This method does admit the uncorroborated account of single individual voice: all participants' contributions were equally valued.

Furthermore, a unique feature of the personal interviewing mentioned earlier was the informal discussions that took place after the interview. An additional purpose in continuing to chat off-line was for the researcher to assure himself that none of the participants remained emotionally upset. Since their interview, and up until this writing of this thesis, no participant has renewed contact with me to seek emotional help or request redaction of their account. This confirms that this method is acceptable both at the time and after the event. One of the principal objections, lack of published research, identified by Ranse and Arbon (2008: op. cit.) for focus group data generation being selected over one-to-one interviewing, has now been addressed.

Finding: One-to-one interviewing is a practical, useful, and additional tool that generates unique insights in the sphere of C.P.R. research. One–to-one interviewing for C.P.R. research is highly dependent on sampling strategy; convenience sampling works for altruistically motivated individuals. Individuals, even if they recount emotionally charged events within their narratives, may balance this against the opportunity to tell their story (personal benefit) or help others (altruism). Stories narrated are uncorroborated accounts and often contain references to other living or deceased colleagues, and to living or deceased patients, and need careful redaction during data cleansing.

Implication: One to one interviewing is feasible to undertake within C.P.R. research and should be included and considered alongside other methods for data production. Recruitment for interviews can be problematic; convenience sampling may be the best strategy. Purposive sampling may require consideration of suitable incentives. Stories selected for discussion will contain significant emotional memories or challenging clinical circumstances, the narration of which may evoke moderate acute emotional distress. Interviewers should have strategies to recognise and evaluate potential distress, and to respond appropriately to it. As with all research, patient and colleague confidentiality requirements are paramount.

Recommendation: whilst respecting the positivist tradition of scientific medicine, C.P.R. research should include more qualitative studies that are generated from interactions between researchers and participants rather than qualitative style questionnaires. Medical education and clinical practice literature should accept more narrative based articles for main stream publication, particularly from one to one and similar methods that capture deep personal experiences.

Topic 7: Symbolic Interactionism: the search for inter-personal meanings

Discussion: The tenets of Symbolic Interactionism (S.I.) will not be reiterated here: they have been quoted earlier (pages 16 and 99). A more detailed exposition of S.I., or its foundational roots, cannot be presented here, due to the needs to present other understandings (Topics 1-6). The discussion will present a discussion based on application of its principles rather than a justification per se for its philosophy. The usefulness of the framework will be illustrated in respect of two themes within the participants' personal witness of team leaders: leadership characteristics; and what has been termed the *resilient me* that emerged from their interviews.

S.I. is a sociological framework where personal experience is governed by a constant search for consistent meaning; life events undergo continual critique for the symbolic intent of behaviours between the self, the self that one acts towards one's own internal self, and towards external others. Within the analysis of the interviews, S.I. has offered traction on what individuals observed and interpreted, both within themselves and in what they witnessed externally. Key to this understanding has been its ontological understanding of the inner and interacting selves (dyads) and the generalised other (Mead, 1934, Aboulafia, 2012, Charon, 2010, Blumer, 1969). The discussion below will focus on discussions with these two generalised others: one external and one internal.

From its premise that "selves' are formed within social interaction (Aboulafia, 2012), the close witness of the participants of others in C.P.R. leadership roles has offered a complex, complimentary and complementary vision of kind of self the interviewees could aspire to become as a mature clinician performing C.P.R.. This is a self that behaved professionally towards others and towards its own inner "Me. The nascent *self* that takes part in C.P.R. is therefore both observing and learning the rules of C.P.R. team conduct: what various members do as individuals; how they interact; and how they relate to each other.

The positive witness offered in the preceding paragraph however is not their first vision of leadership. The positive affirmation of expected reality (the conduct of leaders) offers further positive conditioning that the way the reality of the world and their interpretation of the world are consonant (Jarvis revised learning model of the processes of learning, (op. cit.59)). The participants' words are affirmatory statements that confirm representations already held within the individual, rather than intuitively interpreted *tabula rasa* observations. When leaders (doctors or senior nurses) effectively (and sympathetically) lead within C.P.R., participants will align these experiences with the pre-existing idealised versions from their earlier life.

In this study there were a variety of key leadership characteristics on display: maturity (Sebastian); the technical competence of their judgement (Henrietta); an ability to assume ultimate responsibility yet remain inclusive and still somewhat democratic (Shane and Hugh); calmness under pressure (Henrietta, Diana, Crispin and Shane); an empathetic demeanour (Sebastian and Hugh); and a sensitivity to emotional distress of others (Henrietta). These and the ability to advocate for the patient (Harriet) were attributes valorised by participants.

The developing self is a self that is orientated to the outer generalised other. It is an externally orientated self, one which calibrates external conduct expectations, consonant with its own values and expectations, during C.P.R. This self is identifying and clarifying how others will know, and accept, that it is

a professional, perhaps even, in time, a potential leader. Symbolic Interactionism has offered a useful approach to understanding role-modelling in medical practice, especially in the context of leadership.

There is however another self that is interacted with during C.P.R. This is the inner self: a different generalised other. Within S.I. the version of oneself that first encounters novel phenomenon is the "I". When time has passed and the individual is able to look back upon this "I", its identity changes: it becomes "Me". The prior actions (or experiences) of "I" become objectified. In becoming cognitively aware of them, "I" transforms within the individual into "Me". The self that witnesses the emotional resilience of others is thus calibrating its own "Me": it is transforming, sometimes through conscious reflection, sometimes through unconscious acceptance, its "I" into its own clinical "Me". This "I" self always questions, and, within the experience of C.P.R. participation, is experimenting with acceptance of a form of stoic self. One key emotional adaptation identified was that to become a doctor is to become self-resilient in the face of adversity and personal emotional challenge.

Junior doctors noted this resilience in two ways. Firstly leaders in particular, though it can apply to all C.P.R. attendees, contained their emotions. Whilst they may have been internally distressed, they displayed an outer calm (potentially through a deliberate disconnection). During the interviews two young doctors narrated aspects of undergoing this emotive inuring:

> *Always go in…try to be strong emotionally… right, "you're not let yourself get affected emotionally", like if you let yourself out, get affected emotionally you will not do your proper job.*
>
> (Eugene)

> *Yeah, I just…right there in front of me…I guess you sort of suppress any emotion and focus on what you are doing.*
>
> (Marjorie)

The other experience that they interpreted as evidence of emotional resilience was in the ability of clinicians to reset their emotional clocks, post C.P.R.:

> *It never ceases to amaze me, well, **I guess it will** (this author's emphasis)…how after something like potentially traumatic and something quite significant like that such as somebody's death, immediately after, everyone goes back to work, so it's quite fascinating. So within 5 minutes of performing C.P.R. on someone who has just died you are just talking about some routine medications and things like that…I don't know if it's you're expected, but I think we expect of ourselves, to go back to work and continue the day's work.*
>
> (Eric)

From an S.I. perspective Eric interpreted three issues here in his introspective transformation of "I" becoming "Me". Firstly, he speculated that his transition will end when he is no longer *amazed*: he will be part of the team because it will be normal for him, and he won't notice it. Secondly, he notices that everyone seems unaffected by what has happened. From his S.I. perspective, he was looking for normative confirmations: what everyone else did. Thirdly, he identified that this expectation sat within the individual. No one told him about it; it was apparent in the behaviour of others and it was he alone who made sense of this observation and determined its meaning and influence.

Eric noted a disparity between his emotional state and the outer or displayed state of others. This dissonance or anomaly was then subjected to further analysis and speculation, until he understood that this was normal or expected behaviour. What he then learned was that he should expect such emotional disconnection of himself; it became part of his future expectations of his own conduct and emotional display during C.P.R. Two final, contrasting examples (Harriet and Henrietta) of participants' statements are offered on the emotional transition to professionalism that junior clinicians undergo in the management of their inner self. Harriet the final year medical student discussed her first C.P.R. experience:

Seamus: *What else went through your head as you were doing that?*

Pause

Harriet: *I think I was just trying to detach myself from the fact that she was a real person. I was just trying to focus on doing the compressions as well as I could.*

Henrietta was a highly experienced clinician with experience of many cardiac arrests. She was also a relatively junior clinician and her account neatly captures the adaptations that were partially rehearsed in an early form by the most inexperienced participants here. It also indicated that although on the surface all may be calm, underneath there is a potentially furious emotional paddling that is placed on hold:

> *I pretty much blocked it out while I was actually doing the C.P.R. I concentrated on the technical and scientific side of things and didn't think about who the patient was…afterwards would be when the emotional side of things would kick in. So I was able to put my brain into just you know C.P.R. mode…then deal with the consequences later.*
>
> (Henrietta)

Finding:

Junior doctors will process their clinical experience in ways that make sense to them. Opportunities to emphasise positive behavioural or attitudinal characteristics exist in situations where leaders under extreme stress exemplify professionalism. Clinicians are unlikely to be aware of all the ways that their behaviour is being interpreted by others, especially when they are acting in a time precious interaction. Some aspects of professionalism witness, such as the "Stoic me", may exert a less benign influence on the growth of young clinicians.

