

Desired in theory, troubling in practice

**A study of the social science PhD student experience as a
Deleuzian assemblage of interconnected lines**

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I, Hugh Kilmister confirm that the work presented in this thesis is my own. Where information has been derived from other sources, I confirm that this has been indicated in the thesis.

Abstract

The past thirty years have seen a growth in research as to the purpose and value of the PhD as well as a focus on the experiences of those undertaking the qualification. However, there remain 'dark spots' (Bengsten & Barnett, 2017, p. 114) in our understanding with limited attention having been given to promote different perspectives that can extend and challenge understandings of the PhD student experience. As a response, this thesis focuses on how the qualification is experienced by a diverse selection of social science PhD students in various departments at one institution. Through the use of Deuleuzoguattarian concepts, the PhD student experience is explored as an assemblage of interconnected lines that offer an alternative approach in conceptualising the experience as being fluid, emergent and multiple.

This study adopts a qualitative approach and is based on research data gathered from two sets of in-depth semi-structured interviews conducted with eleven participants over a six-month period who were also asked to provide photographic representation of their PhD experience. My findings show that the family, professional experience and expectations of PhD study can impact in a variety of ways that both challenge and aid student development. The results indicate that social networks, planning, home workspace and compartmentalisation all play a role in enabling the process of adaptation as do forms of resistance.

The study concludes that, in the PhD student experience background plays a key role in progression, becoming is a continually emergent process and only certain forms of resistance can affect change. The thesis ends with a set of recommendations for a range of stakeholders that emphasise the need for applicants to better inform themselves about the expectations of PhD study, and

for institutions and funders to pay closer attention to preparing students as well as supporting them in undertaking the qualification.

Impact statement

The focus of this study is an exploration of the PhD student experience with a diverse group of social science students. The qualitative analysis highlighted how aspects of my participants' backgrounds both challenged and aided their adaptation to PhD study. In addition, social networks, planning, organisation, the provision of space at home for undertaking research and compartmentalisation all played a role in enabling my participants to adapt to PhD study and helped in overcoming the liminality. Finally, given that progression in the qualification can be a complex and multi-faceted process, different forms of resistance were identified as being part of the experience.

My findings will be beneficial to a range of audiences who are either planning or undertaking the qualification or are involved in the development of the PhD student experience. Firstly, this research is of interest to PhD applicants and prior to beginning the qualification these individuals should prepare themselves and their families for the time and space required for research work. My research has highlighted the value of accessing information on the lived experience of the PhD student and having networks of support to draw on and both applicants and students should be encouraged to develop these. The impact of these findings can be brought about through providing potential PhD students with advice sessions prior to starting the qualification and by publishing a commercial PhD guide. The photos collected as part of my study can be used in this work to visually highlight aspects of PhD study.

Secondly, this research is also of interest to supervisors in planning and managing their PhD student relationships with my study highlighting the value of regular contact and feedback. These types of findings will continue to be disseminated through journal articles and providing talks to specialist research bodies such as

the Society for Research in Higher Education and the UK Council for Graduate Education as well as working directly with doctoral schools in universities.

Thirdly, my study has highlighted the role that universities can further play in supporting their PhD students through more tailored forms of training, a buddy system and the provision of more online support. Again, these findings will be disseminated through higher education journal articles and conference papers as well as working with universities.

Fourthly, my research supplements the review work currently being undertaken by the Economic & Social Research Council on the PhD in social sciences and responds to the lack of longitudinal data that tracks individuals undertaking the qualification (Hancock et al, 2019). The findings of my study will be shared with the ESRC and used to help inform this future policy work on the student experience.

This research therefore has the potential to impact on and inform a range of audiences and their practices, with the dissemination of the findings through journals, scholarly articles, and entries into specialist publications and conference papers.

Acknowledgements

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As with my participants, family and friends played a hugely supportive role. Just after I began my PhD my mum passed away but her pride in my educational development has kept me going and determined to complete.

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Glossary of the main Deuleuzoguattarian terms used in this thesis

Assemblage

A collection of elements which have been gathered together or assembled with lines upholding its structure.

Binary machines

Used to organise and code society through a classificatory system of sex, age, race and class.

Deterritorialisation

The move away from a rigid hierarchical territory towards one that opens up the possibility of change.

Flight line

This line upsets connections in an assemblage and inspires or motivates change and is transformative.

Logos

Logos is the ordering of existence and space with structure and intrinsic boundaries in which everything has its right place.

Molar line

This line rigidly segments assemblages and correspond to forms of societal control mechanisms.

Molecular line

The process of assemblage adaptation in relation to the molar line takes place through this line.

Nomos

Nomos is the way of arranging elements, people, thoughts or space that does not rely on any organisation or structure.

Reterritorialisation

Once an assemblage has been changed by deterritorialisation it is restructured through a process of reterritorialisation.

Rhizome

The connections that occur between similar and disparate objects, places and people in every direction with no particular beginning or ending.

Territorialisation

All assemblages have concrete elements, and the term territorialisation describes how unchanging or homogenous the identity of the assemblage is.

Chapter 1 Setting the study context

I frequently feel so confused that I experience difficulty in formulating questions to ask concerning the next step in my research. When I do succeed, it frequently appears that the answer is, 'It depends'. It depends on what I want. So often I do not know what I want and I long for someone to tell me, or to give me some sort of clue.

(Sheila quoted in Salmon, 1992, p. 53)

Introduction

In 1992 Phillida Salmon published an in-depth account of her students' experiences of the social science PhD, where she notes that 'becoming a PhD student means entering a peculiarly complex and private situation: it is a world about which few people have spoken' (p. 1). She notes the complexity of undertaking the qualification while managing family obligations and the demands of work and how skills training was not necessarily always beneficial. While many studies have followed this work, the depth and detail of her accounts highlight how the PhD in the social sciences is a very individual experience and how each PhD is a particular and unique case. I first read Salmon's work before starting my PhD and it provided an early inspiration in how I might begin to shape my own study.

In this chapter I explain why I chose to research the experiences of those studying for a PhD and outline the context of my study and my theoretical approach. Following this, I set out the questions which provide the direction and focus for my research. Finally, I provide an overview of the chapters contained in this thesis. In order to provide some context for my study, I start this chapter by discussing the changing nature of the PhD qualification over the past thirty years.

1.2 The changing nature of the PhD

The initial format of the modern PhD was developed in nineteenth century Germany and required the production of original research and its successful defence. This model was swiftly adopted by other countries so that today the PhD is seen globally as the summit of formal educational achievement with over 110,000 students enrolled in the United Kingdom in 2019/20 (HESA, 2021). The purpose of the traditional model of the PhD was to provide the training necessary to enable those undertaking the qualification to start an academic career. However, the role and purpose of the qualification began to change in the 1990s when governments in OECD nations began to more fully appreciate the value of the qualification beyond academia, especially because of the growing need for research to support national, social, economic and environmental issues as well as to address global challenges. With this recognition came a gradual repositioning of the PhD from solely an apprenticeship training for academia to a broadening of potential career outcomes and the wider part that the qualification might play in the knowledge economy (Park, 2007).

In the United Kingdom this repositioning of the qualification over the past thirty years has meant an emphasis on the training and skills development of PhD students. So, rather than PhD students just focusing on the development of technical and research knowledge, they are now expected to have additional skills such as a more sophisticated approach to research management, an ability to cross disciplinary boundaries and an understanding of the pathways through which research can have impact. These changes in the PhD have resulted in tensions with the traditional values of academic knowledge and learning, it has been argued, becoming subordinate to the acquisition of skills training (Bansel, 2011). In chapter two I will

detail how this shift in the role of the qualification has particularly affected the PhD in the social sciences and the tensions this has caused.

Accompanying the repositioning of the traditional PhD, the past thirty years has also seen the development of a range of doctoral awards that include new route PhDs and professional doctorates. Instead of relying solely on the traditional thesis, these new programmes have introduced alternative forms of doctoral text; from monograph to portfolio and incorporate elements such as taught modules and work-based learning. These awards have posed challenges for the sector in terms of ensuring comparability of quality and standards (Robinson, 2018). Stephenson et al (2006) state that demonstrating 'doctorateness' with these programmes is not always easy as students' own professional work can form a significant aspect of assessment. The heavy coursework emphasis of these awards in comparison to the traditional PhD has led to some questioning the quality of these programmes (Mellors-Bourne et al, 2016).

The increase in the types of doctoral programmes available has also been matched by an increase in the numbers of doctoral students in British universities that follows a growing international trend of increased numbers of students undertaking doctoral study (OECD, 2016). However, this expansion in doctoral education and the numbers undertaking PhD study has not been viewed positively by all. Gould (2015) claims that there are too many PhD graduates being produced for the relatively small university job market, while Hancock (2020) asks whether there are sufficient employment opportunities outside of the academic sector. With these increasing numbers of PhD graduates and the challenges that can exist either in obtaining future academic employment or in being able to easily transition to another sector, Boulos (2016) notes how tensions can be created for some in finding jobs 'which fit their levels of qualifications and satisfaction' (p. 901).

In summary, over the past thirty years there has been an ongoing evolution in both the role and purpose of the PhD that has seen an increasing emphasis on the skills training of those undertaking the research doctorate. During this time there has also been the development of new doctoral awards with alternative forms of assessment. All of these changes have been criticised for moving the qualification away from its original purpose of preparing students for careers in academic research and, with increasing PhD student numbers, more recent issues have been raised about career outcomes.

1.3 My positionality and the background of my study

For the past twenty years I have worked in the higher education sector in a variety of student facing roles and most recently this has involved working with students at all levels of study as a Student Experience Manager. This role means working closely with PhD students discussing their experiences and developing supportive interventions. As a result of my work, I came to this research study familiar with some of the issues faced by PhD students, however at times my positionality was also complex. After all, I was undertaking a social science PhD researching others doing the same thing, that also involved bringing my identity as someone who works in the higher education sector. In part I was occupying the position of a 'researcher as subject and subject as researcher' (Iphofen, 2011, p. 128) and having this positioning came with both advantages and challenges in undertaking this study, and these will be fully discussed in chapters 4 and 9.

In my previous study (Kilmister, 2015) I explored the challenges faced by undergraduate students and how adaptation was an ongoing process helped by relational support and coping strategies to enable their progression. In comparison, when I came to look for similar studies to aid my understanding of the postgraduate research student experience, this area appeared relatively under-researched. From

my professional work and before starting my research I understood that doing a PhD was often challenging with progress being sporadic for much of the time. The social science PhD students I had worked with discussed a range of issues, and while they might have felt that they had started well many of them would then not see any progress in their research, leading to feelings of disillusionment and of withdrawing. The students how the day-to-day reality of a PhD meant long periods of isolation, away from others with the only focus being their research. But what was most striking was how those students who were at the end of their research still felt unsure about what they were doing. This was despite having passed the recognised milestones in PhD development such as the development of their research, the undertaking of fieldwork and data analysis and were currently writing up. For these students there continued to be concerns about the work that they were doing and whether it was acceptable, and I was left with the impression that PhD study could be an indeterminate and open-ended experience. It was rare to come across PhD students who were assured in their research work and were not beset with doubts and what I did not see was a seamless development or confidence in what they were achieving.

These types of professional exchanges with PhD students worked to influence my thinking before I started my own research, and when I came to examine the literature on the PhD student experience, I could see these experiences described in the literature. Research highlights that the doctorate is not a seamless trajectory but instead is like riding a 'rollercoaster' (McGrath, 2017, p. 1) where highs of achievement were combined with lows of despair, and that uncertainty can be a continuous state. Reflecting on this, Clark et al (2007) claim undertaking PhD research can be a 'messy process'. Mellor (2001) describes how his own PhD constituted a 'messy method' as he describes 'working without rules' (p. 465) and spending six years making many errors. Mewburn claims her own development as

a PhD student was a 'somewhat *ad hoc* patchwork' (Barnacle & Mewburn, 2010, p. 437). For all these authors their research was an untidy and non-linear process.

Given this literature, what was apparent to me from my own work experiences with other PhD students and then with a peer group when I began my own research, was that the experience could be far more fragmented and messier than students might have expected with achievements in one area contrasting with lack of progress in a related area. For instance, being able to present research at a conference did not necessarily translate into an ability to communicate effectively in your academic writing.

However, my experiences and this literature is in contrast to how the PhD student experience has been discussed in policy terms, in some of the research literature as well as in PhD self-help guides. Here the individual is presented as undertaking the qualification very much as if they are on a linear pathway and are positioned in relation to a series of critical incidents that include the recognised milestones of PhD development. This focus on the measurable outcomes of PhD study is perhaps unsurprising given how in higher education generally there has been an on-going emphasis on a regulated 'project of doing' (Barnett, 2007, p. 26) that has also defined the nature and purpose of PhD study.

Over the past three decades there has been 'a proliferation of reviews, advisory, consultation, and policy documents and codes of practice' (John & Denicolo, 2013, p. 42) in an attempt to regulate the qualification that includes: the Harris Report (1996), Roberts Report (2002), introduction of the Higher Education Academy's Postgraduate Research Experience Survey in 2006, the Economic and Social Research Council skills training requirements for PhD students (2009/2015), and various QAA guidelines for research degrees (2015/2018). As part of this increasing focus, PhD education and training has become an object of institutional

management (Kehm et al, 2018) with universities delivering skills training and ensuring the formal monitoring of progression and completion of PhD degrees. One particularly striking example of this is the Researcher Development Framework (Vitae, 2011) that identifies the key skill areas needed to be considered a competent researcher and facilitates PhD students to review their capabilities while separately the organisation highlights the 'typical milestones' in undertaking the qualification. This will be discussed in more detail in chapter two.

As a result of the push to measure outcomes in PhD study, the literature has suggested that the experience of the individual undertaking the qualification can be broken down into stages of development. For instance, Grover (2007) identifies three stages (exploration, engagement and consolidation) that the PhD student needs to navigate in their development. Geraniou (2010) refers to these transition stages as adjustment, expertise and articulation. Ampaw & Jaeger (2011) also claim there are three stages, namely the transition (from admission to mid-completion of courses), development (course mid-completion to comprehensive examination), and research stages (dissertation). For McAlpine and McKinnon (2013) the transitional stages include socialisation into the PhD programme, thesis completion and employment guidance.

While these markers of progression are important, what they also suggest is that PhD students are acculturated into institutional goals and established academic practices and as a result progress through the defined stages of development. However, such practices of acculturation and alignment take no account of the differences of students' lived realities of the PhD experience and as highlighted from my professional interactions, student development can be more fluid, emergent and multiple. It was this disconnection between the linear model of PhD

student development as compared to the lived reality that provided a motivation to finding an alternative approach to how the experience might be conceptualised.

1.4 The PhD student experience as an assemblage of interconnected lines

In my study I will draw on a number of Deleuzoguattarian concepts to create a more nuanced understanding of the PhD student experience and one that considers its less than linear and more evolving nature. These terms will be briefly introduced here and will be discussed in more detail in chapter 3.

Central to my study and in order to understand the phenomenon of the PhD student experience I will use the concept of the 'assemblage'. The term is used by Deleuze & Guattari in *A Thousand Plateaus* (1987) and is derived from the French word *agencement*, meaning a construction, an arrangement, or a layout that is made up 'of heterogeneous elements' (Nail, 2017, p. 22). In their philosophy an assemblage is a set of connections that come together for a period of time and which, when taken together, produce a recognisable behaviour or effect. While each assemblage is a constellation of heterogeneous elements, these constituent elements are not to be taken as entities in themselves but are also to be understood as processes or connections.

Each part of the assemblage may be separated and has separate uses. To qualify as an assemblage the parts need to interact with one another in such a way as to yield a whole which has properties of its own, properties which are irreducible to the parts. While accommodating the notions of dynamics and heterogeneity, the assemblage is underpinned by Deleuze's philosophy of constant becoming. Given my professional work and how some of the literature has discussed the PhD student experience as being a process of emergence that is temporarily stable, but constantly changing, the assemblage appeared to be an appropriate concept with which to examine my participants' experiences of the qualification. Conceptualising

their accounts as an assemblage will enable a focus to be given to the nonlinear, iterative and recursive processes and as well as the interpersonal networks that make up the experience.

Delanda (2006) notes how 'interpersonal networks and institutional organizations are assemblages of people' (p. 33) and an exploration of the PhD student experience means an examination of the assemblages of people who are undertaking the qualification. For Deleuze & Guattari (1987) people who themselves are assemblages are connected in a multiplicity of assemblages or networks that are in a constant state of movement. All assemblages are composed of molar, molecular and flight lines – terms that I will define in chapter three - and it is these lines of connection that I will use to explore my participants' experiences of the PhD in chapters five, six and seven. In an assemblage these lines work to uphold its structure, but they also enable it to adapt as well as change over time. Taking the molar line will enable an exploration of my participants' lives and backgrounds before the PhD in terms of work, family and expectations of PhD study and how these might impact on the experience. The molecular line will enable a focus on how and in what ways my participants adapt their own assemblage to the institutional assemblage of PhD study. The use of the line of flight will enable an examination of how my participants might resist other assemblages as well as at times escape their own assemblage.

By using these concepts this thesis will present an alternative conceptualisation of the PhD student experience that offers both a conceptual and an empirical contribution to our understanding.

1.5 Our understanding of the PhD student experience and my study

In 2006 Leonard et al stated that there had been little research giving students' views of the PhD experience with the result that our knowledge was mainly one of 'gaps'

(p.37). Since this report and over the past 15 years our understanding of the PhD student experience has begun to develop with recent studies that highlight students' perspectives on the supervisory relationship (Cornér et al, 2017 and van Rooij et al, 2019), support mechanisms (Zahl, 2017 and Mantai, 2017) the development of an academic identity (McAlpine et al, 2009; Keefer, 2015 and Burford & Hook, 2019) as well as the personal and social lives of PhD students (Spaulding & Rockinson-Szapkiw, 2012, Acker & Haque, 2015 and Dowling & Mantai, 2017). The research that has been undertaken has also highlighted, to a lesser extent, the challenges in undertaking the qualification. So, the themes of students needing to adjust and adapt to the research environment (Sverdlik et al, 2018 and McCray & Joseph-Richard, 2020), the barriers to progression (Hunter & Devine 2016, Mattocks & Briscoe-Palmer, 2016) and more recently well-being and mental health (Levecque et al., 2017 and Mackie & Bates, 2019) have all begun to be reflected. It is clear from this research that persisting in a PhD is demanding, as students struggle to make sense of their PhD study. That said, limited consideration has been given to how students might be impacted by their backgrounds and expectations of the qualification that they bring to PhD study and how adaptation might be an ongoing process and when resistance might sometimes be a necessary response and what forms this might take.

While recent scholarship has begun to explore individual perspectives of the PhD student experience, this literature has tended to focus on what Burford & Hook (2019) describe as the 'narrow imaginings of doctoral subjectivity' (p. 1344). By this they mean the focus has been on those younger students who undertake the qualification without any other commitments. Having reviewed the PhD student literature, the predominant focus of these studies tends to be on the experiences of younger participants, and this is perhaps not surprising given that the average age of those achieving a PhD in the United Kingdom is 27 (European University Institute,

2018). Nevertheless, there are also those who come to the PhD who don't fit this profile and who are for instance part-time, self-funded, mature students who may take much more than three years to complete their studies.

One of the initial research study decisions that I needed to make was about the type of PhD participants that I would recruit and whether this sample should reflect the 'three cultures' (Kagan, 2009, p. 1) of science, social science and arts and humanities, or given the differences between them in how research is undertaken and discussed, should there instead be a focus on just one? While the culmination of a research doctorate is a thesis, how students in each culture produce this can vary significantly as can those drawn to undertaking the qualification.

In the sciences, PhD students generally work in a laboratory setting and tend to have their own space and computer facilities. They will also have a close contact with their supervisors who usually is the principal investigator for the whole research project and is therefore also based in the lab. Woolston (2019) notes how PhD science students tend to come straight from previous higher education study into the qualification and are in their mid-twenties by the time of their graduation suggesting that they have not worked full-time prior to research study. While for those undertaking PhDs in the arts and humanities, some of these students come with professional experience in a field related to their study and Candy (2006) notes the prominence of practice-based research in this culture. As a result, the training and assessment can differ for some doing arts & humanities PhDs with, for example, creative outputs being produced, or practice undertaken as an integral part of the research process. In contrast to these other two cultures, social science students tend to follow a more traditional route of PhD assessment in their training and thesis outputs with the student expected to devise the topic of their research as well as determining the various steps of the whole of the research project. The student is

expected to conduct all elements of the research project and arrange meetings with their supervisors with contact being much less regular.

These differences can mean that PhD students in each of the three cultures can have different experiences of the qualification (Sverdlik et al, 2018). Given this understanding it seemed sensible within the scope of my study to focus on one type of PhD culture where the qualification is similarly structured and assessed. This choice was also informed by my professional experience and interactions with students that had primarily been undertaken with social science PhD students. From this experience I was aware of that some of these students were not in their twenties and were returning to study with professional experience and with some undertaking the qualification on a part-time basis. While these characteristics may not be completely unique to the social sciences, they do tend to be being more common for students in this research culture.