Implication:

Mature and experienced colleagues should begin to consider how their behaviour under duress shows aspects of professionalism that may be interpreted in ways

that are both intended and unintended. Young clinicians must be engaged at a deeper level so self-caring aspects of professionalism (Wilkinson et al, 2009) are taught. Influential clinical encounters should be identified as important exemplars that a variety of messages. A broader view of experience within medicine must be formed about professional witness and how it should be interpreted and explained. Mature clinicians must openly question the best way to prepare younger clinicians for a sustainable and non-injurious professional life; a life that does not simply demand the sacrifices and repeat the lessons of their own early life.

Recommendation: "Self-caring" as a theme within professionalism should be urgently developed with medical curricula; this theme should then be extended into the formal post graduate training of specialists. Urgent collaborative work needs to be undertaken between lay society, medical regulators, and vocational representatives to establish a set of shared expectations of practice and its emotional engagement that protects both the public and the profession.

Section 2: Wider contribution and relevance of this study:

Most of these recommendations listed above relate to the implications for the design and implementation of undergraduate medical curriculum, and for later CPD and mentorship. Additionally however, this thesis contributes to the relatively sparsely populated field of qualitative research within medical education literature, most notably in the areas of traumatic or injurious practice and normative gap closure. It makes a modest contribution, with the Analysis of Aim Matrix (A.I.M.), to the field of qualitative research methodology. It makes a small contribution, at a theoretical level (the holistic model of experiential learning), to the field of experiential learning theory.

These broader contributions are now discussed in four separate sections: medical education; curriculum design; qualitative research; and learning theory.

Whilst these first two sections relate relatively specifically to medicine and medical education, the latter two offer wider application and the potential for transferability to other areas of practice.

1. Medical education

The desirability of conducting qualitative C.P.R. research using a 1:1 interviewing technique was recognised by Ranse and Arbon (2008). The ethical (the potential for emotional disturbance post-interviewing) and practical difficulties that Ranse and Arbon anticipated have been largely assuaged by this study. It is open to speculation whether the lack of an interpersonal relationship between this researcher and the participants, which hindered immediate recruitment, in the end worked in this researcher's favour; he was, however, perceived as being genuinely neutral by the participants, an advantage potentially by comparison with previous studies within which there were personal and mentorship relationships between researchers and subjects (Ranse and Arbon: 2008; Meerabeau and Page 1999). One positive implication of this study may be that future qualitative research in C.P.R., in order to obtain to enable safe, full and free disclosure by participants, should require the researcher to maintain a similar distance as this researcher did.

The paucity of, and value attributed to, qualitative research in medicine, has recently been raised in the British Medical Journal (B.M.J) by Greenhalgh *et al*. (2016). In an open letter to the editors of the B.M.J., over 100 prominent research academics identified a marked reluctance of medical journals to publish qualitative studies. The trenchant response in the journal 2 weeks later (Loder *et al.*: 2016) illustrated the extent of the problem perhaps even more clearly than Greenhalgh's initial letter. To a lesser extent, this claim may be levied at medical education journals. Until high quality studies are regularly published in prestigious medical education journals, the influence of qualitative research will be less than that afforded positivist quantitative studies.

It is uncommon within published studies for the researcher's(s') personal standpoints to be as explicitly and comprehensively delineated as has been offered here. Perhaps medical education publications would accept qualitative research which made such standpoints explicit; such publications would *ab initio* acknowledge that one's own influences are *unaufhebbare* or "ineradicable" (Gadamer, 1995: 62). Incorporation of an A.I.M. (see below) could assist by offering fuller disclosure of the researcher's viewpoint (Nagel: 1989). Whilst this may initially be challenging for researchers to undertake, and also for reviewers to accept, it may facilitate rather than obstruct publication through making explicit the issue of bias. Acceptance of Gadamer's concept of *wirkungsgeschichtliches Bewußtsein* (historically effected consciousness) would facilitate the significant and paradigmatic shift within medicine and medical education journals, which have hitherto prided themselves on a post-Enlightenment and fundamentally positivist stance.

2. Curriculum design

There are three significant areas which this research highlights:

a. The research demonstrates a significant gap between the established uni-disciplinary nature of teaching and the inter-professional reality of practice. The nature of the responsibility held by participants during C.P.R. has been written of extensively in the thesis. This deficit however would be a relatively easy matter to address through modification of teaching materials. A more difficult problem exists in the area of inter-professional work, where examples of cooperative undergraduate education (Reeves, 2013) are the exception rather than the rule. Some of this may be due to different education practices associated with differing health craft groups (undergraduate medical and nursing students have quite different proportions of ward responsibilities, formal lectures and self-study activities in their final undergraduate years). Some of it may be due to a reluctance to move out of

educational silos in preparation for unique discipline praxis (Frenk, 2010). Despite these caveats, educational preparation for C.P.R. invariably involves a large measure of simulation. Realistic practice mandates the realistic mix of both roles and responsibilities envisaged above.

b. Much has been made in the thesis of the extent of the emotional upset experienced during and after C.P.R. Current undergraduate medical curricula focus heavily on the acquisition of skills and knowledge; curricular teaching on the affective domain remains minimal. The exception to this almost exclusively focusses on the negative consequences of not managing one's own affect. Within the teaching of medical ethics, undergraduates are taught to become doctors who are empathic, non-judgemental, and who care about their patients. In particular, emotional reactions to patients (highly positive or unduly negative) should not influence one's practice (G.M.C., 2013, the duties of a doctor); this teaching is thus exclusively for the protection of patients. Little recognition has thus far been given to the area of self-care, identified by Wilkinson et al (2009), see below. Nor, in general, is there teaching on how to manage emotions other than in terms of self-control. From this study it is now time for a mature discussion about educating young doctors on navigating the challenges to emotional health and personal wellbeing within professional practice.

c. Young doctors are not alone in encountering traumatic or injurious practice situations in healthcare: nurses and paramedics, as first responders, may also find themselves in situations where the "ambient" conditions are highly adverse. Whilst traumatic practice is inevitable, this thesis suggests that using the holistic theory offers a robust and novel education based purpose to post hoc counselling. Within this research, significant normative gaps in participants' narratives (for example Melanie and her failed

neonatal resuscitation) surfaced. Thus formal counselling, going beyond simple emotional support, should promote normative gap closure between the individual's learning experience and the existing professional consensus.

3. Qualitative research

a. The Analysis of Influence Matrix (A.I.M.) was constructed in Chapter 1: Introduction as a means of gaining traction on this author's mindset, or place, where his gaze was sited. Whilst it is customary (Hertz: 1997) for qualitative writers to demonstrate reflexivity, this author is unaware of the formal and structured undertaking in reflexive writing deployed here. The benefits of such an exercise in transparency were profound for this author. Given, however, his singular perspective, it is questionable whether a cooperative qualitative research project, with mutually agreed meanings, requires this level of introspection. However, as each section was personally chosen by this researcher, others too could customise its individual components to personalise their matrix. For single researchers, and particularly as a personal heuristic for solo and collaborative researchers, the formalisation of the A.I.M. may therefore offer useful addition insights in the initial planning of a qualitative study.

b. The formal alignment of the three theoretical frameworks (P.H., S.I., and E.L.T.) in this framework have been defended elsewhere: Chapter 3 (Methodology). However one surprising consequence of this alignment, as experienced herein, was that the organic interaction and mutual influence that occurred between these three domains. The result of this interaction was that the subsequent combination of these frameworks was not simply integration of separate components. With the assimilation of each

framework, the researcher became a different person. A new framework was inevitably refracted through the previously encountered framework (s). Thus, for example, having started from a position of embracing S.I. the concepts of P.H. were accepted with relative ease. Furthermore as each topic was subsequently explored in greater depth in what felt like an iterative merry-go-round, each additional insight or gain of knowledge was inevitably refracted as the whole system developed. Formal iterative alignment of theoretical frameworks therefore results not only in the deepening of linkages but at a fundamental level affects the construction of knowledge and perhaps even world view itself. The implication of this for qualitative research in particular is to recognise that the very process of the undertaking such studies will have direct consequence for the researchers, and that these consequences go far beyond the interactions with participants and the effects of their narratives. From the E.L.T. of Jarvis (1987), the act of undertaking any study will affect the personhood of the researcher.

4. Learning theory

Within this thesis, an adaptation, the Integrated Model, was developed of the Experiential Learning Theory of Peter Jarvis (page 114). From the narratives presented it has become clear that participants were actively, though not necessarily consciously, constructing their own post hoc world view. This recognition has resulted in a further modest adaptation (Diagram 7.4: the holistic model), which melds the three theoretical frameworks (E.L.T, P.H. and S.I.) within an existential being who possesses an *a priori* world orientation, who undergoes influential life experience, and who emerges *post hoc* with a newly fused horizon. The learning theory itself remains intact for the Holistic model offers enrichment rather than fundamental change to its transactions.

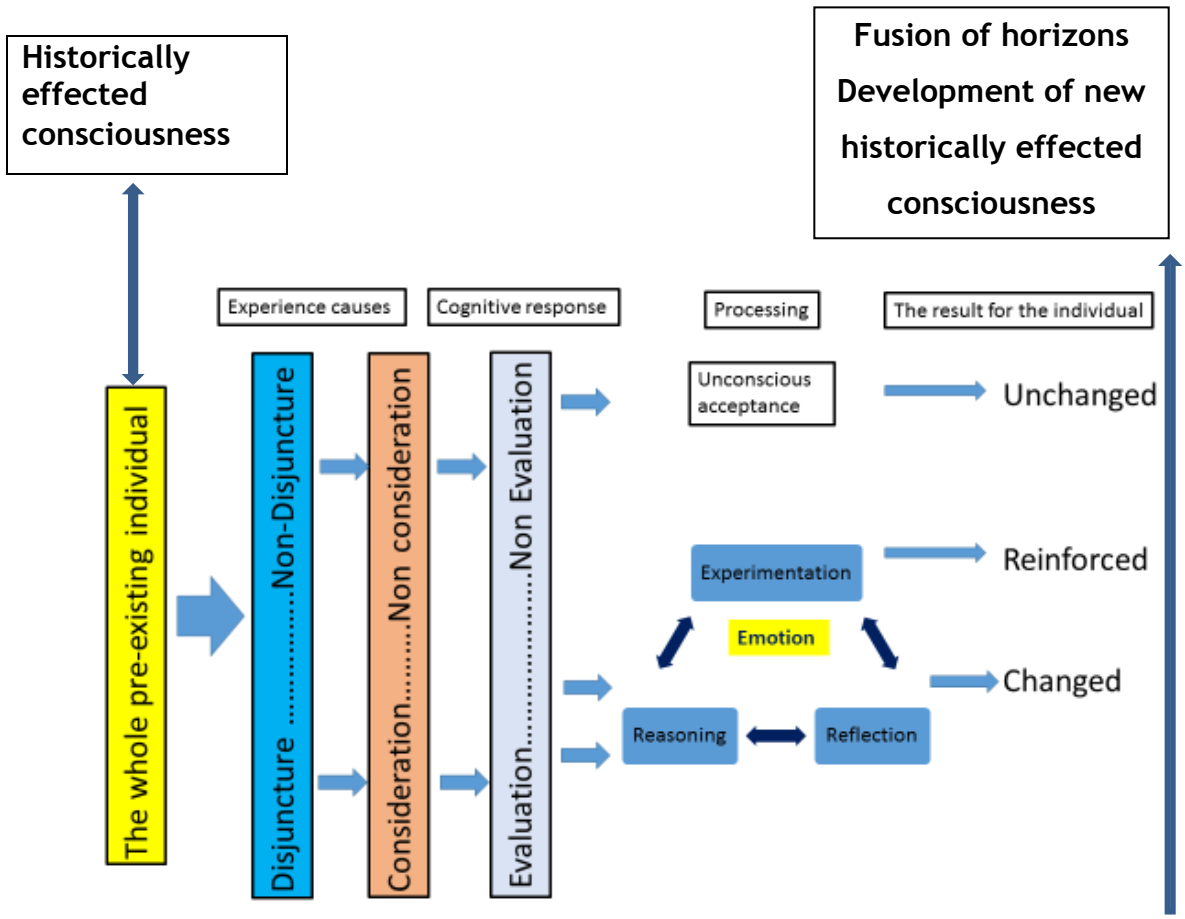

Diagram 7.1, Holistic Model of Jarvis E.L.T. with Philosophical Hermeneutics pre and post hoc

Within the Jarvis E.L.T., once new experience is processed two frameworks (PH and SI) further calibrate the individual. The individual who emerges is changed (or not) and, as a result of this new *fusion,* has a new expectation of the world. Symbolic Interactionism then sets a new set of socially determined markers that the individual will use in this *historically effected consciousness* generated anticipation of a future life; and the cycle iterates. The additional dimension offered by the holistic model is that it provides an explanation to why individuals initially perceive experience differently and it offers an enhanced outcome as it reframes the end point of experience as their newly constructed historically effected consciousness. This adaptation provides a theoretical justification for a *post hoc* intervention with individuals who have undertaken CPR.

In this model there is a formal identification of a social communication process (S.I.). Jarvis has cited the role of Mead in the development of his thinking around a "learning self" (Jarvis 1987: 40). However his explicit statements on this matter relate to the social construction of a "self" or "selves". Formal identification of Symbolic Interactionism as the social communication milieu now presents a coherent interpretative framework to those applying the theory to real human experiences.

The process of experiential knowledge transformation (central to a range of adult learning theories, including those of Jarvis) has now been formally placed within a broader second order theory, or framework, of Philosophical Hermeneutics. This has offered both a more powerful and logical basis for the pre-existing uniqueness of the individual who encounters experience, and simultaneously a compelling rationalisation for its *post hoc* outcome or experience (the holistic model). There is now a profoundly philosophical basis for the personhood of the individual who encounters experience with their unique "historically effected consciousness". There is now an equally strong philosophical basis for the personal "fusion of horizon" that results from the internal learning processes of the existing model.

The annealing of P.H. to E.L.T. too has strengthened the theoretical construct behind the grounded learning model that Jarvis built in 1987. This linkage therefore offers the E.L.T. a significant hermeneutic pedigree (see Chapter 3: Methodology on Hermeneutics and the history of socially negotiated meanings). In turn the E.L.T has offered P.H. enhancement for it has delineated a model for learning and the processing of experience, something that is not clearly laid out within the metaphysical discourses of Truth and Method (Gadamer: 1975).

A final comment is that this limited adaptation (the holistic model) was the result of the deliberate alignment integration of those theoretical frameworks (E.L.T., P.H. and S.I.) selected for this thesis. Other researchers may wish to use a different ontological basis of their work than that of Subtle Realism;

deployment of alternate holistic orientated approach, using different overarching communication and philosophical frameworks, could, in a similar manner, extend and enrich their use of this or other experiential learning theory models.

Section 3: Limitations of this research

There are many potential limitations of this research. Three broad areas will be discussed: methodology; study population; and the researcher.

Methodology

Although a research space within the qualitative arena was identified, the convenience sampling undertaken here may limit the broader implications. Despite the effort to ensure that a valid sample was achieved, purposive sampling may have offered a more robust process. Reassuringly however, convenience sampling was the recruitment method used in the only other two qualitative papers identified (Page and Meerabeau, op. cit., Ranse and Arbon, op. cit.).

The reflexive focus within the dissertation has already been alluded to in Chapter 1 (Introduction). Despite this, the attempt at being self-critical may ultimately be a vain one: unsuccessful and conceited. It may not ever be possible to wholly articulate to oneself all the influences that bear upon one's historically effected consciousness (Gadamer, 1975: 312). A partial exposure, for both the reader and the author themselves, may be all that is ever achievable, which could offer a false comfort for both parties. Furthermore, it is acknowledged that, in the process of constructing the Analysis of Influence Matrix (Table: 1.1, A.I.M.: 32**),** introspection sometimes was worryingly narcissistic. The research agenda may have inadvertently been corrupted though an unconscious and autopoietic effect of intense reflection. The deep

reflexive practice advocated (Hertz, 1997) may need to be further qualified or restricted to formal ethnographic studies.

Others (supervisors, credentialing organisations and peer reviewers) will determine whether highly conscious introspection has enhanced or detracted from the trustworthiness or credibility of the research findings. Collaboration with co-workers throughout would have critically moderated this researcher's influence. Such a process would be very similar to the critical reflection path within teaching practice on the benefits of the insights of critical colleagues who are able to recognise and mitigate the effects of the "idiosyncratic failings…shared by many others who work in situations like ours" (Brookfield, 1995: 36).

Perhaps the biggest limitation is not of the methodology itself, but rather whether the reader finds resonance with the particular paradigms chosen for it. The Philosophical Hermeneutics of Hans-Georg Gadamer (Gadamer, 1975, Madison, 1999, Gadamer, 2006, Malpas, 2013a), the sociological framework of Symbolic Interactionism (Blumer, 1969, Fine, 1993, McClelland, 2000, Charon, 2010) and the Experiential Learning Theory of Jarvis (Jarvis, 1995, Jarvis et al., 2003) have been portrayed herein as an interconnected whole, an annealed reality where the parts possessed an internal consistency and aligned with each other. More importantly perhaps, they were chosen because they personally resonated with the researcher. The usefulness of this research to others may depend, not only on their ultimate comprehension of Philosophical Hermeneutics and Symbolic Interactionism and Jarvis, but whether their individual world views facilitates its acceptability and offers utility.

Several academic colleagues in education commented early on: "I don't really get Symbolic Interactionism". It seems unlikely to propose that an analysis of this research's adequacy will, for them, satisfy such key validity concepts as "plausibility" and "credibility" (Glaser and Strauss, 1967: 225). Adequacy or goodness requires the satisfaction of the reviewer, determined by their personal

mindset. This is not to imply criticism of any individuals' unique perspectives, but rather to re-emphasise that, from Gadamer's perspective, no-one can be other than that which they are. Their perspectives represent the fusion of the variety of experiences that build their own historically effected consciousness.