Purcell et al (2005) note that unlike science PhDs students, those embarking on the social science qualification tend to have employment experience meaning that the average age of those on social science doctoral programmes is higher than those for PhD students as a whole. Similarly, McAlpine & Lucas (2011) note how those undertaking social science research come to the qualification with 'a wealth of professional experience' (p. 695). Purcell et al (2005) highlight the intrinsic motivations where social science PhD graduates place great emphasis on doing socially useful work after completing the qualification compared to graduates in the other cultures where more focus was placed on the extrinsic rewards from resulting employment. Another distinction is the mode of study and Gardner & Gopaul (2012) note how a significantly higher number of students in professional fields such as education and social work enrol part-time compared to those students in the sciences, where part-time enrolment is all but non-existent. As I will discuss in

chapter two, for these part-time PhD students their experiences can be distinctively different with PhD study needing to be combined with work and childcare. This group of students can also be less satisfied and engaged compared to their full-time peers (Green, 2016).

These studies indicate that students in the social science disciplines have different characteristics to other fields. They suggest that students are generally more mature and can have other commitments and these factors provided a motivation for deciding to focus my study on the experiences of a range of social science PhD students. So, rather than attempting to reflect on how a large number of PhD students experience the qualification in a range of disciplines, my research instead focuses on how the qualification was experienced by a small, diverse selection of social science PhD students at one institution. Given that I was also a social science PhD student based in a large department it felt sensible to focus on this particular research culture.

This particular disciplinary focus is also to acknowledge how over the past thirty years there has been a policy emphasis on the training, development and completion of those undertaking social science PhDs that has continued to the present day (CFE Research and the University of York, 2020). Much of this skills push has been led by the Economic and Social Research Council that has followed a structure first introduced in the sciences. However, despite their role in supporting skills training and progression this model has been criticised for failing to take account of the unique characteristics of the social science PhD qualification (Deem et al, 2015 and Budd et al, 2018). These authors highlight how the characteristics of the social science qualification are fundamentally different to the science PhD and consequently so are the experiences of these students undertaking it. Therefore, while much of the literature on the PhD student experience that I will detail in chapter

two has either focused on participants undertaking the qualification in the sciences or from a range of disciplinary backgrounds, having a sole focus on the experiences of those undertaking the qualification in the social sciences is a response to this gap.

My study is based on research data gathered from two sets of in-depth, semi-structured interviews conducted with my eleven participants over a six-month period, and they were also asked to provide photographic representation of their PhD experience. As discussed, it was important that my sample was diverse with a range of variables that included gender, age and nationality. In addition, given the length of study of the PhD, it was important to recruit participants who were at different stages of their study, but had undertaken at least one year of research to enable them to have a good understanding of the requirements and how these needed to be combined with other aspects of their lives.

1.6 Research questions

My research questions are divided into three clear areas of focus: challenges, adaptations and resistances. The reason for separating these specific areas was a practical one: to provide a framework in which to conduct my research and construct interview questions.

1. In what ways does the family, work and previous study impact on PhD student development?

Having explored the literature on the PhD student experience I wanted to examine how my participants' backgrounds and expectations of PhD study presented different challenges to their progression.

2. What role does adaptation play in overcoming the liminality of PhD study?

My second question explores the various forms of adaptation that my participants underwent as a result of PhD study and how these help in contending with the open-ended nature of their development.

3. How might forms of resistance enable the progression of the PhD student?

Given the challenges that participants might bring to their PhD study and the need to adapt, my final question focuses on how forms of resistance might be a response and how they work to aid the progression of the PhD student.

1.7 Overview of the thesis

This chapter has set out the context for my study and the motivations for choosing to research the lived experience of a particular group of PhD students. To present this research, the thesis is divided into 8 chapters. Chapter two contextualises my study by critically examining in what ways both the PhD qualification and the student experience have been conceptualised and researched and the themes that have emerged as well as the gaps in the literature. In chapter three I set out the theoretical framework guiding my study and explore how the complexities people experience in undertaking the qualification can be explored by drawing on a number of Deleuzoguattarian concepts. The methodology in chapter four details and explains the approach and the methods selected for my research project. It begins with the background to my study and how I chose the theoretical perspectives that frame my research. Following this I outline my research questions and the reasons for my choice of research paradigm and the lessons learnt from my pilot study. Then I detail the processes employed in my data collection and analysis. I then examine the ethical issues encountered in the course of my research before finally considering the concept of reflexivity and my positionality within the research process.

The next three chapters draw on the analysis of my participants' interviews and images. These chapters are organised to respond to my research questions. In

chapter 5 I focus on the molar lines of my participants and examine how in undertaking PhD study they were challenged by their own backgrounds that included the family, their professional identities and previous experiences of postgraduate taught education. Chapter 6 focuses on how my participants adjusted to their PhD student experience that can be understood through a series of ongoing molecular adaptations. The focus of chapter 7 is on how the flight line, or line of resistance, manifested itself in my participants' PhD experiences.

Chapter 8 draws together the key findings from my study into a discussion and examines these findings in the light of the research questions posed in this thesis. Following this in chapter 9, I present a set of recommendations from my study before discussing the implications of my project and its wider contribution to research for the future.

In summary, this study contributes to the small but growing knowledge base about the PhD student perspective of the qualification and the part played by challenges, adaptations and resistances.

2.1 Introduction

The purpose of this chapter is to provide the context for my study, and I will start by providing an overview of the changes to the PhD in the last three decades in the United Kingdom, before expanding on this to reflect on the place of the qualification in the knowledge economy. This will be followed by how research has conceptualised the PhD and the experiences of those undertaking the qualification. In the second part of the chapter, I will examine the developing literature on the PhD student experience and the most prominent aspects in this research before concluding with a summary that will highlight some of the key issues to be explored in my study. The research on the PhD student experience that is used to inform this review has primarily derived from the United States, Australia and the United Kingdom and has reflected on those undertaking the qualification in a range of disciplines and settings and this chapter rather than focusing specifically on the literature on the social science PhD student experience will instead reflect this breadth.

The Doctor of Philosophy (PhD) degree is the highest formal educational qualification awarded by universities. After its introduction in the United Kingdom just over a hundred years ago, the early period of the PhD is characterised as being free of interference from outside the academy (Taylor, 2012). Bogle (2017) notes how it took until the 1970s for numbers undertaking the qualification to begin to increase and over the past thirty years this has been matched by an expansion in the range of doctoral awards. During this period there has also been a growth in the research as to the purpose and value of the qualification as well as a focus on the experiences of those undertaking the research doctorate. However, as will be discussed in this chapter, despite recent scholarship beginning to explore the

realities of PhD student lives, there remain 'dark spots' (Bengsten & Barnett, 2017, p. 114) and compared to undergraduate study, a comprehensive understanding of the PhD student experience is still lacking (Sverdlik et al, 2018).

2.2 The changing nature of the role and purpose of PhD studies

Since the 1990s concerns about the attrition and completion of PhD students and the purpose and labour market relevance of the qualification have increasingly become the focus of governments, universities and students themselves and in the next section I will examine the origin of these concerns and how policy makers and universities have attempted to respond to them.

Various authors (Park, 2007, Boud & Lee 2009 and Cuthbert & Molla, 2014) state how there had been a recent history of concern about the PhD both within and beyond universities that had come about in large part as a result of the concerns that were being expressed by higher education policy makers in the 1990s about the nature and purpose of the PhD qualification. During this period there was an on-going debate between universities and research councils about the efficiency and outcomes of PhD study with concerns expressed over the low numbers and poor completion rates of social science PhD students compared to those doing natural science research doctorates. Nevertheless, despite a series of government reports in the 1990s that attempted to define the level and depth of PhD training courses, the role of the supervisor and the effective monitoring of PhD students, it was not until the publication of the *Harris Report* (1996) with its focus on preparing PhD graduates for careers in and beyond the academy, that there was a defined shift in focus onto the role and purpose of the qualification.

Almost every year following the publication of the Harris Report (1996) there has been an increasing 'blizzard of initiatives' (Metcalf, 2006) directed at regulating and managing PhD studies. Some of the key initiatives and actions have included:

SET for success (Roberts, 2002) with its focus on STEM subjects and for skills development to be part of PhD study, a review of the research training provided by universities to produce thresholds of provision and good practice guidelines (HEFCE, 2003), a revised Code of Practice for PhD student supervision and the need for regular progress reviews (QAA, 2004 and QAA 2006); and more recently the creation of the Researcher Development Framework and a greater focus on the professional development of PhD students (Vitae, 2011 and QAA, 2015). The changes that have been made can also be seen as part of the broader trend of managerialism in higher education that has been taking place over the past thirty years (Deem, 2011; Tight, 2014 and Thornton, 2017). John & Denicolo (2013) claim that within a context of increased accountability and increasing PhD student numbers, a more regulated qualification was inevitable even if it has not always been possible to achieve complete consistency in both the administrative procedures and the judgements that are made about research study.

The development of the skills and training agenda has also contributed to a focus around the part that the PhD plays in the wider economy. Park (2007) identifies a policy shift in thinking about PhD employability and how employers are looking for more than just technical skills and research knowledge. Metcalfe (2006) argues that 'employers are looking for a range of skills and competencies – the ability to build relationships and interact with colleagues, communication skills, and cultural and strategic thinking' (p. 81). These needs have contributed to the repositioning of the PhD from solely an apprenticeship training for academia to a broadening of potential career outcomes and the part it might play in the knowledge economy.

The policy influence of supranational agencies such as the World Bank and the Organisation for Economic Co-operation and Development has resulted in PhD education being narrowed and made more accountable (Barnacle, 2005 and

Mowbray & Halse, 2010). These authors state that the focus of PhD education has become more about the production of knowledge and of skilled graduates rather than supporting student researchers to contribute different and new forms of knowledge to society. Kendall (2002) argues that PhD education has been remade and 'simplified to be rendered transformable' into a 'simple three-year training, with four precisely ordered and named parts: 'Review, Methodology, Experiments, Analysis' (p. 138). Mowbray & Halse (2010) state that the 'skills push' in PhD education has been limited by only seeing a value in the production of skilled PhD graduates for a knowledge economy. Cuthbert & Molla (2014) argue that the focusing of research on the part the PhD plays in skills training and the knowledge economy has meant less consideration being given to issues related to the quality of the research produced by candidates and the research training they receive. Durette et al (2016) argue that the impact of these World Bank and OECD reports over the past twenty years has meant that the PhD has become less about the advancement of knowledge and more about being a training process.

2.3 Conceptualising the field of PhD education

Authors have claimed that the field of PhD study is under-theorised and that much of the research that has been undertaken lacks a guiding theoretical framework (Leonard et al, 2006 and Peterson, 2007). Nevertheless, a number of conceptualisations have been proposed and in the next section I will examine how the PhD has been discussed in relation to these starting with the impact of the skills training agenda, followed by the role played by socialisation before concluding with how the PhD student experience has begun to be conceptualised as a process of identity development.

a) The place of the PhD in the skills training agenda and the knowledge economy

In response to the policy influence on PhD education, Craswell (2007) and Attwood (2010) have argued about the place of the qualification in the skill training agenda and the knowledge economy and have remained critical of the perceived role that this skills training might play in benefitting the needs of a knowledge economy. Neuman & Tan (2011) highlight how a preoccupation with the economic benefits of skills training takes no account of the social aspects in undertaking research and how the PhD might also promote effective participation in communities of knowledge. Similarly, Usher (2002) and Bansel (2011) argue that the impact of the knowledge economy has also reconfigured what might constitute PhD knowledge. Usher (2002) argues that the traditional academic understandings of knowledge being produced by a community of university scholars is distinct from a knowledge economy view of knowledge that is used to address problems in a specific context and he states that the knowledge economy definition is one that 'replaces an epistemological with an economic definition of knowledge' (p. 144).

The result of this regulation is that undertaking a PhD has become a form of risk management: 'non-completion, late completion, failure, graduate quality and so on, are economic and reputational risks to be managed' (Bansel, 2011, p. 548). While this regulation has sought to widen the scope and purpose of PhD studies with a greater emphasis on skills development, some commentators (Walker et al, 2008, Boud & Lee, 2009 and Cuthbert & Molla, 2014) have stated how this focus might have also narrowed the scope of the qualification and argue that the traditional values of academic knowledge and learning in the PhD have become subordinate to the acquisition of skills training. Echoing Roberts (2002), this has meant that the

focus of research study has shifted from the production of a thesis to 'the production of a trained researcher' (Bansel, 2011, p. 548).

In terms of how universities have enacted these policy changes, Boud & Lee (2009) state that little consideration has been given to how effective skills training is in helping PhD students' progress and complete and to enable graduates to either take up careers inside or outside academia. For Boud & Lee (2009) this lack of research on the effects of skills training on PhD student progression and outcomes means we are left with 'a still largely unexamined set of assumptions about these relationships' (p. 12). Cuthbert & Molla (2014) claim that little consideration is given to assessing the skills that might be acquired during a student's PhD education that are then used to inform their studies. They also claim that the emphasis on skills development neglects the value of the personal and social knowledge that students acquire during their PhD education.

While we might lack sufficient knowledge of these effects, what is clear is that there is a greater need for students to respond to the requirements of a more regulated PhD that 'constitutes subjects as autonomous, responsibilised and reflexive' (Bansel, 2011, p. 551) with greater accountability for their research studies. Despite needing to take this responsibility, Disney et al (2013) claim that there continues to be little opportunity for PhD student to feed into the process of skills development or to operationalise them during their studies.

The heavy policy emphasis on skills development and the monitoring of progression might suggest that the PhD student is now better supported by their institution, however the literature argues that a more regulated relationship means that the more challenging aspects of PhD study, that do not fit into that which is monitored, risk becoming marginalised. This point has begun to be explored by various authors (McAlpine et al, 2012, Pyhältö et al, 2015 and Wisker et al, 2017)

who highlight how aspects of the PhD student experience are either made invisible or are concealed in part due to the regulation around the PhD that only emphasises progression and completion and leaves the day-to-day challenges of PhD study hidden. McAlpine et al (2012) highlight how inconsistent their participants' experiences of supervision and seeking institutional help was in practice. The result of their participants' agentic approach to issues such as workload, family responsibilities and supervisory conflicts maintains the apparent marginality of the experiences and 'renders the institution absolved of the responsibility to create policy measures to deal with these regular problems' (p. 521). Wisker et al (2017) note the 'dark corners of the formalised curriculum and institutional framework' where students can 'fall off the radar' (p. 529) and become lost in the university system when they move from one supervisor to another or are moved between research programmes or departments.

As a result of the skills push in the PhD, Mowbray & Halse (2010) argue that this has led to a normative set of expectations around skills, attributes, competencies and dispositions that PhD graduates should have acquired, including:

disciplinary knowledge; research and technical skills; project management and leadership skills; teaching competence; the capacity to communicate verbally and in writing; effectiveness as a team player and as an autonomous self-manager; administrative competence; and the capacity to be an ethical, adventurous, innovative, motivated, creative and flexible individual (p. 654)

However, an emphasis on the acquisition of these skills has meant a disregard for the multidimensionality of the doctorate (Pearson, Evans, & Macauley, 2008) that overlooks the development of capacities such as engagement, motivation, perseverance, resilience, innovation and creative thinking. Mowbray & Halse (2010) use the term 'personal resourcefulness' (p. 656) to account for the need to

also develop these skills that enable PhD students 'to become more assertive, confident, resilient, persistent and resolute in determining how to progress their PhD while balancing their other commitments' (p. 657). Reflecting on the increasing demands of PhD study and the continuing attrition rates of between 40% and 50% (Litalien & Guay 2015) for PhD study, McCray & Joseph-Richard (2020) state how there is even more need for personal resourcefulness and resilience. They highlight how in a PhD environment of increased 'emotional exhaustion and depression that are triggered by isolation, stress and low levels of intrinsic motivation' (p. 680) there is a paucity of research about what enables successful PhD completion.

In summary, some of the concerns around the monitoring of PhD students and the development of skills training expressed by policy makers in the 1990s have been addressed by an increasingly regulated PhD education. However, as a consequence of the emphasis placed on the development of skills training and the monitoring of outcomes, other issues have arisen that have affected the conception of PhD study and the positioning of the student, and this has resulted in different but related concerns being raised. Previously the low numbers enrolling to do PhDs in the social sciences had been a concern, while more recently the issue of the ever-increasing numbers of PhD students has led to concerns being expressed by policy makers and students about the risk of there being too many PhD students and graduates (Gould, 2015 and Hancock, 2020).

b) Socialisation and the PhD student

Over the past twenty years, a framework of socialisation has become a primary concept through which the PhD student experience has been examined and refers to the process through which an individual learns to adopt the values, skills, attitudes, norms, and knowledge needed for membership in a given society, group, or organisation (Gardner, 2010). Weidman et al (2001) identify three elements of

socialisation theory in relation to the PhD student: knowledge acquisition, investment and involvement. The element of knowledge acquisition involves learning the language, history, problems and ideology of the profession. Here the integration of self-image and professional identity is developed as prospective group members mirror and model the behaviours and broader codes of conduct after established members. The main feature of investment reflects the channelling of time, energy and self-esteem into the organisation and thereby giving up or forgoing other options. Finally, the notion of involvement leads to role identification and commitment. During this process, individuals participate in various professional activities and internalise their identification with the commitment to the professional role.

The socialisation literature uses the interactions between the department and the PhD student as a significant frame to organise the practices and processes of PhD education. Nettles & Millet (2006) suggest that socialisation processes and opportunities tend to increase as PhD students complete stages in their research and have more frequent interactions with their department as well as more opportunities for conference presentations and publications than those in the earlier stages of their research.

Mendoza (2007) discusses the significance of disciplinary culture as an important distinguishing variable. Specifically, students in sciences such as physics, biology and chemistry often work and conduct thesis research in collaborative teams under the direction of a principal investigator and where the PhD student performs part of that research which is assigned to them. Whereas in social sciences, the student pursues their PhD studies in a generally more isolated, solitary fashion, defining their own individual research project and not working as part of a team (Smallwood,

2004). This marked difference between the disciplines inherently influences the amount and the types of interaction with the department and peers.

Austin & McDaniels (2006) claim that the concept of socialisation applied to the PhD student experience provides the 'most comprehensive framework for understanding graduate and professional student socialisation' (p. 411). However, others have criticised how unidirectional it is as a concept as it does not allow for the socialised to also affect the socialising agent or the socialising organisation (Gonzalez, 2006). Instead, the socialisation approach taken in the literature suggests a linear experience for all those who enter PhD study, that seeks to only absorb PhD students into the traditional habits, norms and behaviours of the academy, rather than taking account of the unique contributions that individuals might make in being able to change things. In this way the concept of socialisation in the PhD student experience supports an assimilation model that presupposes PhD education as monolithic and does not consider the experiences of underrepresented groups in PhD education, as well as overlapping contexts including disciplinary, departmental, and institutional dynamics (Gardner, 2008).

While the framework of socialisation tends to foreground the supervisor and the department as the main supporters of socialisation, Todd & Louw (2019) highlight how the theoretical framework has shifted to take account of the broader nature of this support that PhD students draw-on. This expansion of the conceptions of *who* provides support to PhD students for socialisation underpins Sala-Bubaré & Castelló's (2016) five categories of relevant social agents, namely the individual; the supervisor; the research group, including other faculty and peers; outside researchers and the broader community. Despite this expansion, the literature continues to highlight how the university campus is the primary site where PhD

students are socialised and forge their researcher identities (Dowling & Mantai, 2017 and Roksa et al, 2018).

While socialisation has been the dominant framework through which to examine the PhD student experience, it has been criticised for being universalising, standardised, linear, and structurally deterministic and narrow (Hopwood & Sutherland, 2009 and Acker & Haque, 2015). It is also a conceptualisation that tends to view all PhD students as a homogenous body seamlessly progressing through the qualification taking little account of the experiences of those from different ethnic groups and those with disabilities that might be markedly different (Williams et al, 2016 and Espinoza, 2018). As a theory it has also been noted how socialisation can overstate the influence of academic structures on the helpless PhD student (Pervan et al, 2015). In this reading, no account is taken of the capacity of PhD students to be active agents in their education who are capable of shaping and influencing their experience (Hopwood 2010) and who hold and act on values of their own.

As a result of some of this research, the literature is beginning to reflect how the PhD experience can be far more individual (Janta et al, 2014), with different students studying in the same programme each having their own experiences, with each needing, seeking and receiving different types of support from different social agents. Acker & Haque (2015) highlight how the diversity of students undertaking PhDs in the social sciences means that socialisation is a less than linear process, discussing how their participants needed to navigate their way through their research process that involved 'learning the rules, figuring out the faculty and preparing for the future' (p. 231). Todd & Louw (2019) discuss how for their participants there was a contrast between the community that they had experienced at the postgraduate taught level compared to the socialisation at the PhD level that

involves the development of their own networks of support. These authors highlight how PhD study for their participants was far from being a straightforward experience of socialisation, with challenges posed by a lack of financial stability and the PhD enculturation process that reinforced a tendency to focus on life as a student rather than on the seamless transition to a PhD student identity and the planning required for a future in academia.

With more recent literature focusing on the diverse lived experience of the PhD student (Grant et al, 2016, Mantai, 2017 and Burford & Hook, 2019), McCray & Joseph-Richard (2020) claim that there is no such thing as a typical PhD student that the linear model of socialisation might suggest. Todd & Louw (2019) claim that, rather than there being one process of socialisation, given the diversity of social agents involved both within and outside of the university setting, each PhD student has a unique experience composed of a broad network of social agents. In this way, each individual PhD student needs to create a unique network of connections through which they negotiate the demands of their programme.

Some of the aspects of the socialisation literature such as networks of support mechanisms have become features of the most recent conceptualisation of the PhD student experience, that of identity development and this will be discussed in the next section.

c) Identity development and the PhD student experience

Green (2005) claims that the PhD is 'as much about the production of *identity* as it is the production of *knowledge*' (p. 151) and various authors (McAlpine et al, 2009; Keefer, 2015 and Mantai, 2017) have begun to examine PhD education as a process of identity development. McAlpine et al (2009) found that the accumulation of formative experiences contributed to the development of a PhD student identity and this is aided by the individual thinking about perceiving themselves as and

performing as a developing researcher. Acker & Haque (2015) show how the challenges of balancing multiple identities and a lack of financial stability meant that for their participants there was not a seamless development in their PhD student identity. Mantai (2017) claims that PhD students define their identities and assess their academic development in relation to their perceived 'market value' in academia. These studies also highlight that the process of doing identity work for PhD students is an ongoing project that is often unstable with the development needing to incorporate an individual's multiple identities that are continually constructed and reconstructed in response to a variety of continually changing influences. For Foot et al (2014) conflicts can arise for individuals as they begin to develop a PhD student identity that results in 'a reluctance or sense of loss as they place less emphasis on previous identities' (p. 110).

Various authors (Mewburn, 2011; McAlpine et al, 2012 and Acker & Haque, 2015) detail the interweaving of their participants' developing PhD student identity with their existing identities. In this literature loss of health, depression, becoming a new parent, relationship breakdowns, death and financial strains are issues that PhD students need to contend with, and these impact on their academic work in different ways. Other studies highlight how existing identities can compromise the development of a PhD student identity with Jazvac-Martek (2009) claiming that PhD students oscillate between existing and developing identities.

In contrast, McCray & Joseph-Richard (2020) found that those participants cited the skills that they had developed in their professional experience as a help in mitigating the challenging nature of PhD education. The literature on those undertaking the PhD with an existing professional identity suggests that these individuals are impacted in a variety of ways when it comes to developing a PhD student identity. However, what is less clear is how participants might have drawn

on their professional identities as transferable skills or tapped into their existing networks of support in enabling their progression.

While the interweaving of identities can be a challenge for full-time students, the literature is more limited in detailing the experiences of part-timers in developing and maintaining their PhD student identity. Given that for these part-time students, PhD study is often combined with more dominant work and personal demands, Mewburn (2011) points out how for these individuals the development of a PhD student identity can be more of a challenge. Gardner & Gopaul (2012) detail how for their part-time participants there is a need 'to wear different hats' (p. 69) in balancing their different identities with distinct boundaries. For most of their participants studying part-time conflicted with their notion that being a PhD student was equated with full-time study and this was a source of conflict. Robert recounted how he did not mention that he was part-time and working to his peers as he 'wanted to fit the mold of a traditional student' (p. 71). The demands of balancing work and family life with PhD study led their participants to feel that they were missing out on interacting with the department in their development as PhD students and this led some to feel that they did not completely belong to an academic community with an awareness of their 'otherness' (p.72) in comparison to their full-time peers. While limited, this literature has begun to highlight how student positioning can impact the development of the PhD student identity and is an aspect that requires further consideration.

Given the developmental nature of PhD study, Cotterall (2011) believes there are advantages in viewing the experience through an identity lens. She argues that the dynamism of the identity framework explains the fact that PhD researchers' confidence in their identity as scholars may fluctuate as circumstances change. Identity is constantly under construction and revision in the different contexts and

settings in which individuals operate. Since the process of constructing a scholarly self is so central to PhD learning, viewing students' experiences through the lens of a developing identity highlights aspects that other frameworks cannot. For Dall'Alba (2009) and Lee (2011) this is research that takes account of the ontological transformation of the student as they develop themselves into becoming a trained professional for a range of future careers.

Nonetheless, in examining the PhD student experience through an identity development lens much depends on the positioning, perception and future ambitions of the individual. Even for a full-time, fully funded PhD student, with an expectation of an academic career, the impact of the other identities they might have such as those of a parent or carer (Burford & Hook, 2019) will impact on the development of a PhD student identity. The foregrounding of the development of a PhD identity, has meant that consideration has not been given to those other identities that individuals bring to the qualification and how they might impact. McAlpine & Lucas (2011) discuss how existing identities are less well considered in the literature and they claim that this is because the research tends to focus more on the experiences of participants during their PhD studies. They suggest that identity research does not take sufficient account of an individual's past experiences and future imagined selves. They argue that it is crucial that research in this area should take account of participants' 'past experiences of intention' and how these might influence 'present intentions and aspirations' and future possibilities (p. 695). However, our understanding of how past experiences might impact the development of a PhD student identity continues to remain limited.

2.4 The PhD student experience

Having considered how the PhD has been conceptualised, in the second half of this chapter I will critically explore those aspects that are most prominent in the

literature in relation to the PhD student experience. This is a broad body of research based on both qualitative and quantitative studies, and in order to make it more manageable I have grouped it into the following themes: the supervisory relationship; the role of academic work; a sense of belonging and the role of significant others; the challenging nature of the PhD and how students adapt. I will begin with the most well-researched aspect of the PhD student experience - that of the relationship with the supervisor.

a) The supervisory relationship

To the PhD student, their supervisor is commonly 'the central and most powerful person' (Lovitts, 2001, p.131) who controls many crucial aspects of the PhD trajectory: their integration into the academic community and discipline, the topic and process of their thesis research and their career path following the PhD. Reflecting on this central positioning, Park (2008) states that, in the 1980s the supervisory relationship tended to inhabit a 'secret garden', in which the supervisor and student were engaged together, away from the public gaze and 'with little accountability to others' (p. 1).

During the 1990s, Manathunga (2005) claims that the small body of research on the PhD student experience began to expand and 'the spotlight was turned onto the private space of supervision' (p. 19). The need for universities to demonstrate increased monitoring and accountability of students undertaking the PhD as well as the requirement for university supervisory practices to be aligned to various codes of practice began to impact on the nature of the supervisory relationship. However, the literature continues to stress the benefits derived from the supervisor-student dyadic model, with the student working closely with an expert on a specific research matter of interest in a productive interpersonal relationship (Lovitts, 2001; Chiang, 2003 and Bair & Haworth 2004). In contrast, Deucher (2008) suggests that

the supervisory guidance provided is not always the type of support that students are looking for with supervisors offering pastoral support when the student is looking for advice on managing their research study.

Lee (2011) discusses how supervisors use a range of styles that include functionalist, enculturation and emancipation approaches and Hodgson (2017) highlights how there can be marked disciplinary differences in the nature of supervision. Supervision plays a major role in the enculturation of the PhD student to the practices of the scholarly community with supervisors providing access to resources, professional networks, expertise, and learning opportunities which are of critical importance for the student (Pearson & Brew, 2002). Wisker et al (2010) emphasise the multidimensional nature of the supervisory role and how there is an expectation that the supervisor is a mentor and an advisor to the PhD student as well as someone who provides emotional support and can 'challenge students intellectually... providing guidance as to reading and networking' (p. 24). However, Pyhältö et al (2015) claim that there is a paucity of empirical research that has addressed the fit between supervisors' and students' perceptions of supervisory activities and relationships.

Taking up this theme, Naidoo (2015) highlights how the PhD student can be dependent on their supervisor and as a result, as McAlpine et al (2012) suggest this may mean that students may deliberately conceal issues to avoid not measuring up to their supervisors' expectations or they may prefer to seek help from external networks. Manathunga (2015) also highlights how the PhD students in her research study were reluctant to discuss their research problems as they only wanted to impress their supervisors and this led to many of her participants concealing a lack of understanding of aspects of their PhD education. Other studies report that PhD students fear raising an issue to or about a supervisor (Metcalf et

al, 2018) and are worried about the repercussions because they cannot address their concerns anonymously (Lauchlan, 2019). At the same time universities are generally seen as reluctant to address supervision-related problems (Metcalf et al, 2018) and academics tend to place the blame on PhD students for their issues rather than on the department or the university (Gardner 2009).

Doloriert et al (2012) and Guerin & Green (2013) note the tension that exists for the supervisor in judging how much they intervene in a PhD student's research. Too much intervention can limit the development of independence and autonomy. Yet, the feedback that supervisors provide on written work is not just a question of frequency and quantity. It is complicated by theories of power relations which might be wrapped up with gender relations and ethnicity and is linked to PhD student's identity development and socialisation into disciplinary norms (Paré 2011).

The interactions that PhD students have with their supervisors while providing a sense of emotional support can also result in their perceiving the supervisory relationship negatively depending on the students' needs and expectations. McAlpine et al (2012) and Cotterall (2013) highlight how their participants viewed their supervisors as being intellectually and emotionally absent and unsupportive at times. The power differential embedded in the supervisory relationship meant that instead of discussing this lack of support with their supervisors, these students preferred to seek help from their networks outside of the university and deliberately decided not to ask their supervisors for help. Manathunga (2005) also highlights the issue of strategic silence and how the emotional aspects can be excluded from the supervisory relationship. The students in her research study were reluctant to discuss research problems as they only wanted to impress their supervisors. This led to many of the students concealing their lack of understanding of the tasks involved in being a researcher. Mewburn (2011) argues that this positioning of the

PhD student can have an emotional impact with the student deciding not to discuss their 'troubles' or being critical of a supervisory lack of support.

Cornér et al (2017) found having a constructive supervisory relationship, frequent meetings, a relaxed ambience during meetings and a sympathetic and caring attitude towards the supervisee have been associated with good progress and satisfaction with PhD study. Halse & Malfroy (2010) suggest that central for the functional supervisory interaction are mutual respect, flexible adjustment to the student's needs, clear communication between supervisor and student and explicit strategies for progressing towards PhD completion. Ismail et al (2011) argue that poor communication, a lack of expertise, and power conflicts between the supervisor and the student impact negatively on the PhD student experience.

For van Rooij et al (2021) it is the type of the interactions that are crucial in the supervisory relationship with availability being a key determining factor. They explain that supervisory availability does not only refer to frequent physical presence, but also to having frequent meetings with the PhD student and providing timely answers to questions via email and feedback on the student's written work. Several studies show that PhD students attach great value to their supervisors' availability, for example in providing prompt feedback, timely responses to questions and frequent meetings (Pyhältö, et al, 2015 and Woolderink et al, 2015). In addition to the quality of supervision (support and relationship), quantity also seems to matter with PhD students who perceive that they have frequent contact with their supervisors being less likely to consider withdrawing, indicating that frequent supervision protects against non-completion (Pyhältö et al, 2015). Similarly, regular contact between supervisors and PhD students has been found to reduce burnout and combat non-completion (Cornér et al, 2017).

Despite a growing recognition that PhD education is a shared responsibility among many participants (QAA, 2018), there is a persistent defaulting in the literature to the one-to-one supervisory relationship. However, more recently PhD students have, for instance, been found to emphasise social support and interaction with others as being just as important as the support they derive from their supervisors (Todd & Louw, 2019). A narrow conceptualising of what supervision is (i.e., a dyad) might not always be helpful for both PhD students and supervisors and Pyhältö et al (2015) found that supervisors had more diverse perceptions concerning the actors involved in supervision than PhD students. However, their participants who identified as drawing on several sources of support were the most satisfied with their supervision. Bengtson (2016) refers to the 'sprawling spaces of doctoral supervision', where sprawl 'does not denote an uncontrollable chaotic force' rather a 'non-linear, plastic understanding of learning spaces, not limited to formal and informal settings', including 'non-formal spaces' (p. 61). This literature would suggest that a broadening of the term supervision would be helpful in taking account of the various social agents and resources involved.

b) The role of academic work in the development of the PhD student

As part of their academic development, the production of acceptable academic writing plays a central role by which PhD students come to know their subject as well as their scholarly selves (Lillis, 2001; Wellington, 2010; Aitchison & Mowbray, 2013 and Kamler & Thomson, 2014). The research that has examined PhD writing has highlighted the range of difficulties experienced by students in 'getting started' with their writing, knowing when to stop reading and start writing, as well as not being familiar with the disciplinary conventions and supervisory expectations of writing at this level. For Kamler & Thomson (2014) writing is a process of making meaning and advancing understandings, and it is through writing that PhD students

produce knowledge. They argue that the process of writing is not a linear development of think first and then write, instead 'we write to work out what we think' (p. 3). As a result of creating and writing new knowledge, Trafford & Lesham (2009) claim that PhD students are transformed in their positioning and this contributes to a shift in their identity development. While acknowledging the key role that writing plays, Wellington (2010) states that it can also be a source of considerable anxiety for PhD students. As a result of its critical positioning in the production of the PhD, Aitchison & Mowbray (2013) argue that writing becomes a profoundly emotional component of PhD study.

In discussing the highly structured nature of PhD writing, Wisker et al (2010) discuss how the student needs to contend with the development of subject knowledge, understanding and working with the concept of theory and the challenge of the writing of research, together with cognitive shifts in their understanding. The PhD places much emphasis on the on-going use and application of theory and the situating of research into particular theoretical frameworks and the need to do this presents a particular learning challenge for PhD students.

Wisker (2015) highlights how for the PhD student there are notable points when the learning can be transformative. This includes during the upgrade and writing-up stages where students can experience shifts in understanding of their research and its underpinning concepts, as well as a deeper appreciation of the language of the discipline and of the research process. These moments of conceptual crossing Wisker (2015) identifies as including: identifying a research question; producing a literature review or theoretical perspectives chapter which situates their own contribution in the research dialogue; interpreting, theorising and developing findings from the data and producing a sound abstract and conclusion (p. 65).

The nature of PhD academic development is taken up by Kiley (2009) who suggests that the process incorporates three stages for the student - 'separation from one's known state, entering a state of liminality, and culminating in "becoming"' (p. 296). She further claims that the production of this PhD writing necessitates the crossing of conceptual thresholds whereby students can move from 'being stuck' in a liminal space in their understanding to gaining insight with breakthrough moments (Kiley, 2015, p. 53). This literature suggests that once a breakthrough in learning and academic writing has taken place the individuals' development is complete. However, other authors claim that a sense of liminality (Jazvak-Martek, 2009; Keefer, 2015 and Bengtsen & Barnett, 2017) or messiness (Mellor, 2001; Clark et al, 2007 and Barnacle & Mewburn, 2010) can be an ongoing state for the social science PhD student.

While there has been an emphasis in the literature on the developmental role of academic writing, a lesser focus has been given to those interactions in the academic community that also play a role. Carroll et al (2010) state that academic conferences provide PhD students with opportunities for learning, collaboration, and support from colleagues and mentors. For Fakunle et al (2019) the conference is an example of a non-traditional site of learning where individuals can interact, learn, and network with the wider global research community and they discuss how conferences provide a site for networking as much as for PhD students' learning and academic development.

Mantai (2017) claims that teaching plays a role for PhD students in preparing them for work in the academic environment and for Walker & Yoon (2017) having this experience can aid future employment opportunities. Just as with PhD writing and presenting at academic conferences, Kálmán et al (2019) highlight the structured nature of teaching in the university setting with its emphasis on student-centred

approaches to teaching that includes an attention on the individual needs of students within a competence-based education with learning outcomes and the acquisition of skills. For those wanting to undertake teaching in higher education there is a need to acquire the knowledge and understanding of these requirements, and as Hicks et al (2010) discuss, an ongoing demand for professional development. Along with having to adapt to this, Knight & Trowler (2000) claim that there is a need for PhD students to be able to align themselves with the perceived professional culture within a university department in relation to teaching. However, preparation for teaching is not a standard part of PhD skills training and as Homer (2018) highlights there is a need for students to undertake a separate qualification in order to 'learn to teach' (p. 80).

c) A sense of belonging and the role of significant others

The importance of having peer support in the doing of the PhD has been noted by a range of authors (for example, Lovitts, 2001; Phillips & Pugh, 2010; Zahl, 2015 and Mantai, 2017) and it is often most effective when it comes from friends who have also been or are going through the same experience so that problems can be shared, and encouragement can be provided. In relation to PhD study, Zahl (2015) defines belonging 'as feeling valued and appreciated by others in the community, developing mutual trust and encouragement and knowing that you genuinely matter to someone else' (p. 306). It links with students' feelings of acceptance, inclusion, fitting in and being valued. Jazvac-Martek (2009) suggests it is the department where PhD students begin to recognise commonalities with others as well as developing a sense of engagement and integration into a larger supportive intellectual community.

The social relationships that the PhD student forms with staff and other students in the department and wider communities also provides a supportive structure to

assist students in working through social, emotional and academic challenges that they are likely to encounter while pursuing the PhD (McAlpine et al, 2012; Spaulding & Rockinson-Szapkiw, 2012 and Acker & Haque, 2015). While Zahl (2015) argues that these student relationships provide the strongest sense of community for the PhD student, they do not always have to be department-based and they can take place in many different environments, such as in informal learning spaces, in social settings and in professional encounters such as conferences. Corcelles et al (2019) note how the social dimension of PhD study is considered the most rewarding for some students with their participants emphasising the importance of having access to communities to receive expert feedback, communicate research and interact with other researchers.

McAlpine & Norton (2006) claim that for PhD students in the social sciences the meaning of community is a complex, multi-layered and 'nested entity' (p. 6). Generally, within the social sciences, PhD students rarely work as part of a team and as a result contact with other research students can be minimal. Although the provision of structured research training brings PhD students together, such core courses on their own cannot really be said to foster a community in the sense of constructing shared goals, history or recognisable community boundaries. Vekkaila et al (2013) argue that a sense of belonging to academic and social communities for PhD students is not a constant and develops as they progress and will become more or less important at different times depending on the stage the student is at in their PhD study and depending on what they gain from feeling this sense of belonging.

Vekkaila et al (2013) argue that a mismatch between the student and the institution and insufficient interaction of the student with their department can mean that the PhD student lacks a sense of belonging that can result in disengagement and

eventual withdrawal. However, much is dependent on a student's perception of a sense of belonging to their academic community and what difference, if any, this might make to them. Pyhältö et al (2009) discussed how over half of the 600 doctoral students they interviewed felt that they were members of their academic community, with a third seeing themselves as outsiders and the rest had an unclear perception of their status. While feeling like an outsider does not necessarily mean that a PhD student will have a great degree of disengagement, what this research does seem to indicate is that regular, positive interactions with academic communities makes a difference to the level of engagement a PhD student will have. Stubb et al (2011) state that PhD students who experience support from an academic community emphasise how a sense of belonging made them continue to work hard.

Not all interactions that a PhD student will have with other students are positive in nature. Cotterall (2013) details how her participants' interactions with other PhD students were uniformly negative with a lack of opportunity to share socially being highlighted. Acker & Haque (2015) argue that the positionality of the student can impact on the way that they emotionally experience their PhD education. The black American participants in their study felt a resentment about their perception of an unequal access to resources and departmental support compared to their white colleagues. Jairam & Kahl (2012) highlight how close social interactions between PhD students can also result in a sense of competition. Anderson & Swazey (1998) suggest that PhD students often view themselves as being in competition for departmental time and resources and in believing that some students are more favoured than others in their studies.

In terms of building meaningful connections in PhD study much is dependent on the status of the student in terms of their level of access to academic communities.

For instance, part-time PhD students can face the most challenges in this regard as they are often based off-campus, struggle to attend institutional events and find it a challenge to build relationships with academic staff because of the fractional nature of their study, all of which reinforces structural isolation from strategic communities. That said, many PhD students do not feel sufficiently integrated into the academic life of their institution regardless of their status (Bennett & Turner, 2013). Castello et al. (2017) note how this difficulty in integrating into academic community of the department and the broader disciplinary communities was the second most frequently cited reason for considering withdrawal from PhD study.

While a sense of belonging has been highlighted in the literature on the PhD student experience, Mantai (2017) claims that outside of the university environment we know little about how other social networks may play a role in acknowledging and supporting the PhD student. Support from family is the most discussed source of support among PhD students (Gardner & Gopaul, 2012) and is critical for PhD student persistence (Hlabse et al, 2016 and Volkert et al, 2018). In addition, social support, specifically attributed to students' networks of family was identified as important to academic success (Jairam & Kahl, 2012).

Todd & Louw (2019) discuss how there are a range of social agents who provide the PhD student with support and these include family members and personal friends. Similarly, Breitenbach et al (2019) reveal that family includes not only nuclear family members but friends and colleagues indicating that PhD student social support comes from various sources. For McCray & Joseph-Richard (2020) any loss of personal or emotional support created by issues with supervisors was mitigated, for their participants by other relationships they had created with their family, friends and community. Extending on these networks of support and significant others, Walker & Yoon (2017) discuss how those with *doctoral capital*

(p. 401) begin the qualification with a network of connections and mentors that they continue to draw-on during their studies.

The literature suggests that belonging to an academic community is crucial to the PhD student in providing support, while other networks of support, including family, friends, colleagues and mentors seem less well-understood.

d) The challenging nature of the PhD and how students adapt

Aside from the potential challenges PhD students face from their supervisory relationship, the production of academic writing and lack of a supportive community, over the past twenty years the literature has captured a variety of additional issues that can challenge those undertaking the qualification. These studies have found that PhD students suffer from stress and experience isolation and low levels of intrinsic motivation (Hermann et al., 2014 and van Rooij et al, 2019). Along with the pressures of life away from the PhD and surviving on reduced finances over a long period of time are all known to contribute to the challenging nature of PhD study (Wisker et al. 2010; Hunter & Devine 2016 and Levecque et al, 2017).