Consequently, simply because the research process can be defended in this academic process, does not justify its conclusions becoming influential: true worth is the exclusive privilege of the reader. This matter is discussed, more cogently than presented here, by Carter and Little's 2007 paper (op. cit.), where they contrast the different evidence requirements of two independent university academics (Professors Rose and Jeffrey) who undertake qualitative research. For both professors, their primary epistemological stance determines the metric they endorse to demonstrate valid knowledge.

Study population

In any study of volunteers, one major limitation is the self-selection of individuals. Are the study individuals from an atypical subset of C.P.R. participants, with sufficient personal emotional resilience or a need to tell their stories to a stranger? Although there was no doubt throughout the interviews that the primary motivation of participants was to shed light on what had happened to them and offer others a better preparation, a number of subsidiary motives may also have been at play. The initial interview was undertaken only a matter of weeks after Marjorie was involved in her traumatic resuscitation in a remote location. The events were still fresh in her mind, and on a personal level she may have been making sense of them, or indeed have been seeking a tacit form of emotional support through narrating her own events. Many of the other participants were recruited at roadshows; their motivation could have been due to peer pressure than a genuine desire to expand understanding or being altruistic. Several individuals, despite having interesting experiences to narrate and personal insights to offer, acknowledged being partially motivated by a

form of curiosity about the interview process itself and qualitative research in general.

The study population was quite heterogeneous in terms of age and gender and the educational institution that prepared them for their internship. However, the timeline variation between the events experienced and the narration of the older participants, means that, not only would the events be subject to the usual qualifications on narratives representing a personal and unverifiable testimony, but too, it must at least be open to speculation how trustworthy remain those accounts that are most historic (in particular, Anthony and Cornelius). It is possible that a different set of experiences, narrated by different participants to a different interviewer, would generate a perspective that is at variance with the findings of this study. This could however only be tested through attempts to repeat the study method, in different circumstances, with another interviewer, fresh participants, and perhaps using purposive sampling.

Researcher

Despite attempts to illuminate and categorise individual sources of prejudice or bias, an observer may judge that this was unsuccessful: that the acknowledged root motivation for the research represented little more than an unsubtle attempt to address some long standing effects of their own experience. There is no doubt that the vantage point for the researcher's perspectives has been under considerable scrutiny, especially during the writing of this thesis. However all researchers study that which they deem relevant and important; their personal motivation is only the starting point for the process. Through the maintenance of scholarly rigour, their process should withstand critical scrutiny, and so too should their findings and conclusions.

The appeal of the interview for participants may have been the current role and educational responsibilities of the researcher. Not only therefore would he have been credible interviewer, with a sincere interest in the interviews and possessing knowledge of the events narrated during C.P.R., but as a doctor, he would have been expected to have remained unfazed during the clinical stories. Axiologically, this researcher was not in any direct hierarchical relationship to the participants. And, as has been noted earlier, one major reason for the research is that the researcher is in a position to influence training of medical students. The benefits of improving how those coming afterwards are educated offered opportunities for genuine altruism. These personal factors of this researcher may therefore have facilitated recruitment and transparency during interviewing, rather than hindering it. Furthermore almost all previous researchers undertaking studies of C.P.R. experience have been located within the same clinical space (Tunstall-Pedoe et al., 1992, Cobbe et al., 1991, Graham et al., 1994 b, Graham et al., 1994 a), and, as indicated, some had strong, direct hierarchical links with their study participants (Ranse and Arbon, 2008).

Despite attempts to maintain and enforce academic rigour throughout, perhaps the most significant limitation is the influence of the researcher himself: this study was driven by the researcher. It is impossible to dilute the singular influence of the researcher during the interviews (where the primary data was generated). It was this researcher who: initially recruited the participants: interacted with, and put them at their ease; responded emphatically when distress surfaced; decided when clarity or sufficiency of participants' responses was achieved; judged when it was appropriate to change the direction in the interview and did this; decided when the interviews should conclude; and finally determined how to continue the interactions, informally, after the conclusion of the interview. One-to-one interviews generated single point-in-time data: unique to that interview; the interviewee; and the interviewer.

Recommendations for future work

There are a number of ways for the community of C.P.R. practice to respond to the data presented here, establish if it is credible, then test and extend the extrapolations proffered earlier.

Firstly, it will be important to establish whether the broad conclusions have any external validity, and can therefore be reproduced, or at least whether similar themes would emerge, within other communities of junior hospital doctors within different researchers, geographical settings, cultures and healthcare systems. It would be useful to attempt to triangulate this research with, for example, focus group research with larger clusters of participants. However one caveat to this future research would be to acknowledge the inherent dangers of *vulgar triangulation* (Coffey, 1996: 14), and to recognise that a one-to-one interview is a unique form of social interactions with unique properties. Whilst therefore this research has aligned for the most part with the existing body of understanding, any desire to complete the picture in a probative manner should be resisted. The one-to-one interviews and personal perspectives presented here complement the existing qualitative understandings: they add to its richness and complexity, rather than corroborate and establish an incontestable truth.

Secondly, whilst this research attempted initially to focus exclusively on junior doctors, it later admitted the perspectives of senior clinicians. It would be interesting for the focus group work of novice nurses (Ranse and Arbon, op cit.) to be replicated with more mature nursing colleagues. Of more importance however would be recognise that a major methodological concern of that research, one-to-one interviews, has been addressed here. Therefore, one significant recommendation would be to extend the one–to-one interview process pioneered here, to other clinical intervention staff. Two groups suggest themselves for a more detailed and in-depth gaze:

- Newly qualified nursing staff are placed in the position of initiating the code Blue call. A one-to-one interview process could offer additional insights beyond that generated using Ranse and Arbon's focus group inquiry. It would also be important to interview junior nurses in a similar axiologically neutral manner to this study.
- Whilst Harriet's perspective was included for completeness, those of the other four medical students interviewed were not. It would be interesting to analyse these and add further experiences of other medical students. It would be instructive to look at: those who had not yet seen any C.P.R., and were share their apprehensions and expectations; and those who had seen C.P.R., and were making sense of this.

Thirdly, when considering future research a suitable sociological frame should be identified. It would also be interesting for other researchers to re-analyse their data against the framework of Symbolic Interactionism. It may also be equally useful for this researcher or other researches to use different frameworks to determine whether fresh insights of this existing data would be uncovered using an alternative sociological approach. This would apply equally to alternate learning theories and philosophical approaches.

Fourthly, it would be important to determine whether the events narrated within this study (and for that matter within the trial study) have genuine and enduring effects on an individual's professional or personal life trajectory. C.P.R. events here, and the trial study's *best and worst days*, were clearly expressed in emotive terms. The way they are narrated usually matched how they were initially and personally experienced. Unless therefore, they were subjected to a critical reflective by a trusted other (see Henrietta's almost singular example of a detailed and dedicated debrief), then this initial experience was retained as the true record of the event.

Their personal expectations of what they should do, and the standards they should aspire to are often benignly moderated during supervised C.P.R. For some however, their behaviour falls below their own expectations; how they make sense of that experience is then highly personal. For others, even though their own conduct is unquestioned, the emotional challenge of witnessing C.P.R. in a very up close and extremely personal manner, remains a powerful memory, the long-term effects of which are unknown. What this means for the ultimate career, self-image and identity of the clinician is unclear. While emergent concepts of emotional indebtedness (Simon, 2016), the formation of a professional identity, and the acknowledged tensions within professionalism between self-care and care for the patient (Wilkinson et al, 2009) are currently debated, and are an ethical justification for engaging with individuals, it is not known whether the enduring influence of emotionally experienced events will prove amenable to change.

Finally, research should be undertaken to look at the best model of active leadership within the C.P.R. team itself. One important issue is whether leadership responsibilities should extend to formal teaching in addition to the active management of the arrest itself. This would address how team members, but especially those novice members on the periphery of the team, are processing the event itself. It would research ask a formal debrief should be more actively undertaken to uncover those struggling to make sense of what they have experienced. It is unclear whether such a formal process would add to the *ad hoc* sense-making that occurs over time as this is heavily dependent on a number of personal characteristics (including informal social support networks). Whilst it is clear that team members may inwardly be struggling emotionally it is unclear how they should be supported and by whom. If further research confirmed that active formal support and debriefing offered significant long-term benefits to the individuals involved, then the skill set and mentorship responsibilities of team leaders at C.P.R events would need to be rethought. At a minimum, leaders should be capable to recognizing those events likely to produce distress and to be able to identify individuals in silent distress. Whether leaders then offered complex reframing or referred the individual to others

would be a separate matter. A simple acknowledgement of emotional distress and the offer of early emotional support would however still be worthwhile.

CHAPTER 8: PERSONAL REFLECTION

On First Looking into Chapman's Homer

Much have I travell'd in the realms of gold,
And many goodly states and kingdoms seen;
Round many western islands have I been
Which bards in fealty to Apollo hold.
Oft of one wide expanse had I been told
That deep-browed Homer ruled as his demesne;
Yet did I never breathe its pure serene
Till I heard Chapman speak out loud and bold:
Then felt I like some watcher of the skies
When a new planet swims into his ken;
Or like stout Cortez when with eagle eyes
He star'd at the Pacific — and all his men
Look'd at each other with a wild surmise —
Silent, upon a peak in Darien.

John Keats (1795-1821)

At the end of the doctoral process, though it will be judged externally for summative credentialing, the main judgement will be an internal one, of the transformation of self and inner perspectives (Mezirow, 1981) experienced by the researcher. He alone can determine if the learning gained within doctoral journey has been a good use of personal time and resources. The worth-to-self of the process will be most visibly explicated in the personal reflections discussed here. The choice of what to reflect upon is one area where the author may be accorded personal freedom to choose both the content area for reflection and what they have learned in the process (Grundy, 1982, Boud et al., 1985).

A major danger during reflection is that of a weak *apophany*, *patternicity* or *agenticity*: the mistaken attribution of abnormal meaningfulness (Shermer,

2008). In an avid search for substance and significance, the temptation to find meaning may result in loose connections being conceptualised as being stronger or more consequential than they are in reality. It is unclear however if there is any specific behaviours that can be invoked that will guard against this. With this caveat, a general discussion (below) will be offered followed by two specific areas of transformation, namely:

1. The researcher's personal odyssey: a personal account of the thesis journey, including the significant new understandings and influences in orientation to the world. This will reference some of the images in *On First Looking into Chapman's Homer* (Keats, 1884) during this doctoral journey. This poem, read many times in this doctorate, encapsulates the feelings, and fluctuating state of mind, at various times throughout the last few years.

2. Reflexivity versus narcissism: an interrogation of the reflexive discourse with reference to the interplay with one's inner self, and the potential for corruption by an unconscious narcissism.

General Discussion:

Transformation as writer has been two main areas: one is on the imposition of discipline on self; the other has been on enhancing the quality of academic discourse and technical growth in prose construction.

During the writing of this thesis, the discipline that was most difficult to enforce most was a capacity to restrict gaze: to focus on depth of knowledge; and to make existing linkages as relevant, strong and interwoven as possible. There remains a tendency within the researcher to sample widely, to present a rich broad picture, but one with less granularity. Focussing has meant not only delving deeper to unearth connections that demonstrate higher order thinking,

but also active pruning of less directly related concepts that would have resulted in the dilution of gaze. In effect, this has meant to become a *watcher of the skies:* one able to differentiate *when a new planet swims into his ken,* from a fleeting passing object, less valuable, and less rewarding to investigate. Enforcing this discipline on self has been a challenge throughout; like most skills continual reinforcement is necessary.

A distinct act of discipline was needed with respect to the trial study. Quite unexpectedly, the biggest obstacle presented by the trial study was diversion from the goal of main study project completion. The theme of *best and worst early day* **p**roved to be a more interesting, revealing and richer topic than anticipated. The data was presented at the 5th International Clinical Skills Conference at Prato in 2012 (Barton, 2013); a number of fellow researchers have discussed it since. It was very encouraging to discuss the early analysis of the data and what it could suggest, even with the caveats on the study size of six participants and its limited generalisability. From the start the trial study offered fascinating insights into the lived experience of mature and highly respected clinicians. There was a distinct attraction during this study to concentrate on it, and to open it out beyond its pilot phase and generate a substantive study in its own right. One hard discipline within this dissertation was, very reluctantly, to let go of the trial study.

At the start of the doctorate, one important piece of feedback of academic writing was that the reader was asked to make too many linkages for themselves. The results are that conscious attempts are now made to present arguments in a logical and coherent sequence within any given piece of writing. Despite the practice that the writing of this doctorate has afforded, chapters or large sections of text are not structured as well as desired. The process of critical thinking, and its export into writing, remains organic. Despite a desire to write from the beginning in an organised manner, using an elemental structure to scaffold substantive writing, ingraining this behaviour has proved elusive. It must be evoked deliberately in conscious thought. The writing method continues to be an organic one where thoughts are disgorged in a

haphazard manner. This is followed by cutting and pasting paragraphs within the text to strengthen intellectual connections and to improve meaning. It remains a disappointment that a better praxis of deliberate alignment of coherence, through concerted initial planning has not developed. Constant critiquing and tinkering, although inefficient, seems the best way to marshal and present thoughts.

At the start of the doctorate personal written prose was clumsy, inarticulate, poorly punctuated and often overcomplicated. Several text books offered guidance on rules and accepted norms (Trask, 1997, Parkinson, 2011, Fowler, 2015). To facilitate writing this doctorate, a personal working set of punctuation rules was abstracted, guided by Trask in particular. This has resulted in an improved focus on coherence and comprehensibility, and an enhanced ability to identify poor grammar. The tendency to write overcomplicated prose remains, though revision is more acutely performed now with this in mind. Punctuation will always be a work in progress.

1. Researcher's personal odyssey:

On First Looking into Chapman's Homer, exemplifies the power of great art to stir emotionally those who experience it. It describes an epiphany undergone by the poet John Keats whilst reading Chapman's translation of Homer's Iliad. Keats likened this revelation to that which transfixed Cortez, who was mistakenly identified in Keats' poem to be the first European beholder of the Pacific Ocean. The literature review was the section of the doctoral thesis where the relationship to Keats' poem was most keenly felt. This was *the most serene of times; the times of most wild surmise*.

Though each line in the poem quoted has meaning, several in particular have captured the essence of the doctoral journey, and mark personal epiphanies. Sometimes the experience was of having *travell'd in the realms of gold*. This

was most pronounced when reading new ideas during the literature appraisal of Open Studies One (O.S.1.). Sometimes, especially at moments of epiphany, there was a sense of breathing *its pure serene*. The most serene moment was on first encountering *Horizontverschmelzung,* or *Fusion of Horizons,* (Gadamer, op. cit.). *Horizontverschmelzung* has had a profound and liberating influence. In section two below, personal inclination to, and ready acceptance of, *Fusion of Horizons* will be discussed. The research began with demonstrating the understanding that this researcher's personal horizons were inherent in how his gaze and focus was constituted. It has ended with an understanding that an important aspect of the participants' narratives was their construction of their unique, individual historically effected consciousness.

Sometimes readings have caused me to be "*silent*": especially when personal understandings and conceptual frameworks were being stretched. I had been aware of the sociological framework of Symbolic Interactionism (Mead, op. cit, Blumer, op. cit., Charon, op. cit., Aboulafia, op. cit.) prior to the thesis, but this was superficial. It has been explored more deeply during the thesis, and is now deployed throughout life; it offers a sociological interpretation of meaning of experience that sits just below consciousness. It surfaces, almost unbidden now: in professional work when helping patients look at their domestic, work related, or professional relationships; when relationships are growing or forming; or when, in personal dealings with others, when experiencing dissonance. Through this study this researcher has, in effect, become a Symbolic Interactionist.

The inclinations to both Gadamer and S.I. will be discussed further in the section of Reflexivity versus Narcissism. In addition to Gadamer, Mead and Blumer, this research has embraced a feminist stance influenced by a group of feminist writers, most notably Oakley (1981), Gilligan (1982), and Noddings (1984, 2005). Germaine Greer began a personal journey into feminism: the Female Eunuch (Greer, 1970) was read in 1974, when the researcher was aged 19. Her book has

exerted a seminal influence on my life[13]. And too sometimes there have been struggles with other feminists. This researcher has ultimately been unable to assimilate or accommodate the perspectives of one respected figures within the feminist world favoured within the taught components of this doctorate: M. C. Nussbaum. Her world perspectives and her interpretation of experience have remained elusive and beyond grasp, c.f. her understanding and exposition of the "heedless danger" (Nussbaum, 1999: 75) of Noddings' sleeping child and their subsequent contrary positions. One major attraction of Noddings is her orientation within the ethics of caring, which is a natural fit with this researcher's profession of Family Medicine specialist. When she writes therefore, her feminism is grounded in a location that is not alien, and does not require a radical adaptation. As stated earlier, one's secondary choice of feminists is likely to be as influential as primary advocacy for its political stance.

And too, sometimes there have been moments, like the Spaniards soldiers led by Cortez when they first encountered the vastness of the Pacific Ocean, of *wild surmise*. This was usually when feeling overwhelmed by the enormity of the task(s) ahead. Whilst there were a variety of reasons for these temporary panics, not infrequently, they related to intellectual choices yet to be made. This was most keenly experienced was in the area of formal philosophical selections in the matters of: ontology (realism or idealism); philosophical hermeneutics; epistemology; symbolic interactionism; and learning theories. Once these decisions were made so, too, was progress; the next steps often fell into line easier than originally anticipated.

2. Reflexivity versus narcissism

Awareness of reflexivity and its centrality to research, especially qualitative research is at the heart of this research. In Chapter 1 (Introduction), a reflexive exposition was undertaken to uncover the potential forces within me (and my

[13] This assertion may be an unacceptable oxymoron

orientation to the world) that could sway personal interpretation and judgments. Within that exposition, and in the subsequent writing of this particular chapter, the debate between the qualified academic benefits to an external audience of such a process, as against the risks to the researcher of intense reflection (or as experienced herein, a state that is almost bordering on narcissism) remain unresolved.

According to legend, the youth Narcissus was enraptured and self-absorbed by his own beauty. Disdainful of others, and their opinions, he was punished by the god Nemesis, through being shown his own reflection in a pool of calm water. Unable to look away from his own image or reflection, there, beside the pool, Narcissus perished; a warning to all of the seductive dangers of introspection. For this researcher, at its best, the reflexive process has had two positive influences: one is a personal heuristic; the other as a benign intellectual spider.