Morrison-Saunders et al (2010) describe how the social science PhD is a highly individual, isolating experience with the result that the student experiences the qualification as an 'emotional roller coaster' (p. 209). The participants in their study recorded how their PhDs were an emotional mixture of 'anxiety, boredom, excitement, fear, frustration, elation, satisfaction, loneliness' and even 'slight insanity' (p. 209) and how a plethora of positive and negative emotions are felt by the student throughout their research experience.

Various authors (Onwuegbuzie, 2000 and He, 2017) claim that academic procrastination is a challenging aspect of the life of a PhD student. Within the research it has been found that PhD students delay completing their studies due to

situational, programme-specific, cognitive and affective factors that cause them to engage in procrastination (Frank, 1984; Muszynski & Akamatsu, 1991 and Green, 1997). Barnett (2008) and Hwang et al (2015) suggest that such external obligations can be the cause of PhD student procrastination leading to delays, a lack of motivation and can ultimately result in the failure of the student to complete their research studies.

Similarly, the literature has highlighted how imposter syndrome can result from the challenging nature of the PhD environment (Knights & Clarke, 2014). The PhD need for higher-order thinking/reasoning and communication skills, a long and undefined completion time and sense of not belonging as a PhD student due to the perception that one lacks the ability can all manifest in feelings of being an imposter (Burt et al, 2017).

Taking into account the emotional nature of PhD study and evidence that suggests a significant incidence of mental health issues (Levecque et al., 2017; Sverdlik et al., 2018, Woolston, 2019), universities have begun to focus on providing support services for these students. Mackie & Bates (2019) report that PhD students display a higher incidence of poor mental health and wellbeing than comparable groups although no studies appear to have examined whether this is a causal relationship or the result of the selection of certain sets of individuals into PhD study who may be predisposed to poorer mental health. A range of risk factors have been identified that include the quality of the supervisory relationship, financial issues, labour market uncertainty, role conflict (for example, between family and work) and excessive workload. In relation to those undertaking PhDs in the social sciences, it is not clear if these individuals are more or less exposed to these issues, nor how their mental health and wellbeing compares to their peers in other disciplines (CFE Research and the University of York, 2020). However, in providing wellbeing and

mental health support services, Vitae (2018) highlights how this can be shared in universities between Student Support Services, Graduate Schools and supervisors and that this can lead to a lack of clarity around who provides what for the PhD student in accessing services.

While the literature has highlighted how the department and university are the primary sites where researcher identities begin to be forged, for many PhD students there are challenges in finding other sites for undertaking research work. Dowling & Mantai (2017) identify how the home is the most significant off-campus site. However, it is also a complex location, offering opportunities for silence and solitude as well as potential disruptions, particularly for those with caring responsibilities (Burford & Hook, 2019). Dowling & Mantai (2017) foreground the home as both a location that 'fractured and disrupted' PhD students attempt to work in, as well as a location that may isolate students from the research community, supervisors and the sense of being a 'real' researcher (p. 205).

Gardner (2008) identifies how through the process of successful socialisation, PhD students end-up 'fitting the mold' (p. 63). In their work on the characteristics of student fit in the PhD environment, Baker & Pifer (2015) claim that this comes about through participation in disciplinary and institutional settings, where students are able to observe values related to collegiality, productivity, standards of excellence and professional behaviour. However, this can be more of a challenge for underrepresented groups of students seeking to belong to a community, yet failing to obtain knowledge of the rules, guidelines, and culture needed to engage with more recent research beginning to highlight the barriers. Wakeling et al, 2016 highlight how in accessing PhD study much is dependent on the socio-economic background of potential candidates with 'the rate of immediate progression for

groups from a routine occupational background being less than half that of those from higher managerial and professional occupational backgrounds' (p. 1).

In relation to the challenges of fitting-in, ethnicity has been identified as a factor that contributes to some PhDs students feeling challenged by the academic environment. While black, Asian and minority ethnic (BAME) PhD students report similar sets of issues as others in terms of financial insecurity and supervision issues, these tend to be experienced more acutely, and as part of intersectional disadvantage (Mattocks & Briscoe-Palmer, 2016 and Arday, 2017). These PhD students also report experiencing the 'institutionalised whiteness' (Joseph-Salisbury, 2019, p. 1) of the academy, in common with the testimony of BAME academic staff (Bhopal and Jackson, 2013 and Equality Challenge Unit, 2014). In her *Barriers to Doctoral Education* (2020), Lindner notes how in terms of equality, diversity and inclusion there are significant obstacles experienced by those already disadvantaged on the pathway to PhD study that include:

financial need, availability of knowledge about the research environment and awareness of potential career paths, visibility of role models and access to mentorship, inclusive and equitable treatment, connection to community, and sufficient and appropriate support mechanisms and resources to manage their wellbeing. (p. 43)

2.5 A summary of the PhD student experience literature and the research gaps

This chapter has provided an overview of the changes to the PhD over the last thirty years and how the literature has conceptualised the experience of those undertaking the qualification and the resulting areas of research. The literature has begun to highlight the less than linear nature of different aspects of those undertaking the qualification with a focus on the ongoing significance of the

supervisory relationship as well as other networks of support, the roles played by research writing and interactions in the academic environment and the value of PhD students having a sense of belonging with their institution as well as the role of significant others. In comparison to 15 years ago, our understanding of the PhD student experience is now much more comprehensive and is no longer one mainly of 'gaps' (Leonard, 2006, p. 37).

However, a limitation of the largely descriptive nature of students' experiences of the PhD is that they rarely extend beyond description to illuminate the deeper, frequently interrelated processes and impacts that students engage in during the PhD process. Nor does this literature sufficiently theorise students' experiences to promote different perspectives that can extend and challenge current understandings of PhD study. The various conceptualisations applied to the PhD have highlighted the multidimensionality (Pearson, Evans, & Macauley, 2008) of the experience, however gaps remain with these frameworks taking little account of its interconnected nature and they do not frame the challenges, adaptations and resistances of the PhD experience theoretically or promote an integrated view of its complexity.

The more recent literature on the PhD student experience has begun to highlight how aspects of participants' background can impact on their positioning in undertaking the qualification. The impact of ethnicity, socio-economic diversity, gender and disability are all beginning to receive some much-needed research attention. However, further research is still required on these aspects as well as a range of other features such as combining PhD study with family and caring responsibilities and how for those coming to the PhD with a well-developed professional identity are impacted by these experiences. As stated in chapter one, for those undertaking social science PhD study this is a very real issue as many

can be mature and come with range of professional experience that is often in a related area to the research they are doing. However, we have a gap in our understanding of the impact of these aspects in PhD student development.

As a result of the expanding literature on the PhD student experience, McCray & Joseph-Richard (2020) highlight how we have a greater understanding of what individuals struggle with. However, in relation to these challenges, what seems to be less well understood is what helps individuals in adapting. The literature has highlighted how academic integration can help in the process of adaptation and supporting PhD student progression with involvement in professional activities and opportunities, collaborating with researchers, frequent contact with supervisors and integration in the department community (Spaulding & Rockinson-Szapkiw, 2012; Zahl, 2015; Walker & Yoon, 2017 and Sverdlik et al, 2018). The literature highlights how receiving regular feedback from supervisors can be key in establishing a formative PhD student identity (Cotterall, 2011 and Pyhältö et al, 2015). While the value of planning and organisation in PhD study has been discussed and van Rooij et al (2019) claim that 'process-related skills, such as planning and time management' (p. 3) are helpful in aiding adaptation.

Outside of the literature on PhD adaptation, various authors (Hopwood, 2010; McAlpine & Lucas, 2011 and Burford & Hook, 2019) have discussed how forms of agency play a part in resisting the challenging nature of PhD study. Nevertheless, our knowledge of how individuals might challenge the structured nature of PhD study remains limited as the literature has tended to focus on how individuals might struggle and not on how they might resist. As a result, Hopwood (2010) argues that the research that has been undertaken has tended to position PhD students as 'a population subject to rather than co-constructing or resisting structures' (p. 104) and this has meant that there are relatively few accounts of the PhD student

experience that present individuals as shaping their own learning, practices or wider social environments.

While recognising the increasing diversity of those undertaking PhD study, the literature has tended to focus on a too narrow reading of their experiences (Burford & Hook, 2019) and this has raised various questions. For instance, how might past experiences outside of the PhD impact and inform? How might PhD students be helped or hindered by their other identities or the expectations they might have had of the qualification? Given the challenging and liminal nature of PhD study (Keefer, 2015 and van Rooij et al, 2019), is there a need for ongoing adaptation and in some cases resistance? If so, what do students draw on to enable this to take place? Indeed, how do PhD students' 'past experiences of intention' influence their 'present intentions and aspirations' and future possibilities? (McAlpine & Lucas, 2011, p. 695).

The points raised in this chapter are multifaceted, encompassing a range of structural, organisational and individual issues and the following chapter will develop the theoretical framework that will be used in this thesis to try to make sense of the ways in which PhD students challenge, adapt and resist aspects of the qualification.

Chapter 3 Theorising the PhD student experience

3.1 Introduction

In this chapter, the theoretical framework guiding my study is examined. As I discussed in the previous chapter, the literature has tended to conceptualise the PhD student experience in categorical ways with a structure/object approach with little account taken of its interconnected nature. When I began my research, I also initially adopted this same dualist perspective exploring the experience using Bourdieu's concepts of habitus, field and capital. However, while these theories were helpful in considering the PhD study as a field where forms of capital could be drawn on, given what I had witnessed professionally and as a PhD student I did not find this approach successful in accounting for the interconnected aspects of PhD study in an engaging way. Instead, I found that the work of Deleuze & Guattari offered an approach that would help to take account of the multidimensional nature of PhD study with its challenges, adaptations and forms of resistance. In particular I found that their concepts of the assemblage with its connected molar, molecular and flight lines offered my study a way to take account of the interconnected nature of the PhD student experience. This chapter then discusses how the complexities in undertaking the qualification can be explored by drawing on these Deleuzoguattarian concepts.

Gilles Deleuze and his collaborator Félix Guattari are among a number of French post-structuralist philosophers that include Derrida and Foucault, who question western philosophy in its production of conformity, in the way we think and act and approach the question of how one might live by embracing ontology (May, 2005). Prior to their meeting, Deleuze influenced by the work of Spinoza, Nietzsche and Bergson set out to understand the world as an inherently dynamic process, rather than one governed by the static principles of identity. In *Difference & Repetition*

(1994) and *Logic of Sense* (2015) Deleuze argues that the thinking that had dominated western philosophy since Plato has made the recurring mistake of assuming that the basis of thought must be something unchanging and unified. Dosse (2011) states that for Deleuze, philosophy has consistently directed itself towards the goal of attaining changing knowledge of that which does not change. According to the platonic tradition, our understanding of the world must be based on identity, with any differences only being thought as secondary relations between things. Similarly, change itself must be thought of as a kind of deviation from the otherwise essentially static nature of truth. In attempting to reverse this tendency, Deleuze offered a new metaphysical system centred around the concept of difference.

Unlike Deleuze, Guattari was not a philosopher, but a psychoanalyst who was intent on developing a method for the treatment of psychosis with his major theoretical revision to both Freudian and Lacanian methods being his attempt to think of psychosis as a social and cultural occurrence, rather than simply as an individual ailment. Dosse (2011) argues that what both Guattari and Deleuze had in common before collaborating was an aversion to the centrality of the individual. For Deleuze, this was manifest in his philosophical critique of the concept of identity, while for Guattari it revealed itself in his attempts to develop a psychoanalytic theory that did not foreground the individual subject. In their first collaborative work, *Anti-Oedipus* (1977), Deleuze & Guattari set out a philosophical and political critique of the traditional psychoanalytic institution, its interaction with the history of capitalism and their shared belief in a philosophy of identity and a conception of desire as lack. Rather than viewing the world as essentially static and unitary, for them the world is an open-ended dynamic process, the constituent parts of which are not objects of identity, but further processes. This book made up the

first half of their *Capitalism and Schizophrenia* series and sets out a revolutionary project that unsurprisingly came in the wake of the riots in France in May 1968.

A number of authors (for example, Parr, 2010; Holland, 2013 and Windsor, 2015) claim that the terminology used by Deleuze & Guattari can be perceived as difficult and since their concepts are not in wide academic use, the position of anyone attempting to explain and apply them can be a challenge. Given this complexity, the approach I have taken in this chapter is to start by providing an overview of their philosophical approach. This will be followed by more detailed descriptions of the specific concepts that will feature in later chapters of this thesis. These explanations will draw on the work of Deleuze & Guattari as well as the writings of a range of authors in providing interpretations of their work.

While using the work of Deleuze & Guattari, my research is not an in-depth study of their entire philosophical approach but rather it takes certain concepts that were critical for them in providing an analysis of how things are made up of 'a multiplicity of dimensions, of lines and directions' (Deleuze & Parnet, 2007, p. 100). Amongst their multitude of concepts, in my study I will primarily take their concepts of the assemblage, molar, molecular and flight lines followed by a use of rhizomes, nomos and logos to explain the processes of connection between things. I will take these concepts to analyse my participants' accounts of the PhD experience.

In working with these concepts, I draw on the second part of their *Capitalism and Schizophrenia* series, *A Thousand Plateaus* (Deleuze & Guattari, 1987). Throughout this book, Deleuze & Guattari develop a vocabulary that emphasises how things connect rather than how they are. They understand things not as substances, but as connections, focusing on things in terms of unfolding forces, bodies and their powers to affect and be affected, rather than static essences (Lorraine, 2010). Holland (2013) states that this book is best understood 'as

providing the metaphysics appropriate to contemporary science' and this metaphysics is used to 'address questions of epistemology, ontology, anthropology, ethics and politics' (p. 16). The book is made up of a series of 'plateaus', and Adkins (2015) explains that a plateau is an assemblage that organises intensive processes into temporary stable states that can be given specific dates but can neither persist nor be repeated. The concepts discussed in this chapter are drawn from four sections in *A Thousand Plateaus*: chapter 1: *Rhizome*, chapter 8: 1874: *Three Novellas, or "What Happened?"*, chapter 9: 1933: *Micropolitics and Segmentarity* and chapter 10: 1730: *Becoming Becoming-Intense, Becoming-Animal, Becoming-Imperceptible*.

Deleuze & Guattari produced a 'cornucopia of concepts' (Windsor, 2015, p. 156) that have been applied in a range of fields, including anthropology, architecture, literature, art, film and media studies. Within educational research, use has been made of the assemblage to explore the undergraduate transition (Taylor & Harris-Evans, 2018) as well as the structuring of higher education (Bacevic, 2019). The triad of lines have been applied to educational experiences in school settings (Bazzul & Kayumova, 2015; and Strom & Martin, 2016) and in medicine (Cristancho & Fenwick, 2015). Having explored the literature in the field of PhD education, the concepts have had far more limited application, with the concept of the assemblage being used to discuss the supervisory relationship and the rhizome for the less than linear notions of growth and development in the PhD student experience (Taylor et al, 2011; Guerin, 2013 and Fullagar et al, 2017). Therefore, my study's adoption of a wider range of Deleuze & Guattari concepts will supplement this growing body of research by adding an alternative approach to conceptualising the experience of those undertaking a PhD in the social sciences.

This chapter begins by introducing the Deleuzian ontology followed by an exploration of the concepts that I will use in my research and their value in exploring the PhD student experience before ending with a summary of the chapter that brings together the theoretical framework guiding my study.

3.2 A Deleuzian ontology

Todd (2005) states that the works of Spinoza, Bergson and Nietzsche provided Deleuze with the motivation and framework for his ontology of difference with immanence being a foundational concept. I will begin this section by introducing immanence so as to provide a background to his philosophical approach. However, while acknowledging its place in his work, I will not be working with the concept directly in my study.

In his philosophical method Deleuze drew on Spinoza in making a distinction between transcendence and immanence with both of these being at the heart of different systems of metaphysics. Transcendence refers to that which is outside the subject, such as the external world or the other and that which transcends the field of consciousness and includes the ego in relation 'to' something. Rather than this sense of separation, immanence in contrast refers to the sphere of the individual and means existing or remaining within. Coleman & Ringrose (2013) note that 'immanence refers to the specificity or singularity of a thing' (p. 10) and not the abstract terms it can be made to fit into, such as discussing a person or institution in relation to neo-liberalism.

While the concept of transcendence has theological roots and operates in a hierarchical system with lower realms finding value and definition in relation to higher ones, immanence has no such ranking and instead it is univocal with a singleness of voice or expression and only substances of being. However, while

Deleuze claims that univocity is an organising principle of Spinoza's philosophy, there is a total absence of the term in any of Spinoza's work (Surin, 2010).

Smith (2003) states that in immanent ontology there is no 'higher than' or 'superior to' Being (p. 48). Deleuze's philosophy of immanence emphasises connections over forms of separation and Williams (2010) states that these connections must be 'a connectivity between relations and not between identities' (p. 129). Unlike transcendence, there are no closed structures in Deleuze's immanence and from the start he defined structures, whether mathematical, philosophical, or otherwise as fundamentally 'open' and he saw metaphysics itself as an open structure, which is far from having exhausted its 'possibilities' (Smith, 2003, p. 50). The emphasis on the relationality of bodies is what underpins Deleuze's relationship with Spinoza and it enables 'Deleuze to reformulate the question of human agency in terms of the entanglements of bodies and the differential intensities produced through the ebb and flow of relational capacitation' (Roberts, 2019, p. 126).

Deleuze also drew on two aspects of Bergson's work in his philosophical approach: the concept of multiplicity and the temporality of duration without which immanence cannot exist (Todd, 2005). A multiplicity is a complex structure that does not reference a prior unity and the idea of duration is not spatially predetermined but continually alters its past through cognitive movement. In discussing the concept of duration, Lapping (2017) notes how for Deleuze this relates to the continuity that results from habit and can appear in a variety of forms.

Smith (2003) states that as part of Deleuze's philosophy of immanence is an analysis of ontological difference and the concept of difference is fundamental to Deleuze's ontology: 'difference is behind everything, but behind difference there is nothing' (1994, p. 57). It is concerned with understanding the world as relationships and more particularly through the concept of difference: intuiting life as difference,

not as something that is at first a thing and then changes and differs, but as the power to differ. This is in contrast to the Platonic tradition where our understanding of the world must be based on *identity*, with any *differences* only being thought of as secondary relations between things. Similarly, in the Platonic tradition, change itself must be considered as a kind of deviation from the otherwise essentially static nature of truth. Whereas in *Difference and Repetition* (1994), Deleuze set out to understand the world as an inherently dynamic process, rather than one governed by static principles of identity and in an attempt to counter this 'image of thought' (p. 129) Deleuze produced a new metaphysical system, centred around the concept of difference.

Deleuze drew on the work of Nietzsche in the development of his ontology of difference with his creative affirmation of difference that does not reference some form of identity. In doing so, Spinks (2010) notes how Deleuze further developed how Nietzsche had himself reworked Spinozan ideas of expressivism. Expressivism suggests that there is nothing other than the becoming of specific and singular qualities and these do not need to be related back to some neutral ground or substance. Nietzsche argued that we do not need to relate actions back to a subject, nor do we need to see events as having a pre-existing cause. These ideas provided Deleuze with a way of developing the concept of immanence. So, if there is not a substance which then becomes, or a substance which then takes on qualities, it follows that there is no dualist distinction between being and becoming.

Central to Deleuze's ontology of difference is that creation is not a linear process from non-being to being, but instead it is a constant process of individuation and as such is a philosophy of becoming.

3.2.1 Difference-in-itself

Stagoll (2010) claims that Deleuze is often labelled as a 'philosopher of difference' (p. 72). Deleuze argues in *Difference and Repetition* (1994) that difference is not something that arises between two identities. Instead, he puts forward an idea of what he calls 'difference-in-itself' (p. 67), a concept he uses to challenge the primacy of identity and representation by theorising difference as it is experienced.

Grosz (2006) claims that difference has tended to be conceived in one of two ways. Either it is construed as being comparative, an external difference between entities which can be measured or represented according to a third or extrinsic term, a metric which determines relations of more or less; or it has been understood as constitutive, an internal relation of terms which structures them according to their negative relation to other terms. In either case, it refers to a net variation between two entities. Such a conception assumes that states are comparable, and that there is at base a sameness against which variation can be observed or deduced. As such, Stagoll (2010) claims that difference becomes merely a relative measure of sameness and being the product of a comparison, it concerns external relations between things. To think about such relations typically means grouping like with like, and then drawing distinctions between the groups.

For Deleuze (1994) this conceptualisation of difference is subordinated to sameness and becomes an object of representation in relation to identity. As such, it is never conceived in terms of 'difference-in-itself', the uniqueness implicit in the particularity of things and the moments of their conception and perception. Rather, difference is understood in terms of resemblance, identity, opposition and analogy, the kinds of relations used to determine groupings of things. Yet for Deleuze this tendency to think in terms of sameness detracts from the specificity of concrete experience, instead simplifying phenomena so that they might 'fit' within the dominant model of unity.

In contrast, difference for Deleuze, is not a concept bound up with units, entities, or terms. As Grosz (2006) explains 'it is a relation between fields, strata and chaos. It is a movement beyond dualism, beyond pairs, entities or terms. Difference is the methodology of life, and, indeed, of the universe itself' (p. 6). Deleuze's 'liberation' of difference means a concept that does not rely on a relationship with sameness and in this he challenges the philosophy of representation. Rather than seeing difference as a difference between two things, for Deleuze (1994) difference must be thought of as the continual movement of self-differing. Roffe (2010) explains that this difference is 'like the continual variation of a sound rising and lowering in pitch without stopping at notes in a scale' (p. 296).