As a personal heuristic, the reflexive process would be like peeling an onion: as each exposure has occurred, a new inner layer has been uncovered. Disclosure has therefore exposed a previously unknown underlying surface (or inner self) to self. From Symbolic Interactionism, each peeling has exposed a new "Me" for my conscious "I" to interrogate. The other benefit has been that, during this uncovering process, unplanned effects were experienced in other areas. This has resulted in the strengthening of internal mental webs: as a spider spinning additional cognitive linkages or strengthening existing connections. Sometimes however, its effect has been experienced in a more organic sense. New insights into self or personal orientation in one area have resulted in growth in other areas: as one area grows, so too unexpectedly do others, influenced by these new insights. Deliberate reflexive activity, for example during the formal choices within the components of paradigm identification and justification, have both reinforced existing connections and promoted growth in other areas.

At its worst however, the reflexive discourse has felt worryingly too self-obsessed. It has been difficult to be objective about one's own subjectivity; it

has been difficult to avoid the perils of autopoieticity (McGann, 1991). Autopoietic systems are those designed to self-replicate, as distinct from Cartesian, allopoietic systems that produce other than themselves: blind loop reflection and thus reinforcement is difficult to guard against. And too, in seeking to critically expose the biases of personal prejudice (Hertz, op. cit.), there is a risk of being viewed as either self-indulgent or self-obsessed. In either event, external judgements about objectivity are adversely effected.

Despite the adoption of standard research behaviours, there were a host of personal choices that made this process a solo inquiry. During recruitment and interviewing, the researcher validated the participant's responses: verbal responses were unique; body language was unique; the trust inspired was unique; and the bond that enabled the participant and the researcher to negotiate meaning was unique. Personal interactions determined what was generated; both sets of individual horizons were in play throughout.

This study intensified an existing internal debate about the independence of the researcher, for I cannot remove myself from the interview process. The researcher is "me", who studies things his own way, from a perspective that is *Wirkungsgeschichtliches Bewußtsein,* a historically effected consciousness, (Gadamer, 1975: 312). As stated earlier, to offer true hermeneutic reflection demands uncovering one's own present life interpretation: one must unpack one's inner self or selves. What the undertaking of this reflexive account has uncovered, is a potential corruptive influence of this striping bare of motivation and inner self.

Undertaking personal reflection is a recognised part of this researcher's clinical life. In modern medical practice, doctors are encouraged to maintain a reflective log of their activities and to turn their clinical experience back on themselves. The calibration of external others is however important here. These personal aspects of the researcher do not invalidate the reflection, but may offer calibration on why it has been undertaken in the manner it has.

Reflection may have become natural or conditioned within this researcher as part of this professional process.

It is however questioned here whether this stripping is totally without effect for the self that is interacted with. Although the intention of the reflexive challenge is to surface the underpinning assumptions, biases and prejudices that determine one's gaze, it is a behaviour, the consequences of which, on the individual, are unclear. Though such personal exposure may surface aspects of the self to the self, from the experiential learning employed here, the resultant effect of learning on the individual can vary from reinforcement at one end, to genuine change at the other (Jarvis op cit.: 59). The process of self-reflection, like other human actions, may not therefore be consequence-free; some of these unintended consequences may result in unconscious reinforcement, rather than genuine challenge to the status quo.

What has also been questioned during the writing of this reflection is the ease of accepted alignment with Symbolic Interactionism and Philosophical Hermeneutics: on a fundamental level why did these concepts resonate so profoundly? Both fitted readily and were easily assimilated (Kolb, 1984) into the researcher's world view: there seemed to be almost no struggle. Perhaps it is no more than what has been warned of already by Lippman (1922: Chapter VI), who was a key influence on Blumer: "we pick out what our culture has already defined for us", because "people define first and then see". As they were experienced, the works of Hans-Georg Gadamer and Herbert Blumer have offered more than enhanced insight; they offered integration or a weaving together or inter-splicing of several disparate threads that constituted one's grasp of the world. They allowed further organisation of thoughts; more things cohered, aligned and seemed to be in balance; and the world view felt more robust and richer. There was an enhanced sense of internal consistency to my world critique; it has been positively strengthened.

However, a converse to this position is also possible: that from the Jarvis learning theory (op cit: 59), the researcher has unknowingly assimilated that which consolidated or reinforced their existing world view. Earlier in this chapter, the pervasive influence of Symbolic Interactionism upon the researcher's current thinking was acknowledged. It is doubtful if its influence can now be redacted. This process of assimilation began during the trial study. Mid-way through the interviews it was realised that S.I. had become part of how I think and speak when making sense to myself and others about the world that is experienced. Its influence is as important as that which formal religion had. S.I. does not possess an ethical code or set of values; it is not a personal creed. Yet, at the same time, both consciously (and possibly unconsciously) life is now refracted through an S.I. lens. The clarity and consistency of understanding of the world offered are a natural and comfortable fit. Unfortunately however, such confirmatory experiences may be nothing more than internal mollifiers: integration may be simply the reinforcement of prejudice, not a challenge to its basic assumptions. Easy assimilation may not be benign.

There is however a new middle way of understanding this that is based on modern understanding of cognitive neuropsychology, taken as it is from the effects of brain injury on human ability to make decisions. Modern imaging techniques, for example Magnetic Resonance Imaging (M.R.I.), have discovered that the emotional centres in the brain communicate profoundly with its cognitive centres; essentially it is impossible to abstract emotions from decision making. The evidence from many complex studies of brain injured patients shows that when the ability to attribute value within a decision is removed, so too is the ability to make any meaningful consequential judgements: the capacity for effective decision making is frozen. This perspective asserts that the Cartesian separation of mind and body is an unnatural and incorrect one (Damasio, 1995): conscious and deliberate Cartesian separation is theoretical and undesirable, for it renders the decision maker impotent, unable to choose between competing, emotionally generated, values.

This model of thinking about decision-making was outlined by the eminent neurologist Antonio Domasio in his seminal book "Descartes Error: Emotion, Reason, and the Human Brain" (ibid). There is a neural basis for the self that contains cognitive and emotional inputs. In a radical reformulation of how humans think, modern brain imaging challenges acceptance of a new reality: our brains operate axiologically in concert with our conscious rationality. There is a continuous, complex interchange between the two that is intimate and comprehensive. This interchange is not merely symbiotic; it is a fundamental pre-requisite for the full functioning of human decision-making capabilities. Though its operation is hidden from us, one part cannot operate without the other.

According to Domasio, the emotional contribution to our decision making is ineradicable. These modern insights thus align with the philosophical position advocated by Gadamer and his concept of *Wirkungsgeschichtliches Bewußtsein;* they offer a Natural Science (*Naturwissenschafen)* basis for human decision making that runs in parallel with its Human Science (*Geisteswissenschafen*) counterpart. The best we can offer is a ruthless critique about why we feel the way we do, and attempt to understand how our emotions have arisen and continue to influence us the way they do. This is one of the key self-disciplines required of Philosophical Hermeneutics:

> *"to bring about this in a regulated way is the task of what we call historically-effected consciousness"*
>
> (Gadamer, 1975: 317)

In undertaking the trial study the researcher moved beyond theoretical discussions of reflexivity and into a direct consideration of self as a researcher and his own conduct during the interview process. Earlier in Chapter 1 (Introduction) a question was raised about why such an inquiry method was chosen. It was speculated that there were some deeper aspects of the researcher that reflected unique perspectives (the "I' that chose being the

fusion of the multiples of "Me), rather than the post hoc justification offered once the internal emotional decision had been reached.

It is relatively easy to learn the basics of a performance skill or sport; it is rare to become adept or an expert at it, when one's heart is not in it. This need for an emotional balance means that decision making and inner values must be at peace. It is counter-intuitive to suggest that a research frame would be chosen where the researcher was uncomfortable, for to do so would mean in effect constant bickering or unhappiness with one's inner self. Such research would require continual recalibration of the study as instincts would potentially pull the study from a forced and unnatural path.

In conclusion it may be that complete honesty, an awareness of the self and the dangers of autopoiecity, are the best that can be achieved, for to recognise the imperatives of *historically-effected consciousness* is not the same as removing their influence. At best this would encourage, to echo current trends in mindfulness thinking, mindful research. Like all mindful praxis, mindful research requires mindful practising. The starting position for this is however that an individual's emotional make up (determined as it is from personality and memorable experiences) inextricably influences their choices. Interpreting and understanding self, and what constitutes one's own perspectives, is the start to interpreting and understanding the world; this view can only ever be a view from "I', which is composed of all of "Me".

In explicating this sense of where the researcher's gaze is grounded, at times the process has felt highly self-critical. One final caveat to reflection recognises that while awareness of self to self requires brutal honesty, what is uncovered must be respected. If the individuals acts towards external "others" dyad with respect (Mead, 1934), then the other internal dyad (the inner "Me") must too be treated respectfully. In the process of this uncovering, there exists therefore an ethical responsibility to respect the person uncovered. Self-critique can easily turn to harsh self-criticism, the polar opposite of narcissism.