Deleuze (1994) argues that we ought not to presume a pre-existing unity but instead take seriously the nature of the world as it is perceived. By which he means the particularity or 'singularity' of each individual thing, moment, perception or conception. Such difference is internal to a thing or event, implicit in its being. Even if things might be conceived as having shared attributes allowing them to be labelled as being of the same kind, Deleuze's conception of difference seeks to privilege the individual differences between them. Such individuality is, for Deleuze, the primary philosophical fact, so that, rather than theorising how individuals might be grouped, it is more important to explore the specific and unique development or 'becoming' of each individual. The genealogy of an individual lies not in generality or commonality, but in a process of individuation determined by actual and specific differences, multitudinous influences and chance interactions.

In contrast to Deleuze's philosophical approach and his conceptualisation of difference, the literature that I examined in chapter two on the PhD student experience is underpinned by a structure/object dualism that has tended to reflect aspects of commonality with studies exploring how particular groups in similar

contexts experience the qualification. This can be seen in the conceptualisation of socialisation and how through this process PhD students end-up 'fitting the mold' (Gardner, 2008, p. 63) with a prescribed set of characteristics and outcomes in keeping with the requirements of the qualification. In contrast, the aim of my study is to take account of 'the complexity and diversity of doctoral lives' (Burford & Hook, 2019, p. 1343) and to explore the differences that they bring to the experience. In wanting to offer this alternative approach, the Deleuzian conception of difference is helpful and with a diverse group of participants, I am looking to explore those continual movements of self-differing with a focus on how my participants' experiences differ from that which has been researched as well as how they differ amongst each other.

Thus, the conception of difference-in-itself provides me with a starting point and focus in exploring these forms of differentiation in my participants' experiences of the qualification. However, Coleman & Ringrose (2013) note that mapping differences can be problematic, when for Deleuze 'something is unique and singular which has no equal or equivalent' (Deleuze, 2001, p. 1). In response to this Coleman & Ringrose state that concepts need to be 'creative' (p. 7) where they emerge through an ontology of becoming and I will explore this further in section 3.3.

3.2.2 A process of becoming

Stagoll (2010) states that, in addition to the concept of difference, the concept of becoming is one of the cornerstones of Deleuze's corpus. Deleuze uses the term becoming to describe the continual production of difference, the perpetual emergence and evolution of relationships that ultimately constitute events. The concept of becoming originated in ancient Greece with the philosopher Heraclitus stating that nothing in this world is constant except change and becoming (Bolton,

1985). In philosophy the word becoming concerns a specific ontological concept that is connected to the concepts of movement and evolution. It is the process or state of change in time and space.

Stagoll (2010) stresses that for Deleuze becoming is not a phase between states or a range of states through which something might pass as it undergoes change. 'Rather than a product, final or interim, becoming is the very dynamism of change, situated between heterogeneous terms and tending towards no particular goal or end-state' (p. 21). Deleuze (1995) wrote that becoming is not part of history: 'history amounts only to a set of preconditions, however recent, that one leaves behind in order to 'become', that is to create something new' (p. 171). In collaboration, Deleuze & Guattari (1987) wrote that all becoming is only about the process itself: 'Becoming produces nothing other than itself ... What is real is the becoming itself, the block of becoming, not the supposedly fixed terms through which that which becomes passes' (p. 238).

According to Stagoll (2010), Deleuze argues that the processes of change or becoming have their own duration and becoming must be conceived neither in terms of a 'deeper' or transcendental time, nor as a kind of 'temporal backdrop' against which change occurs (p. 22). Instead of being about transitions that something initiates or goes through, Deleuze's theory holds that things and states are products of becoming. The human subject should not be conceived as a stable, rational individual, experiencing changes but remaining, principally, the same person. Rather, for Deleuze, one's self must be conceived as a constantly changing assemblage of forces, 'an epiphenomenon arising from chance confluences of languages, organisms, societies, expectations, laws and so on' (ibid, p. 22).

In the previous chapter I examined how the literature on the PhD student experience has noted the liminality of the process, but also how authors (e. g. Kiley,

2009 and Wisker, 2015) have presented it as a process of threshold crossings with the student being challenged by one aspect of the qualification, adapting and then moving on. However, as I discussed in chapter one this has not been my professional experience where the qualification has features of an ongoing process of adaptation and emergence. Lee (2011) suggests that in undertaking doctoral research there is a 'Deleuzian sense' of 'becoming other' and the use of Deleuze's concept will enable my study to take account of and explore this process of becoming other in the PhD experience, when participants acquire new knowledge or ways of doing research, or when there are positive interactions in academia or they just have an increased confidence in their progression and how these might help in overcoming the liminal nature of the experience.

In the next section I will introduce the Deleuzoguattarian concepts that I will use in this thesis to explore the interconnected nature of the PhD student experience.

3.3 A framework of concepts with which to analyse the PhD student experience

For Deleuze & Guattari, philosophy is an activity that consists in 'forming, inventing and fabricating concepts' (1994, p. 2) and perhaps unsurprisingly for them these concepts also go through an ongoing process of becoming. Stagoll (2010) states that for Deleuze & Guattari, concepts are means by which we move beyond what we experience so that we can think of new possibilities, as he explains,

Rather than bringing things together under a concept, they are interested in relating variables according to new concepts so as to create productive connections. A concept is created or thought anew in relation to every particular event, insight, experience or problem, thereby incorporating a notion of the contingency of the circumstances of each event. (p. 53)

Smith (2012) states that from a Deleuzian perspective, concepts have no strongly defined identity and only a becoming. How then can researchers work with something that exists only through its evolution?

An answer to this can be found in Deleuze & Guattari's own methodology. In order to give an account of an individual, they state that we must first give an account of that which existed before such an individual arose. In other words, using the Deleuzian philosophy of becoming we need to seek to explain the genesis of being. For example, in the introduction to *A Thousand Plateaus*, Massumi (1987) provides the analogy of a concept and a brick: while the brick can be used to build 'the courthouse' or can 'be thrown through the window' (p. xii), it should not be understood as a complete object. Thornton (2018) states that instead 'the brick has its own process of becoming that proceeds its use either as being part of a building or as a weapon of revolt. The brick does not pre-exist its activity but is engaged in a constant process of genesis through its activity' (p. 27).

Furthermore, in his discussion with Foucault, Deleuze (1977) states that 'A theory is exactly like a box of tools...It must be useful' (p. 208). For Deleuze a theory is not a set of discrete tools, but a collection that functions together with each one defined by the connections it has with the group. Thornton (2018) states that for Deleuze 'a concept, like a tool is constituted by its process of becoming and can only be understood through the interrelationships it has with other concepts and through the affects that these relationships create' (p. 27). Therefore, taking inspiration from Deleuze and Guattari's approach, the concepts used in this thesis are there to chart the processes of becoming of my participants as well as demonstrating how these concepts interconnect and what this reveals about the PhD experience.

Despite Deleuze claiming that concepts only contribute as a way 'to order, label and measure individuals relative to an abstract norm' (Stagoll, 2010, p. 53), he did concede that concepts help us to organise and represent our thoughts to others. With this in mind, in the next section I will detail how Deleuze & Guattari and a range of authors have discussed the concepts used in this thesis.

3.3.1 Assemblages

The term assemblage derives from the French word *agencement*, whose meaning translates as "arrangement", "fitting, or "fixing" (Phillips, 2006, p. 108). While *agencement* implies the connection between specific concepts, an assemblage is the integration and connection of these concepts. It also implies that it is both the connections and the arrangements of those connections that provide the context for assigned meanings. While each part of the assemblage may be separated and has separate uses, when connected to other elements as part of an assemblage these properties only exist as part of that assemblage. For example, Deleuze explains how when the stirrup is combined with the horse and the warrior these elements are transformed into an assemblage that allows the warrior to use a weapon while mounted (Deleuze & Parnet, 2007).

While the content of assemblages are heterogenous, there are four ways of arrangement in which the elements are laid out or segmented: territorial, state, capitalist and nomadic. Territorial assemblages are arranged in such a way that the concrete elements are coded according to a natural or proper usage. Deleuze & Guattari (1987) provide the example of the house that is 'segmented according to its rooms' assigned purposes' (p.208). They also discuss the limits that territorial assemblage sets: "As soon as we finish one proceeding we begin another, forever proceduring or procedured, in the family, in school, in the army, on the job. School tells us, 'You're not at home anymore'; the army tells us, 'You're not in school

anymore” (p. 209). Nail (2017) discusses how state assemblages are arranged in such a way that the conditioning relations attempt to unify or totalise all the concrete elements and agencies in the assemblage. While in the capitalist assemblage, it is no longer the concrete elements that drive the process of progressive change (as in the territorial assemblage), but the agent or persona that becomes disengaged from the assemblage. In contrast, nomadic assemblages are arranged in such a way that the conditions, elements, and agencies of the assemblage are able to change and enter into new combinations without arbitrary limit.

For Deleuze & Guattari (1987) all assemblages have concrete elements, and they use the term territorialisation to describe the ordering of the elements that create the assemblage. However, within the ordering of elements, assemblages do not remain static, and they are further characterised by processes of deterritorialisation and reterritorialisation. Deterritorialisation can be described as a move away from a rigidly imposed hierarchical context that packages things into discrete categorised units with singular codes, meanings or identities towards a territory of multiplicity, that opens-up the possibility of fluid identity. Reterritorialisation describes the process by which new components enter and new articulations are forged, thus constituting a new assemblage. In discussing this assemblage evolution, Patton (2010) explains how ‘deterritorialisation is always bound up with correlative processes of reterritorialisation, which does not mean returning to the original territory but rather the ways in which deterritorialised elements recombine and enter into new relations’ (p. 70).

Deleuze & Guattari (1987) provide the evolutionary example of the movement of a species from the sea to living on the land and it is the changes that happen to both the species and the land as part of this movement that they refer to as deterritorialisation. In contrast, reterritorialisation is the restructuring that happens

to the species and the land that has experienced deterritorialisation and they distinguish that deterritorialisation is always accompanied by reterritorialisation.

In discussing the highly structured nature of education systems, Bacevic (2019) discusses how universities are assemblages that are physically and socially segmented by mixed forms of communication, which are shared among members but often obscure to non-members. In their study on undergraduate transition, Taylor & Harris-Evans (2018) argue that there is a value in conceptualising the experience as an assemblage where for the student 'things combine together in complex configurations that seem momentarily stable, even though we are aware that things are always changing' (p. 1258). For the PhD student experience, Done (2013) argues that the supervisory relationship can be viewed as an assemblage where instead of the doctoral student being viewed 'as a singularity generated through the play of forces' (p. 1) with their supervisors, the student should instead be viewed as a subject who actively constructs the relationship. These studies have begun to highlight the value of the use of the assemblage in providing an alternative approach to how student experiences in higher education can be conceptualised. In supplementing this literature, rather than exploring my participants' experiences of the PhD as a continuous pathway of progression, use of the concept of the assemblage will instead enable my study to take account of the less than linear nature of my participants' development. The concept will enable my study to take account of the territorial forms of assemblage such as the family, education and work and the concrete limits these might set for my participants in their 'movements from one territory to another' (Deleuze & Guattari, 1987, p. 126) in adapting to PhD study as well as how new possibilities of connection as well as resistances might occur in relation to this adaptation.

For an assemblage to exist, lines or connections uphold its structure, and it is these lines of connection that I will use to explore my participants' experiences of the PhD and these will be discussed in the next section.

3.3.2 The molar, molecular and flight lines

Deleuze & Guattari (1987) claim that all bodies are composed of three types of lines: molar, molecular and flight lines. In *A Thousand Plateaus* they refer to their triad of lines by a range of names including lifelines or lines of flesh, with the molar line being referred to as a 'break line', the molecular line as a 'crack line' and the line of flight as a 'rupture line' (1987, p. 200). For Deleuze & Guattari, human life is not a series of points or positions, but instead is composed of these three lines that define its open-ended, relational and interconnected nature.

The molar line has a segmented arrangement that controls the ordering of lives in rigid ways. In contrast to the rigidity of the molar line, the molecular line is a supple line of segmentarity where micro-cracks take place. While molecular lines may loosen molar segmentarities, lines of flight liberate from forms of subjugation, 'whether cultural, familial, biological or political' (Young et al, 2013, p. 183) and are decisive escapes from rigid segmentarity. Crucially the three lines are not in opposition to each other and are interconnected and molecular movements or flight line escapes would be nothing if they do not return to the molar arrangement of the assemblage.

3.3.3 Molar lines

Deleuze & Guattari (1987) claim that states, institutions and classes are the great molar aggregates and people are elements of these and as such are positioned within organised, hierarchised and stratified spaces:

There is a line of rigid segmentarity on which everything seems calculable and foreseen, the beginning and end of a segment, the passage from one segment to another. Our lives are made like that. (p. 195)

Deleuze explains how the molar line is 'the archetypal social fold, the fold of convention, driven by the survival imperative' (Deleuze & Parnet, 2007, p. 17). As such it plays a role in socially determining language and behaviours and is 'the line of classifying language, the line of prioritisation, of ordering, duty, false oppositions'. As a result of this molar ordering of society, individuals and their lifecycle stages are also ordered into, 'family – profession; job - holidays; family - and then school – and then the army – and then the factory – and then retirement' (Deleuze & Parnet, 2007, p. 93).

These rigid molar lines segment peoples' lives and people themselves according to a binary fashion (with a against b). For Deleuze this molarity of the social means that it is 'a line of imprisonment in such and such a function or group, a line of training, a line setting in motion the wheels of the social code according to operational models enabling mass containment of the vital flows – necessarily reductive, forced and simplifying' (Deleuze & Parnet, 2007, p. 17).

While Deleuze & Guattari (1987) claim that a great molar organisation might sustain us, it is what they refer to as binary machines 'that give us a well-defined status' (p. 227). Deleuze explains how within society there are binary machines of classification of social classes, sexes, of ages, of races, of sectors and of subjectivations and they are made more complex by 'cutting across each other, or colliding against each other, confronting each other and they cut us up in all senses' (Deleuze & Parnet, 2007, p. 128). As a result of this De Miranda (2013) claims that molar lines and binary machines 'segment', 'organise' and code lives into a 'predictable world' (p. 114) and 'the molar lines exert pressure for the preservation

of a hard-segmented world, with a homogenous vocation in its organisation' (p. 116).

In discussing the dichotomous nature of the molar line in relation to the teaching profession, Strom & Martin (2016) claim that the molar rules that operate in schools work to reinforce the status quo and can lead to tensions for an individual's practice. They argue that molar lines refer to the rigid, normative forces that preserve the status quo and 'these lines may be imposed from the macro-level, such as institutional rules or societal control mechanisms, as well as internalised at the micro-level, as ways that we discipline ourselves, in the Foucauldian sense' (p. 80). For Strom & Martin (2016), schools contain many rigid molar lines, with their emphasis on policy and testing, while Bazzul & Kayumova (2015) argue education systems generally are ordered in hierarchical ways with discourses that work to keep practices, boundaries, and a particular distribution of materials in place. Extending this further, Bacevic (2019) claims that universities are also highly structured organisations with coded practices that requires individual adaptation as discussed by Hopwood (2010) in relation to the PhD student experience.

3.3.4 Molecular lines

For Deleuze & Guattari (1987) people, who themselves are assemblages, are connected in a multiplicity of assemblages or networks that are in a constant state of movement. Within this perspective, the notion of adaptation is crucial in order for an assemblage to survive and the line that brings about these revisions is referred to as 'a [supple] line of molecular segmentarity' (p. 197).

In contrast to the molar line, the molecular line is 'where imperceptible micro-transformations are constantly occurring, moving in all directions' (Holland, 2013, p. 101). In contrast to molar lines, Deleuze states that molecular lines are 'much more supple' and play out beneath the molar line (Deleuze & Parnet, p.124). In

highlighting the characteristics of how molecular lines operate in relation to molar lines, he gives the molar example of a profession with its institutional rules and disciplinary mechanisms. While the worker might internalise these controls, at the same time at an individual level our views and perceptions are also constantly undergoing molecular change and adaptation to the work environment with elements of attraction and resistance as we evolve.

The molecular line is in constant adaptation to the molar line with the two being heavily interconnected. Deleuze & Guattari (1987) state that the two lines are 'inseparable...because they coexist and cross over into each other...the two segmentarities are always in presupposition' (p.213). They state that while the molar lines trace the self-containment and maintenance of an entity or an organism, the molecular lines are 'continually dismantling the organism' (p. 4). Windsor (2015) claims that molar formations are always undermined by their molecular elements and he provides the example of the body of the athlete: 'when the athlete trains vigorously, the molar body 'breaks down', but it is this very phenomenon that at the molecular level turns around and reshapes the molar body' (p. 161).

Nevertheless, for Deleuze & Guattari (1987) 'molecular escapes and movements would be nothing if they did not return to the molar organizations to reshuffle their segments, their binary distributions of sexes, classes, and parties' (p. 216- 17). Deleuze & Guattari note the 'top-down vs bottom up' processes of molar and molecular relationships, with the former referring to the operations that are fundamentally driven and controlled by central authorities through hierarchical and highly organised systems. However, as discussed in the previous section, the result of the molar lines of the family, work and education is that individuals also internalise the structuring found in these lines so that it becomes part of their own molarity, in turn shaping responses to new experiences. In contrast to the

structuring of molar lines, Surin (2010) states that 'a molecular logic of production is basically self-organising' (p. 162) and refers to how individuals adapt in relation to molar processes.

In detailing how individuals respond to molarity, Youngblood Jackson (2010) details how her participant, while occupying the molar territories associated with her gender, underwent a series of molecular adaptations in becoming-woman. She suggests that the molecular adaptations undertaken were also responses to her participant's own becoming and how this was 'a constant, fluid process of changes, interactions, and transformations' (p. 581).

3.3.5 Flight lines

Usher (2010) argues that lines of flight are Deleuze & Guattari's 'most radical concept' (p. 71) and can be understood as a metaphor of resistance to established hierarchies. Unlike the other two lines of connection between bodies, lines of flight typically form a line of rupture or disruption.

In explaining its meaning, various authors (Patton, 2010; Holland, 2013 and Windsor, 2015) state that a line of flight is something that inspires or motivates change, something that upsets connections in an assemblage and something that is transformative. While identifying the value of the line of flight in connecting to other lines that can lead to transformations in the social field, Deleuze & Guattari (1987) also warn how lines of flight can have creative as well as destructive capacities. They point out that lines of flight 'always risk abandoning their creative potentialities and turning into...a line of destruction' (p. 558). Given this risk, Windsor (2015) states that for a line of flight to be constructive individuals 'must learn to master themselves and harness their power before rashly embarking upon a premature or merely self-destructive form of counter-actualisation' (p. 99).

Having highlighted how the molecular line functions by adapting to our own as well as institutional molar structuring, in contrast an individual's line of flight reaches outside of their assemblage to escape the structure of which they are part and serves to connect that which is outside itself. For Deleuze & Guattari (1987) a line of flight is – 'something that flows or flees, that escapes binary organisations, the resonance apparatus, and the overcoding machine' (p. 216). In doing so, Windsor (2015) states that a line of flight is 'neither reactive or predictive, but rather a radical movement of becoming, unsaddled by the imperatives of assimilation or imitation' (p. 164). Usher (2010) claims that lines of flight disarticulate the consistency of relations between and among molar structures of practices and effects, 'opening up contexts to the outsides and the possibilities therein', breaking down unity and coherence and in so doing 'a line of flight is a *bridge* to a new formation' (p. 71).

In demonstrating the interconnected nature of the lines and the evolutionary aspect of the flight line, Deleuze & Guattari (1987) use the assemblages of the wasp and orchid. For the wasp species to exist it must have a means of reproducing itself and the processes that serve to maintain the life of the species over time are understood to be the molar line. While for the wasp to adapt to its environment and make alterations and revisions, which are equally necessary for the existence of the wasp species, these are forms of molecular line. However, for Deleuze & Guattari (1987) it is the mutual dependence between the wasp and the orchid that is crucial so that the wasp 'becomes a liberated piece of the orchid's reproductive system, while the orchid becomes the object of an orgasm in the wasp, also liberated from its own reproduction' (p. 293). The key is that that both the wasp and the orchid are affected by the process and Deleuze & Guattari (1987) state that it is a line of flight that connects both. It produces a 'coexistence of two asymmetrical movements' and is thus referred to as 'a line of flight that sweeps away selective pressures' (p. 324).

Thornton (2020) notes how the line of flight between the wasp and the orchid is also helpful when it comes to explaining what Deleuze & Guattari mean by becoming and 'when the orchid evolves to reproduce the image of the wasp on its petals, the orchid is quite literally transforming itself into part of the wasp-assemblage, while the wasp is becoming part of the orchid-assemblage' (p. 5). In this process Deleuze & Guattari (1977) claim there is 'neither imitation nor resemblance' but only 'an exploding of the two heterogeneous series on the line of flight', by which there is both 'a becoming-wasp of the orchid and a becoming-orchid of the wasp' (p. 11).

While the structured nature of PhD study has been discussed in the literature, resistance to this has not been explored by using the line of flight and instead forms of agency have been suggested as a response. In Hopwood's study (2010), as result of his participant's challenges he describes them as being 'intentional, agentic beings' (p. 115) with the ability to shape their PhD experience. Nguyen & Robertson (2020) claim that those who challenge the structured nature of PhD study should be viewed as 'self-organising agents of varying effectiveness' (p. 1). As a result, our understanding of the aspects of PhD study that get resisted remains limited and as discussed in chapter two tends to focus exclusively on the supervisory relationship.

In summary, the molar, molecular and flight lines do not function in isolation and instead they are all constituent parts of an assemblage, that is an arrangement or layout of heterogeneous elements of individual subjects and institutions and this interconnection has a value in exploring the PhD experience. In chapter two I discussed how the literature tends to focus on how PhD students experience the qualification as they are undertaking it and little attention is given to participants' backgrounds. Taking the molar line will enable an exploration of my participants'

lives before the PhD in terms of work, family and expectations of PhD study and how these might impact on the experience. In addition, the molecular line will enable a focus on how and in what ways my participants adapted to their own as well as the institutional molarity of PhD study. Finally, while the literature claims that resistances might be a necessary response to the structured nature of PhD study, not all forms that are suggested in the research will lead to changed outcomes for the student. The use of the line of flight will enable a distinction to be made between what might be termed 'everyday resistance' (Vinthagen & Johansson, 2013) in the PhD, such as non-communication with a supervisor or procrastination, compared to those instances where other assemblages are resisted that result in forms of deterritorialisation and changes taking place in both assemblages.

All assemblages are composed of the three discussed lines and in the next section I will detail a number of additional Deleuzoguattarian concepts that help to explain the connected nature of the assemblage and that will also be used in exploring my participants' accounts of the PhD experience.

3.3.6 Rhizomes

Deleuze & Guattari (1987) use the concept of the rhizome to describe the relations and connectivity of assemblages and in the introduction to *A Thousand Plateaus* they contrast arboreal and rhizomatic knowledge structures. They characterise traditional knowledge structures as 'arboreal', comprising of a 'pivotal taproot' that leads to the flowering of knowledge that grows out of that singular, unified entity (p. 5). Such knowledge is constructed as centralised and modelled on linear progress and it is perceived as building in one direction, moving according to a fixed order and importantly it is hierarchical. Against this Deleuze & Guattari set the model of the rhizome, which spreads horizontally in all directions. This alternative model

characterises knowledge as multiple, non-hierarchical, proliferating, and non-dualistic.

Rhizomatic knowledge is based on 'principles of connection and heterogeneity; any point of a rhizome can be connected to any other, and must be' (ibid, p. 7). Furthermore, 'a rhizome has no beginning or end; it is always in the middle, between things, intermezzo' (p. 25). Breaking even further from the conceptualisation of knowledge as arboreal, Deleuze and Guattari go on to develop the metaphor of networks, which becomes central to their theory: 'There are no points or positions in a rhizome, such as those found in a structure, tree, or root. There are only lines' (p. 8). The network connects every node to every other node in every direction with no particular beginning or ending, forcing us to notice the dynamism of the movement between nodes, between ideas.

Colman (2010) explains how the term is drawn 'from its etymological meaning, where 'rhizo' means combining form and the biological term 'rhizome' describes a form of plant that can extend itself through its underground horizontal tuber-like root system and develop new plants' (p. 231). The nature of the rhizome is that of a moving matrix, composed of organic and non-organic parts forming symbiotic and 'aparallel evolutions' according to transitory and as yet undetermined routes (Deleuze & Guattari, 1987, p. 10). Colman (2010) states that 'rhizomatic formations can serve to overcome, overturn and transform structures of rigid, fixed or binary thought and judgement. There are no singular positions on the networked lines of a rhizome, only connected points which form connections between things' (p. 231).

Deleuze & Guattari critique the linear idea of movement or pathway in their use of the concept and for Gravett (2019), the rhizome can be applied to higher education, where learning and transitions are ongoing and are based on multiplicities, singularities and fluid connections. This notion destabilises linear understandings

that look for homogeneous pathways with fixed turning and end points and the most important characteristic of a rhizome is that it has multiple entry ways. Seen through this lens, there are no uniform pathways: transitions are divergent, fluid and multiple.

In their application of the concept of the rhizome to first year undergraduate transition, Taylor & Harris-Evans (2018) highlight how rather than being informed consumers of higher education, students' knowledge is immanent and emergent. For the authors, student understanding is an ongoing happening, that follows nonlinear pathways subject to recursive iterations and through relationships with others with knowledge being:

Social, affective, embodied and relational bringing in peers, friends, family, social media and a multiplicity of different elements into conjunction. Knowing was about 'plugging in' different modes and emotions; about bringing diverse bodies, things and spaces together in new combinations and formations; and about making connections that forged new, fortuitous and heterogeneous mixings.

(p. 1261 – 62)

As a result, these students' knowledge and knowing were emergent rhizomic formations, organised on 'principles of connection and heterogeneity' whereby any point of rhizome, 'can be connected to anything other' in an a-centred multiplicity (Deleuze & Guattari, 1987, p. 7).

In relation to PhD study, Taylor et al (2011) use the metaphor of the rhizome to provide a less linear conceptualisation of the PhD student experience and in doing so they highlight 'the multiplicity of relations (biographical, cultural, epistemological, ontological) which are constitutive of each doctoral journey' (p. 207) and how interconnected these can be. While Guerin (2013) uses the concept to outline how PhD students' researcher identities can be developed in rhizomatic research

environments, she found that her participants created specific forms of networks for information, for thinking critically, for communicating with broader audiences and for connecting with broader learning.

Extending on this research and working with a more diverse range of participants, my study will use the concept of the rhizome to explore what 'bodies, things and spaces' (Taylor & Harris-Evans, 2018, p.1262) my participants connect with in new combinations and formations in their PhD experience and the value these have in enabling their progression.

3.3.7 Nomos and Logos

While the use of the concept of the rhizome can be used to map spaces of connection (Guellier, 2017), the concepts of nomos and logos are used to describe how bodies spatially come together. For Deleuze & Guattari (1987) nomos is the way of arranging elements, people, thoughts or space that does not rely on any organisation or structure. Roffe (2010) suggests that this arrangement indicates a free distribution, 'without any intrinsic organisation, and must be considered to be open, or what Deleuze & Guattari call 'smooth space'' (p. 186), but this space itself is something that must be created. According to Conley (2010) 'a smooth space is one that is boundless and possibly oceanic, a space that is without border or distinction that would privilege one site or place over another' (p. 258). Roffe (2010) claims that 'smooth space is a space without fixed points or boundaries, wherein movement is uninhibited' (p. 119).

Deleuze contrasts nomos with logos and one of its translations, meaning law. According to Roffe (2010) logos is, 'the ordered conception of existence, offers a picture of space that is primordially cut up in various ways, one that includes intrinsic boundaries' (p. 186). Roffe continues 'the picture of the world indicated by logos is one in which everything has its right place: it is a structured and ordered

conception of existence. Logos also implies, then, a conception of distribution, but one that is founded on a previous structure and is well-organised' (p. 185). While nomos is smooth space, logos is striated meaning, 'a space drawn and riddled with lines of divide and demarcation that name, measure, appropriate and distribute space' (Conley, 2010, p. 258).

Various authors have begun to illuminate how the university space is not merely a blank canvas but plays a powerful role in the constitution of academic subjects (Cox, 2011, Temple, 2014 and Kelly, 2017). In identifying the forms of space in the PhD experience, Dowling & Mantai (2017) state that the university is the primary site where students' researcher identities are forged, but that the home is the most significant off-campus site. However, while the campus has received some research attention the other sites where PhD study occurs, such as 'homes, cafes, trains' (Dowling & Mantai, 2017, p. 201), have received comparatively little attention. In response my study will contribute to our understanding of the spatial practices of PhD study through the application of the nomos and logos concepts. The site of the university with its structured organisation conforms to the notion of the logos with its defined sites for PhD study, while those other sites of research work such as the home and the café are nomos spaces where PhD study does not take precedence and are shared with other activities. In my study the concepts of the nomos and logos will be used to explore how space for doing the PhD is created and segmented and the physical qualities of the environment and how these impact on the development of my participants.

Summary

In the previous chapter I set out the research gaps in the literature stating that the various conceptualisations that have been applied to the PhD student experience take little account of its interconnected nature and do not frame the challenges,

adaptations and resistances theoretically or promote an integrated view of its complexity. In response, in this chapter I have set out a theoretical framework with which to address those gaps. I have discussed a range of Deleuze & Guattari concepts and shown how combined these can provide an alternative approach for conceptualising a mapping of the PhD student experience with a diverse range of participants. These methodological 'thinking tools' (Coleman & Ringrose, 2013, p. 20) will be used to enable my study to explore the forms of difference and becoming that make up my participants' less than linear assemblage of the PhD student experience. The triad of lines will enable my study to explore aspects of my participants' lives before their PhD study and how these might have impacted their experience and how and in what ways they adapt as well as resist aspects of the qualification. While the concepts of the rhizome, nomos and logos will enable my study to trace the connections and arrangements that my participants make with other bodies and space.

Before this analysis and discussion, in the next chapter I will consider the methodology and methods most appropriate for undertaking my research.

Chapter 4 Methodology and Methods

4.1 Introduction

In this chapter I explain what my research entails and how the theoretical framework explored in chapter three informed both the methodological choices I made and the methods of data collection and analysis that I have employed in my study. I begin by discussing the background to my study and how I chose the theoretical perspectives which frame my research. After outlining my research questions, I explain why I chose to take a qualitative approach before discussing the lessons learnt from my pilot study and how these helped shape my main study. The next section focuses on the data collection itself and explores how the questions for the semi-structured interviews were constructed and how the interviews were conducted and how the photographs were collected. Next, I discuss the steps involved in my data analysis which included the carrying out of transcriptions and the data coding and analysis. Then I examine the ethical considerations involved from the very beginning of the research process, all the way through to the final analysis of the data. The chapter concludes with an exploration of the reflexive approach I took as the researcher and my positionality within the research process.

4.2 Background to the research

Mason (2002) maintains that the biography of the researcher plays an important part in shaping the research design and Silverman (2013) states that for some researchers 'direct personal experience becomes the starting point of their research' (p.80) and this was the case for my research study and my interest arose from a combination of factors. Through my career in supporting university students, I have worked with individuals at all levels of study and as a result of this I was particularly aware of the extensive educational research undertaken on the undergraduate student experience. I have myself added to this literature (Kilmister,

2015) by exploring the challenges faced by mature students and how they were able to adapt through relational support and coping strategies to enable their progression. However, when I came to look for similar studies to aid my understanding of the postgraduate research student experience, this area appeared relatively under-researched in the field of education. So, taking motivation from this gap and expanding on my previous research my study sets out to explore the challenges that students bring to PhD study, how they adapt and what role might resistance play in enabling their development.

The aim of my previous study with undergraduate students was to explore the challenges that they faced and how they adapted. Rather than solely focusing on the structural/agency argument, I also explored how participants past educational experiences can work to both challenge and enable resilience. In undertaking this PhD study, I wanted to retain this focus on how the past can inform future expectations of study while at the same time developing on this further by taking the concept of the molar line to explore how the family, work and previous educational study might impact on their positioning.

As discussed in chapter one, through my work with PhD students and before starting my research I had understood that doing research was often challenging with progress being sporadic for much of the time. The result of this might mean that students were left feeling frustrated and that they were not always developing and when I began my research, what was apparent to me was that the experience could also be far messier with achievements in one area mixed with a lack of progress in a related area. Given this, in my research I was looking for a theoretical framework that could take account of the less than linear nature of undertaking a PhD in the social sciences with its challenges, adaptations and resistances.

4.3 Theoretical perspectives

Gale (2018) begins *Madness as Methodology* with the following quotation from Deleuze & Guattari (2004), 'Madness need not be all breakdown. It may also be breakthrough' (p. 143). For Gale methodology should be about 'moments and movements between practices of conceptualization...and what unfoldings these foldings...might animate and bring to life' (p.10) and he stresses how methodology should take account of the on-going nature of becoming. In identifying theoretical perspectives with which to examine the PhD student experience and in contrast to some of the previous research, I wanted to take more account of the effects of past experiences on my participants' 'unfoldings' and how these might impact on attempts to adapt to PhD study. Equally I also wanted to consider how forms of resistance might sometimes be a response to the result of this messiness. Thus, in attempting to identify an explanatory framework it was necessary to find an approach that took account of the untidy nature of evolving as a PhD student and how this was made up of challenges, adaptations as well as resistance. As Anfara & Mertz (2014) have argued, theoretical frameworks provide 'a lens for seeing and making sense of what to do in the design and conduct of the study' (p. viii). While the literature on the PhD student experience has discussed how participants can be challenged and how forms of adaptation are necessary, these things tend to be separated out and not viewed in terms of how one aspect can inform the other in an interconnected way. Similarly, how students might resist tends to only exist around the supervisory relationship and takes little account of how PhD students might resist other aspects of the qualification. Rather than separating out these challenges, adaptations and resistances into neat and distinct categories, I wanted a theoretical framework that enabled the interconnected nature of these aspects to be considered and that would in turn reflect the constant 'unfolding' of the PhD student development.

Coleman & Ringrose (2013) note how Deleuzian inspired empirical research in the social sciences helps to take account of how 'the social and cultural world is mobile, messy, creative, changing and open-ended, sensory and affective...' (p. 1). As discussed in chapter three, Deleuze & Guattari provide an ontology of difference and becoming with both its openings and obstructions and key elements of this are their molar, molecular and flight lines. For them these lines do not have fixed points and as such they are in constant movement and as Windsor (2015) states they are 'co-implicated' expressing 'different compositional processes immanent to continuous movements of rest and becoming' (p. 158). The structured ordering of individual lives combined with the need for ongoing adaptation and forms of resistance represented by this triad of lines appeared to me to provide a framework to take account of the messy and interconnected nature of the PhD student experience. Based on my previous experiences with PhD students as well as being a PhD student meant that I appreciated that there were no neat and tidy stories about the experience despite the literature suggesting that this might be the case. For Coleman & Ringrose (2013) the use of Deleuze's work can provide a way of 'noticing different things that might be happening' (p. 4) and in relation to my own study the use of some of the Deleuzoguattarian concepts provides a way to explore how a small sample of participants experienced the sometimes messy and multidimensional nature of a PhD in the social sciences.

Next, I consider how my theoretical perspectives have informed my research questions, methodological choices and the methods of analysis I have chosen to use.

4.4 Research questions

While wanting my study to explore certain aspects of the PhD student experience, my research questions continued to have a certain provisional aspect to them

throughout my fieldwork and data analysis and were only fully realised when I began writing-up my research. I had started my research considering the usefulness of devising a set of questions that I could also see would have the disadvantage of containing my study. In the literature there is some debate about whether to formulate questions early-on in the research process or to allow the questions to unfold as the research proceeds. According to Robson (2011), setting research questions can be constraining if one is trying to develop a flexible research design and Agee (2009) claims that questions can be refined during the research process to 'serve as a basis for more rigorous and reflexive enquiry' (p.434). Working on the basis that research questions are provisional and that they can act as a useful guide as the project progresses (Bryman, 2014), I began with a provisional set of questions that were based on my research interests and over time these became more and more refined into the following three questions:

1. In what ways does the family, work and previous study impact on PhD student development?

As discussed in chapter two, much of the literature on the PhD student experience focuses on the challenges that individuals face during the qualification with little regard given to how existing identities might impact. Given this limited research, in this question I take specific aspects of my participants' backgrounds to see how these played a part in their development.

2. What role does adaptation play in overcoming the liminality of PhD study?

The literature has highlighted the liminal nature of PhD study (Kiley, 2015) and this question attempts to explore the various forms of adaptation that my participants underwent as a result of PhD study and how these helped in contending with the open-ended nature of their development.

3. How might forms of resistance enable the progression of the PhD student?

The literature (Vekkaila et al, 2013 and van Rooji et al, 2021) notes the various forms of dissatisfaction that individuals might have with their PhD study, including the quality of the supervisory relationship, the PhD student lacking a sense of belonging, high workload and exhaustion. However, forms of resistance that students might employ to counter some of these aspects are less well-covered with the supervisory relationship tending to be seen as the only site of resistance. Given the challenges that my participants might bring to and experience in their PhD study, this question focuses on the forms of the resistance operationalised by my participants and how these aided their progression.

I decided to construct my research questions into three clear areas of focus: challenges, adaptations and resistances. The reason for separating these specific areas was a practical one: to provide a framework in which to conduct my research and construct interview questions. Indeed Mason (2002) suggests that a research question needs to be focused yet simultaneously can be 'exploratory and fluid' (p.20) and Corbin & Strauss (2008) argue that a research question cannot be too 'broad as to give rise to unlimited possibilities' (p.25).

Having reviewed the literature on challenges experienced by students during their research the focus has been on what participants undergo as part of their PhD study. No consideration has been given to their other identities that they bring to the PhD and how other experiences of education might also end-up challenging them. Rather than focusing too broadly and because of what has been discussed in chapter two, this question specifically focuses on the molar challenges of the family, employment and their experience of postgraduate taught education. The second question attempts to capture the various forms of adaptation they might undergo as a result of PhD study and the role these play in overcoming the liminality of the qualification. Given the challenges that participants might bring to their PhD

study and the need to adapt my final question focuses on how forms of resistance result and how they aid the progression of the PhD student.

4.5 My research approach

a) A qualitative approach

In choosing the methodological approach for my study I was guided by the principle that the research methodology must fit 'the general aims and purposes of the research' (Cohen et al, 2011, p. 73) and this thesis adopts a qualitative research strategy, which is concerned with 'understanding rather than measuring difference' (Lewis, 2003, p. 50). I chose to take a qualitative approach because its intention is 'to understand the subjective world of human experience' (Cohen et al, 2011, p. 17). The qualitative researcher is concerned with the individual and understanding how the individual understands and interprets their social world and with the interpretation and empathic understanding of human action.

Unlike quantitative research, which centralises standardisation, neutrality and generalisable entities, qualitative research tends to focus on a smaller number of people, but in greater detail, with the aim to understand social phenomena from the perspectives of participants (Patton, 2002; Bogdan & Biklen, 2007 and Bryman, 2014). By contrast quantitative research takes a more positivist and realist view, assuming that 'reality exists "out there" and it is observable, stable and measurable' (Merriam, 2009, p.8). This quantitative approach stresses the 'measurement and analysis of causal relationships between variables, not processes' (Denzin & Lincoln, 2005, p.8). On the other hand, qualitative research takes an interpretive approach which involves 'understanding a situation through the eyes of the participant' (Cohen et al, 2011, p.116) and 'is not concerned with objective truth, but rather with the truth as the informant perceived it' (Burns, 2000, p.388).

In taking a qualitative approach I wanted to have a methodology that would elicit rich and meaningful responses to my research questions. I felt that my research questions lent themselves to the qualitative method of investigation where I aimed to 'understand the subjective world of human experience' (Cohen et al, 2011, p.17). Silverman (2013) suggests that a researcher deploying a qualitative approach has, 'an interest in subjectivity and the authenticity of human experience' (p.6).

My research questions were in keeping with a more 'exploratory and more hypothesis generating rather than testing' research approach (Corbin & Strauss, 2008, p.25) and a qualitative approach was compatible with my aim of exploring the types of challenges, adaptations and resistances that might make up my participants' experiences of PhD study. I wanted to gain an understanding of how these factors had been significant and as Newby (2010) suggests:

Understanding people does mean that you have to deal with people's feelings, values and emotions as well as their behaviours, their attachments to place and people, their fears, hopes and motivations as well as their perceptions of the world, the organisations with which they have contact and their relationships with them. (p. 117)

The intention was to explore with my participants their educational histories, family backgrounds and professional experiences, and how these might have been influential on their PhD experience in both adapting to it but also in their resistances. By drawing on their voices and experiences I believed that I could better capture the messy and interconnected nature of the PhD student experience.

In contrast to quantitative research, qualitative research embraces subjectivity, with the individual researcher being the 'primary instrument of data collection and analysis' (Merriam, 2009, p. 214) with reality being interpreted and presented by the researcher. As such it has been argued that qualitative research lacks validity,

reliability and generalisability. In order to demonstrate rigour, questions about the credibility of qualitative research need to be examined.

The trustworthiness of qualitative research has been the subject of continued debate (Lincoln & Guba, 1985 and Denzin & Lincoln, 2005). As Creswell & Miller (2000) assert 'qualitative inquirers need to demonstrate that their studies are credible' (p.125) and the terms 'reliability' and 'validity' are commonly used to question the trustworthiness of qualitative research (Merriam, 2009). Creswell & Miller (2000) discuss the different techniques which can be employed by researchers to ensure validity such as engaging in member checking, using triangulation methods, engaging in peer review or having an external audit of the data.

In relation to my study, I employed a variety of strategies to ensure creditability. I used a number of methods to collect data that included semi-structured interviews with my participants and the collection of photographs of their experiences of PhD study with triangulation also being achieved by interviewing a diverse range of participants from differing backgrounds. In addition, Vogl et al (2017) suggest that adopting a longitudinal approach to interviewing can also add creditability and having the opportunity to interview my participants twice over a six-month period meant that they could return to themes that had previously been discussed. This enabled the sense-making of their PhD experience to be explored as a process and not just as a snapshot. All participants were sent the transcripts of their interviews and were asked to check these and make any amendments to them. In response, two participants returned their transcripts with amendments in relation to events that they had described in their first interviews and one of these provided additional information.

I also included my supervisors at various stages in my research study to increase external validity. My interview questions were discussed and agreed with my supervisors in order to obtain feedback and suggestions. Moreover, I shared with them the initial themes that were identified from the NVivo coding process to check credibility. Similarly, the transcripts of some of my first and second interviews were shared with my supervisors during the data analysis process to enable them to challenge the interpretations that I had made from the analysis of the data. This provided me with an opportunity to check my coding processes and discuss with my supervisors some of my initial findings from the data.