Navigating a path between the two extremes consequences of reflection may be analogous to the extreme challenges faced by Odysseus on his journey home. To follow the metaphor of a personal odyssey invoked earlier in this chapter, if the researcher navigates too close to Narcissism then they risk being sucked down the whirlpool of Charybdis, and if the path is too close to Self-Criticism, Scylla, the six-headed monster, awaits.

CHAPTER 9: CONCLUSION

This study has looked at the lived experiences of a variety of doctors, undertaking their first CardioPulmonary Resuscitations. Despite the acknowledged difficulties in recruitment, two thirds of those interviewed (eighteen participants) were young clinicians (age < 30 years) and only two were aged over 40 years. Their firsthand accounts were narrated in one-to-one interviews, a novel approach to data gathering within C.P.R. research. The possibility of using one-to-one interviews to gather unique and individual perspectives has been established.

The difficulties encountered in data collection were primarily around access to young clinicians willing to be interviewed, rather than their reluctance to be interviewed per se; regardless of this, it is undoubtedly challenging to narrate such stories. In this study, participants freely narrated sometimes disturbing and sometimes routine resuscitation events from their early professional life. As far as could be determined, they did not require specialised post-interview counselling.

The accounts narrated were analysed to inform the four previously stated major research questions. For questions 1,2 and 4 this analysis was fundamentally a descriptive one, for question 3 (Symbolic Interactionism) it was a limited abstract one, albeit at a low level of the National Centre for Social Research (U.K.) analysis hierarchy adopted here (Spencer et al., 2003: 212). The analysis used the learning theories of Peter Jarvis (Jarvis op. cit.). The Philosophical Hermeneutical perspective of Hans-George Gadamer has been consciously invoked in the dialogue; his influence within the researcher's perspective has been critiqued in the presentation of his historically effected consciousness.

A strong finding was that, once they had direct personal experience of undertaking C.P.R. (usually chest compressions), almost all junior clinicians were

relieved to note that they were well prepared for undertaking supervised participation in C.P.R. Participants considered the majority of their C.P.R. preparation was appropriate. Thus, from a technical skills and clinical knowledge perspective, they were adequately equipped to deal with the event. Furthermore, they would gradually integrate their entry into the resuscitation team as their experience and self-confidence grew. Almost all junior clinicians however felt that their current preparation emphasised unrealistic levels of responsibility that were very rarely encountered.

This anticipation of higher levels of decision-making and clinical responsibility than encountered in reality has been speculated within this research to contribute, alongside the sustained broadcast entertainment media (TV and films) representations of unrealistic successful outcomes, to the reported anxiety of medical graduates in meeting C.P.R. in early clinical life (Duns et al., 2008). Initially, young doctors will not necessarily have the lived clinical experience against which to titrate their own expectations of personal conduct. It may however simply be the case that the importance of the topic to junior doctors will remain regardless of preparation:

> *I do think that C.P.R. is, you know, is the most immediate….the most important thing we can do.*
>
> (Elizabeth)

During the conduct of the interviews, wide emotional variation (positive, negative and surreal) within their experiences was identified. Several reasons for negative emotions were identified: most notably, these were proximity to the patient (patient age alignment between the doctor and patient, prior care knowledge of the patient, and proximity to the patient's face during resuscitation). In this study, granularity was enhanced around those "ambient" aspects, which other researchers have previously identified as influencing adversely the milieu in which C.P.R. is experienced. This research has recommended that careful consideration of such circumstances may enable supervising clinicians to anticipate which of the junior staff in their care may

benefit from a targeted offer of support, post C.P.R. The development of each participants' historically effected consciousness was displayed in their accounts; limited normalisation would be one aim of mentoring post C.P.R.

One practical goal of the research was to determine whether the lived experience of young clinicians could inform the preparation of those following after them. Although some of the experiences of C.P.R. could be included with a modest revision of C.P.R. rehearsal, some others are not readily practised, and may require a separate process to address them. Such simulations should include suitable "ambient" environmental aspects and address social dynamic considerations, for example team working or being led by an experienced other.

During simulated rehearsal, it may be of value to make individuals aware that, in addition to the negative states expected to be encountered during conditions of clinical duress, other states may also be experienced. Positive emotions (for example "excitement"), were expressed here in a more heightened state than previously acknowledged in research, where they related to satisfaction at a job that was, from a technical standpoint, well done. Young clinicians here were more comfortable admitting to being satisfied; they were uncomfortable discussing elated states, and whether these were justified.

Experience of states of surreality within this research was also encountered in greater detail than that reported in previous studies. This was an area where the perspectives of Symbolic Interactionism and the Experiential Learning Theory of Peter Jarvis were deployed to rise above descriptive accounts reported earlier and offered an abstract conceptualisation. Modest speculations were made regarding its possible causes: it has been suggested that this surreality may reflect an emotional disconnection in the young clinicians as they processed their experience. This experience was interpreted as calibration of how to behave as a mature clinician. Personal stoicism (carrying on immediately with the next task), and its relationship to emotional detachment during adverse

events, were particular aspects that young clinicians noted in respected mature practitioners.

Finally, and responding to an agenda that emerged during the telling of their stories, participants discussed a mixture of personal needs after traumatic resuscitations. For almost all participants their most immediate requirement was for trustworthy and non-judgemental emotional support. This could be from a family member, or a fellow junior clinician, or an empathic senior. Unfortunately this research also confirmed what others studies (Page and Meerabeau, op. cit., Ranse and Arbon, op. cit.) have shown: immediate help is only offered to individuals who self-identify as being distressed.

Within the trial study, and particularly from the perspectives narrated by the older clinicians within this thesis (for example, Chloe and her account of being "scarred"), witness of memorable events from early clinical life exerted an effect on how clinicians perceive themselves as they mature: their stories may be understood as their construction of an inner self or identity. To attribute enduring significance to a single event in the creation of a unique horizon from one episode of C.P.R. is a dramatic claim. Yet, acknowledgement is appropriate for single events which are experienced in states of deep emotion (positive and negative) and subsequently discussed in highly emotive terms.

From the trial study and the elder participants here, early events were never forgotten, nor were the complex feelings of inadequacy or failed responsibility that remembrance re-awoke. Despite the passage of many years, these clinicians discussed highly dramatic events from their early clinical life: the events narrated were unambiguously expressed in emotive language. The analysis of these accounts showed that they contained highly personal meanings, generated at the time of the event(s), and furthermore that these meanings had remained fundamental to how the events were both recounted and understood to the present day.

Both the trial and main studies suggest that unique processing of relatively similar experiences is undertaken to understand what had happened. Following on from the recent work on brain imaging (Damasio, op. cit.), there can thus be no simple clean Cartesian *a posteriori* rationale at play. Human being code cognition about significant events with emotions: emotions attribute value. The determination of importance is via the emotional centres, not the logic centres. When individuals assign value to any experience, the emotive and cognitive aspects of how, internally, they make sense of it are inextricably linked. The formative effects of these experiences are profound and enduring; a deep emotional dimension is not merely experienced at the time, but, more importantly, shapes the long-term learning about, and thus the consequences of, what ultimately become memorable clinical experiences.

The accounts in this study thus mark one thread of an individual's personally constructed and conditioned historically-effected consciousness; they are truly seminal. Junior clinicians know they learn from their experience. Hugh noted: "Yeah, you sort of just have to learn from experience. It's really just one of those things you get with experience as you make a walk through life". The use of a Philosophical Hermeneutical perspective suggests that, during these events and the subsequent symbolic processing of their experiences (both consciously during active narration, thorough their "I' with "Me" reflection), and unconsciously over time), junior clinicians are actively forming their own unique horizons: they are developing their own unique and often unchallenged historically effected consciousness.

Whether deploying the perspectives of Philosophical Hermeneutics would add value to a therapeutic interaction between those undergoing the experience and their supervising mentors, is beyond this thesis. It is not known if formal attempts to normalise experiences would reduce emotional indebtedness (Simon: 2016) and promote a more sustainable self (Wilkinson et al, 2009). The long-term consequences of unchallenged memory, and what this means for the individual, are unclear. During their narratives some individuals describe their experiences and their judgments of their own selves in ways that seemed overly

harsh. Substantive counselling should be conceptualised around information sharing to improve specific contextual understanding, immediate listening to offer emotional support, and promotion of normative understandings to assist perspective reframing. The formation of an appropriate professional identity and the promotion of a balanced self-caring self would be an important outcome (Wilkinson et al, ibid). Given the emerging concerns about emotional indebtedness and long term effects of injurious events in clinical life, the continuance of a "John Wayne" ethos remains problematic for modern novice medical practice.

Final thoughts

This doctorate has used the analogy of mining and much of that representation has proved accurate, influential and beneficial. A further analogy used was that of constructing a telescope, which aligned with the thinking of Nagel (1989, op. cit.) on a foundational platform from which to view the universe. Within this telescope there are a variety of lenses or internal structural components. Each was selected for its individual properties: Philosophical Hermeneutics; Symbolic Interactionism; Peter Jarvis' Experiential Learning Theory. Within the instrument itself, this researcher, they have been melded into a common instrument which has interrogated the phenomenon of the C.P.R. experiences of junior medical clinicians. Each has added perspectives that have complemented each other throughout: their relationship to each other is not merely additive but symbiotic.

The selection of the individual lenses, and the way they have been combined to interrogate the accounts, is both personal and unique; they have been fused into a unique and singular perspective. Other researchers however, using other combination of lenses, would generate equally valid, alternate, and potentially competing perspectives. They will necessarily invoke their own biases and prejudices and make their own determinations, for, as Nagel would contend,

they too cannot take up a view from nowhere (ibid). Where they are sited will influence their interpretation and attribution of value or credibility.

Philosophical Hermeneutics (Hans-Georg Gadamer) has been invoked to identify and justify the researcher's particular "horizons". There has been discussion on how the researcher's past as a junior clinician undertaking C.P.R. in 1977, in the R.A.I., in Paisley has been influential. It must be acknowledged that such a critique, whoever thorough, is always limited. Knowledge of self is fundamentally inchoate:

> *To be historically means that knowledge of oneself can never be complete…for (Author's insert)…All self-knowledge is historically given.*
>
> (Gadamer, 1975: 313)

This inquiry was begun in an open manner, and followed specific advice to possess and display *an open but not empty mind* (Janesick, 2000: 384). Francis Bacon stated that: *"If a man will begin with certainties he shall end in doubts; but he will be content to begin with doubts then he shall end in certainties".* This researcher began with substantial doubts; unfortunately, few of them seemed to have been genuinely assuaged. From a post-modern ontological stance, some doubts have remained and will multiply. Questions will continue to breed more questions: resolution will never be achieved. No single version of reality will exist. The human hold on reality continues to be subtle (Hammersley, 1992), if not indeed slippery, and requires persistent and significant human endeavour; the hold is never more than tenuous, and always personal.

Chapter 10: APPENDICES

Appendix: 10.1. Recruitment poster

Recruitment for a qualitative study

My first experience(s) of C.P.R. as a young doctor

International research, usually near graduation, has shown that the young doctors are very worried about having to perform C.P.R. in real life. Whether your early experience was positive or negative, whether you were unsupervised or were part of a team, whether things were done in a standard manner or (like the picture below) in a less standard manner, this research study wants to learn from you and your experience. It is hoped that this research will directly inform the preparation of current medical students.

Can you spot the mistakes?

Recruitment criteria:

- You have recently taken part in C.P.R. and are willing to discuss your experience of the event and your understanding of it and your preparation for it.
- You are a doctor who has qualified within the last 3 years.
- You would be willing to take part in a face to face (1:1) interview (30 to 40 minutes) with the researcher, Dr Peter Barton, of the Department of General Practice, Monash University, at a venue of your choosing, probably your workplace.

Can you spot the mistake?

The research offers no extrinsic reward (**beyond the identification of the three errors from the cartoons**) for the interview. Intrinsically you are uniquely placed to help those following behind. All stories are important.

Researcher: Dr Peter J. M. Barton Telephone: 0430 375 753 (mobile) Email: peter.barton@monash.edu **Telephone: 99024450**

Appendix 10.2 Ethics consent: University of Glasgow

University of Glasgow College of Social Sciences

Ethics Committee for Non Clinical Research Involving Human Subjects

EAP4 NOTIFICATION OF ETHICS APPLICATION OUTCOME

Application Type: New
(select as appropriate)

Application Number: EA1861
Please add R to the end of the application number if this review is for a resubmitted application.

Applicant's Name: Peter Barton

Project Title: Main study: "Early attempts at CPR": Reviewing how novice clinical practitioners make sense of their first experiences of undertaking Cardiopulmonary Resuscitation

Date Application Reviewed: 07/03/11

APPLICATION OUTCOME

(A) Fully Approved
(select from drop down as appropriate)

Start Date of Approval: 11 March 2011 ***End Date of Approval: 30 January 2013***

If the applicant has been given approval with amendments required, this means they can proceed with their data collection, with effect from the date of approval. The College Ethics Committee expects the applicant to act responsibly in addressing the recommended amendments. **The amendments should be submitted to the Research Office** for completion of the applicant's ethics file. An acknowledgement that all requested amendments have been made will be made within three weeks of receipt.

(B) Application is Not Approved at this time ☐
Please note the comments below and provide further information where requested. The full application should then be resubmitted to the Research Office via e-mail to Terri.Hume@glasgow.ac.uk.

(C) Select Option
(select as appropriate)
This section only applies to applicants whose original application was approved but required amendments.

Major Recommendations

Not applicable.

Minor Recommendations

Not applicable.

Please retain this notification for future reference. If you have any queries please do not hesitate to contact Terri Hume, Ethics & Research Secretary, in Room 104, Florentine House, 53 Hillhead Street, Glasgow G12 8QF.

University of Glasgow
College of Social Sciences Research Office
Florentine House, 53 Hillhead Street. Glasgow G12 8QF
The University of Glasgow, charity number SC004401

Tel: 0141-330-3007
E-mail: Terri.Hume@glasgow.ac.uk

Appendix 10.3 Ethics consent: Monash University

MONASH University

Monash University Human Research Ethics Committee (MUHREC)
Research Office

Human Ethics Certificate of Approval

Date:	**12 October 2011**
Project Number:	**2011001530**
Project Title:	**Novice practitioners experience of Cardiopulmonary Resuscitation (CPR)**
Chief Investigator:	**Dr Peter JM Barton**
Approved:	**From: 12 October 2011 To: 12 October 2016**

Terms of approval

1. The Chief investigator is responsible for ensuring that permission letters are obtained, if relevant, and a copy forwarded to MUHREC before any data collection can occur at the specified organisation. **Failure to provide permission letters to MUHREC before data collection commences is in breach of the National Statement on Ethical Conduct in Human Research and the Australian Code for the Responsible Conduct of Research.**
2. Approval is only valid whilst you hold a position at Monash University.
3. It is the responsibility of the Chief Investigator to ensure that all investigators are aware of the terms of approval and to ensure the project is conducted as approved by MUHREC.
4. You should notify MUHREC immediately of any serious or unexpected adverse effects on participants or unforeseen events affecting the ethical acceptability of the project.
5. **Complaints:** The researchers are required to inform MUHREC promptly of any complaints made about the project, whether the complaint was made directly to a member of the research team or to the primary HREC.
6. **Amendments to the approved project (including changes in personnel):** Requires the submission of a Request for Amendment form to MUHREC and must not begin without written approval from MUHREC. Substantial variations may require a new application.
7. **Future correspondence:** Please quote the project number and project title above in any further correspondence.
8. **Annual reports:** Continued approval of this project is dependent on the submission of an Annual Report. This is determined by the date of your letter of approval.
9. **Final report:** A Final Report should be provided at the conclusion of the project. MUHREC should be notified if the project is discontinued before the expected date of completion.
10. **Monitoring:** Projects may be subject to an audit or any other form of monitoring by MUHREC at any time.
11. **Retention and storage of data:** The Chief Investigator is responsible for the storage and retention of original data pertaining to a project for a minimum period of five years.

Professor Ben Canny
Chair, MUHREC

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ABN 12 377 614 012 CRICOS Provider #00008C

Appendix 10.4 Additional Nodes and Sub-Nodes

Interview	Node added	Sub-node added
Marjorie (1)	*Location*	*Rural or city*
	Consequences	*Failures or success*
	The TV/Media alignment	
	Improvements existing node	*Psychological* (emotions) *Environmental* (chaos, smells or noise).
	Professionalism	*Stoicism* and *Self as clinician*
Eric (2)	*Symbolic Interactionism* existing node	*Self-expectations*
	Emotions was added as a major separate node, and was then subdivided into three sub-nodes:	*Challenging* *Positive* *Surreal*
Sebastian (3)	*Limits of competence*	
Elizabeth (4)	*JD (junior doctor) worries*	
Franz (6)	*Patient familiarity*	
Crispin (11)	*Behind the eight ball*	
Shane (12)	*The Someone Else's Problem*	

CHAPTER 11: GLOSSARY/INDEX/ABBREVIATIONS

C.P.R	Cardiopulmonary Resuscitation
C.T. or C.T. Scan	Computerised Tomography, previously known as Computerised Axial Tomography (Scan)
Dr. O.C 1	Dr Old Consultant 1
Dr. Y.C.1	Doctor Young Consultant 1
E.C.G.	Electrocardiogram, or heart tracing
E.D.	Emergency Department (also previously known in the U.K. as Accident and Emergency, or A and E)
H.O.C.M	Hypertrophic Obstructive CardioMyopathy
I.P.L.	Inter Professional Learning
M.U.H.R.E.C.	Monash University Human Research Ethics Committee
R.M.O.1.	Resident Medical Officer (least experienced grade of hospital doctor)
S.M.O.	Senior Medical Officer (an experienced, but not a consultant grade, hospital doctor)
S.T.D.	Sexually Transmitted Disease

CHAPTER 12: REFERENCES

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Diagram 3.3: Kolb learning cycle (1984), page , This work is licensed under a Creative Commons Attribution-Noncommercial), http://www.simplypsychology.org/learning-kolb.html

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