Credibility in qualitative research can be achieved in a number of ways and Gudmundsdottir & Brock-Utne (2010) emphasise how pilot studies in qualitative research can enhance reliability and validity. Pratt & Yeziarski's (2018) state that 'the use of a pilot study to test the method and interview guide further adds credibility and dependability to the study' (p. 417). In the next section I discuss how undertaking my pilot study ensured the validity of the main study and the methodology applied.

b) How my pilot study informed my main study

A pilot study is a small-scale research project conducted before the main study. Ismail et al (2018) claim that a pilot study helps the researcher to test how likely the research process is to work in order to help them decide how best to conduct the main research study. Teijlingen & Hundley (2001) highlight the benefits of piloting a study that include the researcher being better able to identify or refine a research question, discover what methods are best for pursuing it and estimate how much time and what resources will be necessary to complete the main version of the study. In terms of my own research, undertaking a pilot study was also beneficial in helping to shape the design of my main study.

The purpose of my pilot study was to try out the suitability of my data collection method in gathering accounts about my participants' PhD student experience and to test the recruitment potential for the study. Also given the potentially sensitive nature of my research I wanted to see if PhD students would be prepared to be involved in a study where it was likely they would discuss issues related to their research that might include their supervisors, department and institution. The design of my pilot study involved a two-stage data collection approach that started with my participants providing a written account of their PhD experience, including what had gone well as well as what challenges they had faced and how they might have adapted. This writing was then followed up by a semi-structured interview with questions that elicited further their experiences of PhD study. I wanted to try out the suitability of my data collection method and to test if participants were willing to write about their PhD experience as well as to be interviewed and to evaluate if the writing task and interview provided appropriate data in response to the research questions and whether these research questions needed to be refined. Aside from the scientific benefit, as a novice researcher it was also a beneficial process enabling me to reflect on my own involvement and my own positionality. Janghorban et al (2014) stress the value of undertaking pilot studies for novice qualitative researchers as a way of minimising the risks of encountering unmanageable problems while obtaining data, as well as in conducting the processes of data analysis and interpretation.

In terms of the sample size, I was guided by the literature that suggests the recruitment of a small number of participants (Connelly, 2008) and I recruited three participants who were at different stages of the PhD and were drawn from one university department that recruits a variety of part-time and full-time students, some of whom are funded to work on research projects, some are funded by employers and some are self-funded.

Having undertaken my pilot study with three participants I identified a number of lessons learnt from the experience that were used to shape my main study. In evaluating my method, I found that obtaining writing from participants was challenging as I had to remind them on a number of occasions about providing this writing. One of my participants responded by stating that since they were already doing a lot of writing they were reluctant to also write about their experience of PhD study. Given that the writing task did provide some rich participant data I still felt it was important to devise a method that enabled participants to provide their own data in an accessible and less onerous a format as possible.

The methods for collecting data in creative ways are much broader than just writing and Rainford (2020) states that this can encompass a wide range of visual or arts-based methods. Having explored drawing (Literat, 2013 and Mannay, 2016), video (Heath et al, 2010) and the use of found objects (Brown, 2019) and wanting to ensure that my data collection requests were manageable, I decided in my main study to ask my participants to take digital photographs that they felt captured a sense of their PhD study and could provide an entry point for their first interview. In contrast to some other data collection methods, photography is a flexible approach that allows for 'bridging the worlds of the researcher and the subject' (Harper, 2012, p. 138) and in the case of my study enables a visual representation of the assemblage of the PhD student experience.

The pilot study also provided an opportunity to 'test' my skills in the interview process (for example, questioning and probing) with my participants. The structure, wording and sequence of interview questions were 'tested' to see the extent to which participants appeared to comprehend the questions asked as well as how long the interviews were likely to take.

The interviews flowed smoothly, and the questions enabled my participants to respond expressively and fluently about their experiences of PhD study. However, those questions that dealt with their development as a PhD student were not temporally sequenced and this caused some confusion that required further explanation to be provided. As a result, for the main study I differentiated my questions into specific sections, and I explained the focus of each section before asking my participants the questions.

The interviews had the benefit of being like conversations, and whilst participants were keen to discuss their experiences there were too many questions to cover in one hour with each interview lasting between 75 and 90 minutes. When participants were discussing their PhD study it was clear that this was an evolving experience that lent itself to an in-depth interview. However, rather than having one long discussion, for my main study having two interviews would enable me to return to the themes that they had discussed and track their development over a period of time.

For my main study I decided to interview participants twice over a six-month period and Cohen et al (2007) claim that longitudinal studies are beneficial as they can be used to highlight participant changes over time, and this can enable inferences to be drawn about the phenomena being studied. Neale & Flowerdew (2003) state that longitudinal qualitative research focuses the researcher's attention on both individual and social levels and the interactions between these; it provides a means of understanding how experiences and processes change over time and, as Thomson (2007) suggests, allows the researcher to explore the outcomes of changes. For Ismail et al (2018) interviews are often progressive, and that second or subsequent interviews are often richer than previous ones as the interviewer gains insights that are used to improve interview schedules and specific questions.

In relation to the PhD student experience, Hancock et al (2019) note how there is a need for longitudinal data that tracks individuals over a longer timeframe which would enable 'more casual inferences to be drawn' (p. 21).

For my pilot study I had recruited a very particular sample of participants from one department who had experienced varying degrees of disaffection while undertaking their PhD study. We had had previous occasional contact so by the time of the interview they were willing to discuss their experiences openly with me as a researcher with whom they were familiar. While this rapport may have led to the collection of rich data, it also proved a challenge for my participants in expressing a more balanced perspective and identifying the positive aspects in PhD study and this may have resulted in a more negative reading of their experience. As a response, in my main study I broadened my recruitment criteria and recruited a broader sample of participants from different departments that I will discuss in the next section.

4.6 My participants

The participants that I recruited for my research had to fulfil a number of specific criteria. In the existing qualitative literature on the PhD student experience there has been a predominant focus on younger groups of participants undertaking the qualification on a full-time basis with very few other commitments. Burford & Hook (2019) claim that this has resulted in a 'sometimes narrow' (p. 1344) imagining of doctoral subjectivity, with the implication that all students only belong to a narrow range of categories. In response, for my sample I wanted to recruit a diverse group of participants who were studying for the PhD either on a full-time or part-time basis. I was looking for participants who had worked before coming to the PhD and had other commitments. I wanted a diverse range of ages as well as a gender balance together with a range of home and international participants who were all at

different stages of their research. In addition, I required participants who would be willing to be interviewed twice over a six-month period and would be prepared to provide digital images of aspects of their PhD experience.

4.6.1 The sampling process

Given these specific criteria I used a purposive sampling approach when it came to recruit my participants and deliberately selected individuals for the sample based on their 'possession of the particular characteristics being sought' (Cohen et al, 2011, p.156). My sample needed to be diverse enough with a range of variables for it to be persuasive. In wanting participants at various stages of PhD study, I decided in my initial research design that it was important to recruit participants who had undertaken at least one year of PhD study as this would have allowed them to come to terms with the expectations of the qualification and how these requirements needed to be combined with other aspects of their lives. In addition, I was concerned about the retention of participants who might not have completed at least one year of study since in the research undertaken by Wollast et al (2018) on time course analysis, they state that the highest overall dropout rate of PhD students happens within the first year of study.

In chapter two I reviewed the literature on the PhD student experience and these studies tend to focus on one or two variables of a students' status and when it came to recruiting my participants it was important to reflect a wider range of variables in my selection of participants. Thus, in my sample I recruited five men and six women to ensure there was more of a gender balance in my study. In the research undertaken by Van der Haert et al (2013), age plays a factor in PhD student development and they claim that the younger the student is when they begin their research, the more likely they are to complete. Given much previous research has focused on younger participants, it was important in my study to have a spread of

ages and I was able to recruit four participants in their twenties, three in their thirties, two who were in their forties, one in their fifties and one in his sixties. Another variable that was important to reflect in my study was how nationality might impact on the PhD student development. Groenvynck et al (2013) claim that nationality makes a difference in the progression and eventual completion of PhD students with international students often outperforming home students. In my sample, I recruited four international students and seven home students to see if there were specific adaptations made by these participants that made a difference.

Gardner & Gopaul (2012) discuss how there is a normative idea that all PhD students are full-time with relatively few commitments. In my study I wanted to ensure that the part-time perspective of the PhD study was taken into consideration and could be compared with the full-time experience. I recruited three part-time participants who were combining their research studies with full-time work. In addition, little consideration has been given to those full-time PhD students who come with professional experience (Colbeck, 2008) and in my study I wanted to take account of how this might impact on the development of a PhD student identity and I recruited four participants who had more than ten years work experience to assess this.

Initially I had considered recruiting participants from two research settings. As I have access to PhD students in my professional work, I thought about recruiting participants from the university where I work. This is a teaching intensive university with a relatively small number of PhD students with limited training opportunities and funding for students. I wanted to contrast the PhD student experience in this type of institution with a larger, research-intensive university with more students, training opportunities, and funding to see what differences there might be in how PhD study was experienced. However, I decided that it might compromise my role

as a researcher if I attempted to recruit participants from my workplace. I recognised that for these PhD students they knew me in a professional context and not as a researcher wanting to collect data. This 'insider' positioning as a member of staff who would know participants' supervisory staff might have meant that it would have proved difficult to recruit participants or to provide them with sufficient reassurance about the nature of my research, or the potential 'exposure' of them, to secure their involvement.

Instead, I decided to recruit my participants from one institution (Central University) that recruits many PhD students and in which the social sciences are well-represented. The institution has a Doctoral School with funding for social science PhD skills training from the Economic & Social Research Council. Crucially, Central University would also provide me with participants with the variability I was interested in for my study and I could recruit from a setting that had a diverse range of PhD students ensuring that the sample was as good as possible (Robson, 2011).

4.6.2 Recruitment, snowballing and sample size

Central University is a multi-faculty university and I needed to initially design a plan for contacting potential participants in social science departments and to do this I had to identify individuals who could provide this access to begin the process. As universities are 'closed' settings, making contact with these gatekeepers was critical to my recruitment because they controlled the access and as Lee (1993) suggests 'social access crucially depends on establishing interpersonal trust' (p. 123) with the gatekeeper. In attempting to recruit my sample of PhD students, I needed to start by convincing gatekeepers within social science departments that my research would be useful and would not be detrimental in any way to either the participants or the institution.

I initially approached the Dean of the School of Social Sciences at Central University and emailed them the details of the research study. After failing to receive a response, I emailed them again after four weeks reminding them about my research. They responded to my second email and copied in the individuals in charge of PhD studies in the School as well as the main professional services contact. I then followed up with these individuals, emailing them the details of my study and asking them whether they could provide me with the names of the staff responsible for PhD students in each department. Having these names in each department was a vital first step in beginning the process and I then went onto contact these individuals and suggested that I could either come into their department to discuss the study with PhD students or that I could provide an email explaining the study that could be circulated to students.

The School of Social Sciences at Central University has ten departments, but rather than contact all gatekeepers, I initially decided to begin my recruitment process by working with half of these departments. I wanted to test the response rate of PhD students to the study as well as the potential diversity of participants. Following this, if my sample did not sufficiently fulfil my diversity criteria, I would then work with the remaining four departments to focus my recruitment on those specific groups missing from my sample.

My initial recruitment drive involved visiting one department to give a talk about my research and in the other three departments I provided the individual in charge of PhD studies with an email communication that could be circulated to PhD students (see appendix A for the email communication). Following this initial recruitment, I had recruited eight participants, with six females and two males and only one part-timer.

In my second recruitment cycle I decided to tailor the communication to PhD students based on those variables that were not sufficiently represented in my sample. So, for one department I asked only for male participants and in the second department I emphasised how I was looking for part-time participants who were combining work with study. I also wanted to publicise the research more directly in departments and decided to print postcards that provided details of the study and I asked permission from the gatekeepers in each department to place these postcards on department notice boards. During this time, I also attended a student conference where I gave a paper about my research and this provided an opportunity to ask for participants. In addition, I attended a poster presentation for PhD students where I handed out my postcards to attendees. At both the conference and the poster presentation I identified individuals who would fulfil my recruitment criteria and discussed the research with them.

The fact that I was a PhD student myself meant that participants perceived me as being 'one of them' (Walford, 2001) and this proved helpful in initiating conversations about my research. However, despite having access and lots of interest being expressed by PhD students it was often a challenge to convert these individuals into participants and I would attest to Walford's (2001) claim that access to participants can be 'fraught with difficulties' (p. 34). During conversations with PhD students some expressed reticence about being available for a second interview six months after the first or wondering why another interview was necessary. In addition, I received a number of email responses from individuals who had recently submitted their theses and while these interviews would have been interesting, the focus of my research was on those still undertaking PhD study who could be interviewed twice about the process.

To increase my sample, I asked my first group of participants if they could recommend anyone else who would be willing to be involved in the study and who matched my selection criteria. By accessing participants through this 'snowballing' technique, I could reach participants whom I may not have been able to contact otherwise. These participants were positive about my research and enjoyed being interviewed and this highlights Cohen et al's (2011) suggestion that in snowball sampling, 'interpersonal relations feature very highly' (p.159) and this proved to be the case as I recruited two of my participants through this method.

In total I recruited eleven participants (see table 4.1) who I interviewed twice, and I ended up with 22 interviews and 26 photographs. For the analysis I chose to focus on 20 of the transcripts as two of the interviews were relatively short and they did not add significantly to my findings and I focused on 12 of the photographs that provided the richest descriptions of the lived experience of the PhD student and these will feature in my three findings chapters. I excluded three images that showed identifiable buildings and three that showed people connected to the participants in order to comply with the ethics considerations of my study.

Table 4.1 Characteristics of participants

Pseudonym	Gender	Age range	Home/Int'l	Mode of study	Funding	Year of study for interview 1 and 2	
Julia	Female	20-29	Home	Full time	Funded	2	3
Lin	Female	20-29	Int'l	Full time	Self	1	2
Carlos	Male	20-29	Int'l	Full time	Funded	3	4
Jana	Female	20-29	Int'l	Full time	Funded	3	4
Greg	Male	30-39	Home	Full time	Funded	1	2
Ben	Male	30-39	Home	Part time	Self	4	5
Lorna	Female	30-39	Home	Full time	Funded	4	5
Gemma	Female	40-49	Home	Part time	Self	1	2
Nuala	Female	40-49	Int'l	Part time	Funded	5	6
Peter	Male	50-59	Home	Full time	Self	3	4
George	Male	60-69	Home	Full time	Self	1	2

4.6.3 Sample size justification

The number of participants chosen for interview is dictated by whether they will provide sufficient information about the phenomenon under study. Larger samples are effective in qualitative studies when seeking to capture the breadth of a phenomenon, however smaller samples are more effective when an in-depth analysis is desired (Patton, 2002). The research on sample sizes agrees that there is no specific formula to determine an acceptable number of participants for qualitative studies (Creswell, 2008 and Mason, 2010). In relation to my research study, the sample size was based primarily on the need to conduct an in-depth exploration of the PhD student experience; thus, I was looking for sufficient participants to enable the phenomenon to be fully considered whilst remaining flexible to the numbers recruited. As a part-time PhD student, I also had to weigh up the practicalities involved in combining fieldwork with my professional work

along with the need for enough data from which I could elicit themes to make informed conclusions (Mason, 2002). While I had initially planned to interview fifteen participants, I decided to stop recruitment after I had 22 interviews provided by eleven participants. I decided that I had sufficient data for the purpose of the study since the themes of challenges, adaptations and resistance in PhD study had been well-covered in my interviews and I was not obtaining any new insights.

4.7 Data collection methods

This section details the rationale for the research methods that I used in my study which were semi-structured interviews and photo-elicitation and the use of these provided different types of information for the research enquiry. Generally qualitative research enables the researcher to have more scope in exploring the phenomenon under consideration and Bryman (2014) states that this can encourage participants to provide detailed and descriptive responses on complex issues.

4.7.1 Semi-structured interviews

As the purpose of my study was to 'acquire unique, non-standardised, personalized information' (Cohen et al, 2011, p. 412) from my participants, the interview appeared to be the most appropriate primary data collection method. The interview is a flexible and powerful tool, and it allows the interviewer 'to understand the meanings that everyday activities hold for people' (Marshall & Rossman, 2006, p. 102). According to Bogdan & Biklen (2007), 'an interview is a purposeful conversation ... that is directed by one in order to get information from the other' (p. 103). In general, there are three main approaches to interviewing: structured, unstructured and semi-structured (Bryman, 2014).

A structured interview is typically associated with quantitative research, with specific questions and a fixed range of possible responses (Bryman, 2014).

Structured interviews aim to produce standardised and objective results, by conducting each one in exactly the same way (Burns, 2000). For O'Reilly (2005), however, the closed-ended questions commonly exercised in structured interviewing 'tend to impose a researcher's own framework of ideas on the participant and restrict the possible range of answers' (p.120). In other words, the purpose of structured research is to seek prevalence rather than exploration of a phenomena, since findings from structured interviews are only significant in numeric and statistical terms (Burns, 2000). Structured interviews were therefore considered unsuitable for my study, since a predefined set of interview questions and a set range of possible answers were not feasible for a study which is exploratory with 'why' and 'how' questions that required open-ended responses.

In contrast the unstructured interview resembles everyday life conversation, with no specific agenda or aims, as participants respond freely from one or two initial questions and the researcher will be 'doing the listening', while the participant will be 'doing the talking' (Atkinson, 1998, p. 32). In such a method, the researcher may enter the 'field' without any planned research questions as findings and data gradually emerge through time and interaction. According to Burns (2000), the unstructured interview 'is a free-flowing conversation [that] can lead to more of a free association of thoughts and therefore, deeper responses' (p. 425). Although unstructured interviews can offer researchers rich and detailed information, my study had specific research aims and the use of unstructured interviews risked not yielding the appropriate data with the key research questions not being adequately addressed by my participants.

Having considered the limitations of structured and unstructured interviews, I decided that the semi-structured interview would be more appropriate for my study. The semi-structured interview is usually organised with specific themes to be

covered, but the exact questions may differ because the specific questions asked can be in response, or a reaction, to what participants have said. Bryman (2014) notes that the interview questions can be very broad and flexible, and participants can respond freely under each theme or topic, as the researcher can probe into particular responses for clarifications or further detail. In choosing semi-structured interviews I was guided by wanting to give my participants time and space to discuss the challenges, adaptations and resistances that were involved in their undertaking a PhD in the social sciences. The fact that semi-structured interviews are adaptable suited my data collection approach as it enabled me to follow-up on participant responses in order to seek clarification and elicit more in-depth answers where necessary.

However, there are limitations even with semi-structured interviews. Interviews require co-operation and participants may not always wish to disclose the information that the researcher wishes to find out. Interviews can also be time consuming to undertake and transcribing can be a lengthy process with Kvale (1996) suggesting that a one-hour interview can take seven hours to transcribe. Those critical of the interview as a research tool are also sceptical 'about the capacity of interviews to provide accurate representations either of the self or of the world' (Hammersley, 2003, p. 120). As a researcher conducting interviews one also needs to be aware that the recollections and memories of individuals can be unpredictable. Maxwell (1992) warns that interviews only give a snapshot of the participant's life and therefore interpretations of the participant's responses 'can easily lead to false inferences about his or her actions outside the interview situation' (p.294). Indeed Hammersley (2003) points to the potential problems involving what people say in an interview context, their attitudes and how they behave in other contexts.

Despite these limitations, as Cohen et al (2011) note, the interview is a valuable method of gathering data and it allows for more in-depth responses than other forms of data collection. So, while acknowledging the criticisms of interviews as a data collection method, I decided it was the most appropriate approach to explore my participants' experiences of PhD study.

4.7.2 The interview questions

As I was interviewing my participants twice it was important to separate out my questions into specific sections that would address my research agenda and would enable an exploration of aspects of the PhD experience in the first interview that could be revisited when I interviewed my participants again six months later. The emphasis of the initial questioning in the first interview (see appendix B) was on the photographs that my participants had provided and what these revealed about their PhD experience. In addition, the purpose of the first interview was on gathering more factual information about each participant and their educational and professional backgrounds before beginning the PhD, what expectations they had of PhD study before asking more open-ended questions on their PhD development. Cohen et al (2000) suggest in constructing interview questions that they move 'from objective facts to subjective attitudes' (p.257) and my open-ended questions continued in the second interview (see appendix C) with a focus on progress since the last interview and further questioning on the expectations that my participants had of PhD study. Having reviewed the data from my first interviews, where participant expectations of the PhD were a feature, I wanted to explore further what specific expectations they might have had in relation to the supervisory relationship and the academic community they might be joining. These more open-ended questions had the effect of establishing a rapport with my participants as well as helping me to collect examples of their beliefs and attitudes (Cohen et al, 2011).

The questions for both interviews were constructed after having examined the literature and I used an *aide-memoire* as a guide in the interviews.

4.7.3 The interviews

As both sets of interviews were undertaken prior to the pandemic it was possible to meet my participants in person. Just as in my pilot study, I generally kept my interview questions short. I provided my participants with an explanation of the sections that I would be asking questions about before starting each interview and stating that they should ask for clarification if there was any ambiguity. Various issues arose while interviewing and occasionally I found myself posing questions not prepared in advance as well as needing to probe participants about issues they might have raised. This mostly occurred when asking questions about my participant's PhD development with the subject arising in the course of the interview before my prepared questions. Also, in responding to one question, participants would inadvertently provide responses to other questions within the flow of what they were describing. In this my interviews were like conversations that were relatively informal and were characterised by a 'fluid and flexible' structure (Mason, 2002, p. 62).

Given this informality it is not surprising that my participants were open about their PhD experiences and two of them became tearful when discussing aspects. Ross (2017) discusses the challenges of undertaking insider research where the researcher identifies with what a participant is discussing yet needs to remain appropriately bounded and supportive. I asked these two participants if they wanted to stop the interview and take a break and while one of them stated that they were fine to continue, one did take a short break. Following this I checked that everything was okay and that they were willing to continue with the interview. At the end of both of these interviews, I spent some time confirming that both participants

had not been unduly affected by the experience and highlighting the support services available within the university. The emotional trigger in both of these interviews was how PhD study affected their family life and how one had impacted on the other and given my focus on the family it was important to take into account these emotional moments when I came to work with these interviews.

The interviews took place in locations chosen by each participant with most taking place at the Central University campus and some taking place in coffee shops local to where my participants lived or worked. In discussing potential locations with my participants, it was important to ensure these were both private and for the purposes of recording, quiet. So, interviews never took place in my participants academic departments and would instead take place in more neutral settings such as library spaces. Given that my participants might potentially discuss sensitive information in relation to their PhD study it was important that interviews were conducted in places where they felt at ease and willing to talk. The first interviews lasted longer due to there being more background questions to cover and these interviewed averaged at being 70 minutes in length, while the second interviews lasted an average of 45 minutes.

I hoped that the interviews would be a positive experience for the participants in my study. My intention was for the interview to be 'a conversation in which two people talk about a theme of mutual interest' (Kvale, 1996, p. 36) and as such be an enriching experience for the participants. In fact, all of my participants thanked me for giving them a platform to explore their experiences of PhD study. Five of them stated that they had not shared this information with anyone else and how beneficial the experience had been to 'open up' about what they had experienced with someone who understands the process but is not a supervisor or connected to their

research. As Peter explained: 'Having these interviews with you has been very helpful because it's given me a chance to talk...and you have made it a safe space'.

The ability to be able to interview my participants again provided my study with a valuable insight into how they experienced the PhD over time. Rather than having only one snapshot at a particular point of their study, I was able to revisit themes with my participants and their changed views and practices that would not have been apparent in a one-off research encounter. Being able to do this confirmed the view that second interviews are often richer for the researcher in gaining insight of a phenomena (Ismail et al, 2018).

Although semi-structured interviews enable the researcher to gain useful insights into the subjective views of participants, the exclusive use of the semi-structured interview, as Burns (2000) argues, deprives the researcher 'of an ethnographic context in which the informant's reported perceptions occur, as they [the researcher] are never able to directly observe the informant in their everyday context' (p. 426). In recognition of the possible difference between what people say and what people actually do my study also adopted the method of photo-elicitation to supplement the information gathered from the semi-structured interviews. As Burns (2000) states, 'one must look beyond the 'public' and 'official' versions of reality in order to examine the unacknowledged or tacit understandings as well' (p. 398). The use of photo-elicitation in my study is discussed next.

4.7.4 Photo-elicitation

Since Collier (1967) first introduced it as a research method, photo-elicitation has been used in a wide range of social science studies, including those with a focus on identity (Clark, 1999) and education (Donoghue, 2007 and Meo, 2010). In relation to the PhD student experience, various authors (Barnacle & Mewburn, 2010 and Burford & Hook, 2019) have used photographs to highlight the challenges

of fitting the qualification into other aspects of participants' lives. Milligan (2016) states that asking students to take photographs allows the researcher to enter the participants' life in and out of university. Taking inspiration from these studies, I felt the use of photo-elicitation would be a valuable additional data collection method in helping to access my participants lived experience of PhD study.

Meo (2010) states that photo-elicitation refers to the use of photographs as a stimulus during a research interview and that there are at least two forms of photo-elicitation. The first is where the researcher chooses the images for discussion and the participants comment on these images and the meaningfulness to them (Harper, 2002). The second is auto-driven photo-elicitation where the participant generates the images for discussion in response to a researcher-initiated assignment and where participants use their photographs to discuss aspects of their lives (O'Brien, 2013). The advantage of this second approach is that participants provide the images, and this is helpful in prompting and widening the discussion of the phenomenon. O'Brien (2013) found the participants who took part in photo-elicitation interviews tended to introduce topics that had not been raised during the traditional interview. Photographs can also help participants to conceptualise and articulate aspects of their personal circumstances that they may not previously have considered in any depth. Drew et al (2010) found images helped participants formulate their discussions and explain specific points that they felt were key to what was being researched, while Guillemin & Drew (2010) claim that photographs assist participants 'to formulate discussion and explanation of complex experiences and ideas' (p. 178).

In requesting images, I stated the following in the email that I sent to participants prior to their first interview:

I would like you to take a small number of digital images (no more than three) using your mobile device. These images could include the spaces that best represent the key sites in the doing of your research as well as images that are meaningful to you in terms of your PhD study. At the first interview you will be asked to discuss these photographs.

Given my experience on the pilot study and the challenges in obtaining participant writing, I wanted to ensure that the photo-elicitation task was not too onerous or time-consuming. While wanting the images to be the focus of the start of the first interview, two of my participants also provided photos prior to the second interview and this meant taking time in the second interview to discuss these. Also, participants submitted images that could not be used - such as those that included personal images and images of buildings that could have been identified. Reflecting on the issues that arose, I realise that I could have been clearer in my brief to participants in terms of what was required and what to avoid in submitting images of their experience.

In total 26 photos were generated that ranged from one to three images being provided from participants and the benefit I found of having only a small number of these per interview was that we had time to discuss them, and it provided a valuable beginning in understanding how my participants experienced their PhD study. Given the highly personal nature of photo-elicitation and what participants might decide to share, consent is required when using a person's photographs. Wiles et al (2012) notes how even with this consent there is still an ethical duty to consider the risks that the publication of visual data might hold for participants and in section 4.9, I will consider the ethics involved in photo-elicitation and before this I will next consider my data analysis process.

4.8 The data analysis process

My data analysis was guided by my knowledge and understanding of the research literature and by my theoretical framework. Having reviewed various data analysis methods, I decided to employ a thematic analysis in my study because of its flexibility (Guest et al, 2011) that is used for identifying, analysing, and reporting themes within data (Braun & Clarke, 2006). It offers an accessible form of analysis, which is a relatively straight-forward method to apply, particularly for early career researchers. It can also be applied across a range of theoretical and epistemological approaches. In analysing data, participant responses are not grouped according to pre-defined categories, but rather by categories of meaning; relationships between categories are derived from the data through a process of inductive reasoning. The thematic analysis approach, as applied, offered the means by which I could access and analyse these articulated perspectives so that they could be used to create a framework that sought to explain the PhD experience under study.

The thematic analysis method involves breaking down the data into 'units' (Lincoln & Guba, 1985) and coding them into themes that generally take two different forms. Firstly, there are those categories which arise from the participants' own experience and language. Secondly, there are those categories which the researcher identifies as important to the study's focus-of-inquiry. Lincoln & Guba (1985) state that the objective of the participant-based categories 'is to reconstruct the categories used by subjects to conceptualise their own experiences and world view'. While for the researcher-based categories, the objective is to develop theoretical insights by developing themes which 'the process of comparative analysis stimulates thought that leads to both descriptive and explanatory categories' (p. 341).

In what follows I will explain the steps I took with the coding procedures followed by how I dealt with the themes that I identified from the analysis before concluding with the process of writing-up.

4.8.1 Coding the data

In qualitative research, it is common for research data to be sorted, or coded in the initial phase by emerging concepts, themes or ideas, with the researcher 'moving back and forth' between the data and analysis to refine (and reconceptualise) various categories (Bogdan & Biklen, 2007). I began the process of coding my data soon after having transcribed my first interviews and I read the transcript of each interview thoroughly prior to beginning the coding process in order to become more familiar with the interview I was working on. As Bohm (2004) explains 'coding may be described as the deciphering or interpretation of data' (p. 270). As already detailed, the data collection period extended over more than six months with each participant being interviewed twice and this extended approach meant taking an iterative approach towards the data analysis.

In the familiarisation stage I identified 'interesting' features and language and noted down initial ideas and descriptions about how my participants discussed their PhD experience. This was the first stage in making sense of the data (Charmaz, 2006) and entailed writing notes and identifying codes with similarities that might constitute potential categories or themes. However, as Corbin & Strauss (2008) point out, the coding process is 'more than just noting concepts in the margins' (p.66) and I began the process of axial coding, an inductive process where I grouped my open codes into categories. After sorting my data into categories, I analysed the data again and in some cases the coding needed to be modified and the categories further refined, and I will discuss this in more detail in the next section. By repeating and amending my analysis, I was attempting to ensure that

there was a 'consistency, refinement, modification and exhaustiveness of coding' (Cohen et al, 2000, p.149).

The same process of identifying codes in the interview data was applied to my participants' photographs that were used as a prompt with which to begin the interview process. This meant at the start of the interview giving the participants the opportunity to interpret and give meaning to their images and through questioning I was led by their interpretations. After beginning the interview with the question 'what does the photo show us' this was followed up with a number of questions that clarified what I wanted to know about the image that in-turn helped to shape my interpretations of the images. Rose (2012) refers to this process as generative analytic questioning and amongst other things this can focus on: the components of the image and how they might be arranged, whether there are there things that the viewer's eye is drawn to and are the components of the image contradictory. For example, nine of my participants provided images of their workspaces as a significant site in their PhD study and in exploring this further I clarified with my participants the location of these workspaces, the items on their desks and what other things could be seen in the image outside of the workspace. This follow up questioning process was tailored to the image under discussion and enabled my participants to provide their own interpretations of their photographs and these additional questions provided a way to analyse these images in more detail that was helpful when it came to the coding process. As a result of these discussions with participants, their photos generated codes, such as 'planners', 'home as a place of study' and 'workspaces' and these were then incorporated into the theme of 'The doing of PhD study'.

During this initial phase of data coding, I shared a small number of transcripts with my supervisors and discussed these open codes and notes that I made. My data

was then imported into NVivo 12, which is computer-assisted qualitative analysis software that enables the organisation of data and the comparison of emerging codes. Creswell (2007) suggests that for some researchers a computer program 'may cause an uncomfortable distance between the researcher and his or her information' (p.202). However, for my study, NVivo 12 was used to identify themes from the codes that were sorted and refined for further analysis

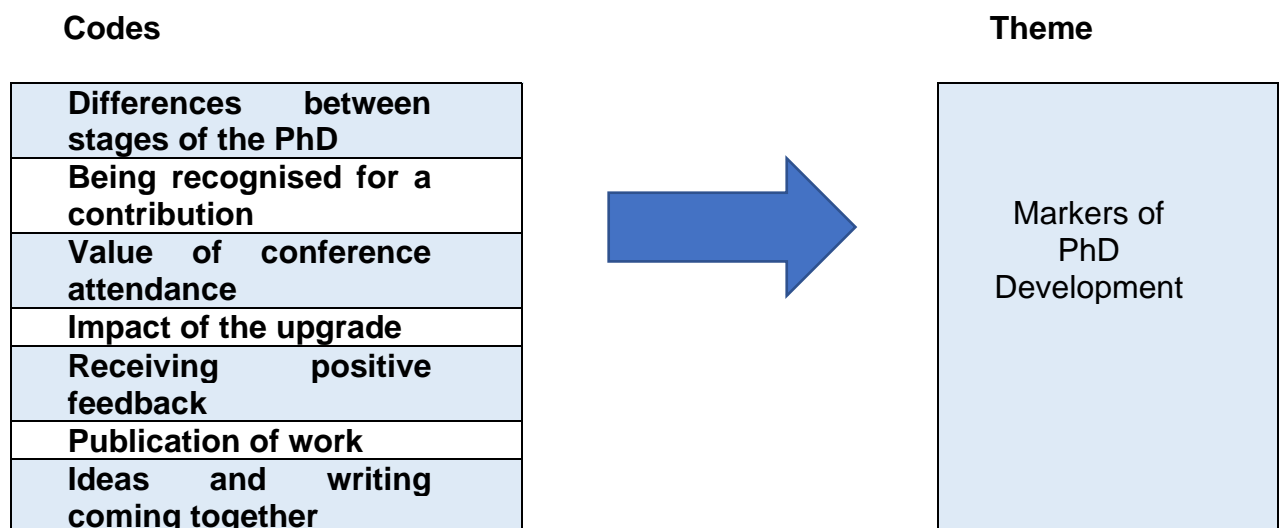
Following the iterative open coding process of the interviews and photographs, I identified 67 codes. I used NVivo 12 to organise these into categories of codes that were then gathered into potential themes that were organised into a framework that made sense for further analysis of the data. This phase also included re-labelling and merging codes generated in the open coding process to ensure that the labels and definitions for inclusion accurately reflected the coded content. Memos were also created in NVivo 12 for documenting my thoughts and insights that were emerging as I was going through the data.

However, it should be noted that some codes were 'predetermined' by the research methods employed in the current study. For example, the use of an interview guide meant that a particular focus was already in place during data collection, so for instance, the supervisory relationship was derived from the literature (see Chapter 2) as an aspect to be explored in relation to my participants experiences. Predetermined codes, however, were also subject to an iterative process of gradual coding refinement, with the codes being revised with emerging research data and coding (Hammersley & Atkinson, 2007). These revisions eventually constituted the foundation of a thematic framework with identification of four themes that will be discussed in the next section.

4.8.2 Identifying themes

In the process of breaking down and making sense of data, Corbin & Strauss (2008) discuss how 'lower-level concepts' provide the details for the 'higher-level concept' (p. 52). In other words, higher-level concepts are themes which consist of or are constituted by lower-level concepts or codes. As an example of this process in my data analysis (see figure 4.2 below), I identified numerous codes that related to my participants' development in the PhD and these seven codes were merged into the theme labelled 'Markers of PhD development'.

Figure 4.2 Merging codes into themes



Through this iterative process I was able to consolidate my 67 codes into a framework of higher-level themes that worked in relation to the coded extracts. As a result of merging my codes I ended-up with an initial set of seven themes that included educational experiences prior to the PhD and social networks. However, after further review I identified that both of these themes could be incorporated into the theme of Life before the PhD and The PhD experience. Braun & Clarke (2006) suggest that this iterative process of theme review is a necessary step in thematic analysis with themes needing to be reassigned or made more general in order to

enable the effective capturing of concepts in the data. Through this process of refining my themes I ended-up with four themes that had clear definitions and names (see figure 4.3 below) and this process was informed by going back and forth between the literature and my research questions and the data.

Figure 4.3 Thematic framework

Theme	Definition
Life before the PhD	Defined as previous educational experiences, employment and motivations for PhD study.
Expectations of PhD study	What participants imagined PhD study would be like and what things informed these expectations and how these compared to the lived reality.
The PhD experience	How participants were challenged in their PhD study, how they adapted and how they resisted.
The doing of PhD work	Defined as the settings, organisation and barriers to undertaking PhD study and the part played by others.

Researchers argue that analysis is a complex process that draws on what the researcher has read and experienced and these influences are seen as important in analysing and coding the data. My study has been framed by my theoretical framework and I was aware of the way in which this shaped my working with the data with these lenses working as explanatory devices and organisational ways in which to think about my interview data. My analysis allowed me to identify the key codes running through the interviews. I became familiar with the data I had generated, I identified descriptive codes/themes between which I built connections; throughout the data collection process I constantly checked the coding with the

data, re-engaging with my data, re-exploring and re-evaluating it in terms of the theoretical perspectives that informed my conceptual framework and the original codes selected. I built connections between the key codes/themes I identified after each round of interviews and these form the basis of my four interconnected data driven chapters.

4.8.3 Writing up

The writing up process became an integral part of my research and where I found myself being regularly 'stuck' (Kiley, 2015, p. 53) in liminal spaces attempting to work out ways forward as the analysis proceeded and writing helped me to develop my emerging picture of how to interpret and present the findings. As discussed in chapter two, Wisker (2015) identifies how interpreting, theorising and developing findings from the research data provides an increased conceptual understanding of the requirements of academic writing at the PhD level and this has been my experience. As an example, I began writing up a draft of my findings in chapter five soon after I had completed the transcription of my second set of interviews and the coding processes. I found the writing process was beneficial in enabling me to organise my thinking and while I had a developing number of areas that I wanted to discuss, it was only by thinking through this by the process of writing that I was able to make more sense of my interpretations of the data.

Rather than aiming for perfection, Golding (2017) suggests that PhD students can benefit from the process of drafting and re-drafting their writing and I found this advice particularly helpful in relation to my chapters that discussed my findings. For instance, while I had initially written about home as a space of PhD work in relation to the molar line of the family in chapter five, with more careful consideration of my data, I later decided that this would be more effective if it was placed in chapter six

that considered the adaptations that my participants made in relation to their PhD study.

Thus, I found it helpful to consider the early writing of my findings as being provisional with these chapters being re-worked in terms of their presentation and in relation to the other data chapters as they were being developed. Through continued analysis of the original data, the addition of data from the second interviews and with consistent referencing of my conceptual framework, my writing was constructed, reviewed, reworked and then reconstructed. The final version of many sections of this thesis are now markedly different to the original writings.

4.9 Ethical considerations

In social research, the issue of ethics plays a central role in the development of a research project, as it directly relates to the integrity of a piece of research (Bryman, 2014). According to May (2003), 'ethics is concerned with the attempt to formulate codes and principles of moral behaviour' (p. 59). In other words, it is a set of principles, which governs morality and acceptable conduct, to ensure research is conducted in ethically acceptable ways. I ensured that I followed the required procedures in obtaining ethical permission to undertake the study and this section discusses the ethical considerations for my study.

This research study was carried out with ethical approval from my university (Data Protection Registration Number: Z6364106/2019/03/198 Date issued 28/03/19. See Appendix D). As well as adhering to the guidelines set out by my university's Research Ethics Review Process, I also conducted my research according to the 'Ethical Guidelines for Educational Research' as set out by the British Educational Research Association (BERA, 2011). Although there are no universal guidelines on ethics, the practices of consent, confidentiality and trust are generally considered as fundamental in social research (Ryen, 2016).

As my participants were PhD students undertaking research at Central University, there were risks in terms of their identifiability and I made them aware of this risk at the point of participation. Taking into account that my participants were being encouraged to speak about potentially sensitive issues in their PhD experience, preserving the anonymity of my participants was an important aspect of my work. The positioning of my participants meant it was crucial to go further than just changing their names in protecting their identities and meant changing some of their key characteristics in such a way that did not impact on the analysis and presentation of their experiences. In reporting on the research findings, I did not reveal the names of any participants and I made it clear to participants that I would do everything possible to make sure they would not be linked back to their data. Additionally, given the personal nature of my research, that asked participants to reflect on and discuss their PhD experience, there was a risk that being involved in this research project might be potentially upsetting. Therefore, I highlighted this fact to participants in the information sheet as well as providing the details of support services available at Central University. Given that my participants also submitted their own images of their PhD experience, it was important to ensure that their permission for the usage of their photos was a category on the consent form.

Prior to the first interview, I ensured that participants all received the information sheet (see Appendix E) as well as a consent form (see Appendix F), which gave a guarantee of confidentiality and anonymity for the participants. The information sheet and consent form were emailed to participants in advance and were discussed in detail at the first interview. Participants were made aware that they could withdraw from the research process any time up until 31 December 2020.

Participants were contacted by email prior to receiving the information sheet so I could outline some details of what the research entailed. Bell (2005) suggests that

the researcher should ensure that there is 'careful preparation involving explanation and consultation before any data collecting begins' (p.45). Participants were also informed that any information about them would be stored in a secure location. The participants were asked if they had any questions or concerns both before and after each interview.

Guillemin & Gillam (2004) state that following procedural ethics alone is not sufficient for it does not address the other 'ethically important moments in qualitative research' (p.262). There are issues involving confidentiality, informed consent and the consequences of interviewing. Ensuring confidentiality and anonymity relies on the honesty of the interviewer. As Bridges (1989) suggests, 'honesty and openness in any relationship are supported by and demand reciprocal obligations' (p.145). However, even if ethical procedures have been adhered to, Delamont (2002) suggests that 'moral dilemmas' (p.81) can arise in areas where least expected and this proved to be the case for how I ethically presented the photos that my research had generated.

Wiles et al (2008) claim that the ethical issues raised by visual research can be distinct from those that are raised by textual data and Pink (2013) suggests that confidentiality and anonymity can become a little more difficult. When consent for the use of images is granted, the visual researcher still has an ethical duty to consider the risks that the publication of visual data might hold for the participant (Wiles et al., 2012). Just as with textual research, consent is required when taking or using another person's photograph. Despite having referred to the BSA's Visual Sociology's Group (2006) Statement of Ethical Practice and included participant agreement to the usage of images on the consent form, I had not explored this deeply enough. Wiles et al (2012) state that even when consent for the use of

images is granted, the visual researcher still has an ethical duty to consider the risks that the publication of visual data might hold for the participant.

For Pink (2013) a signed consent form does not give researchers autonomy to use the photographs in unlimited ways and Wiles et al (2011) highlight how issues remain around image ownership, 'researchers wishing...to use images made by others by, for example, publishing them should be aware of laws that safeguard copyright' (p. 688). These authors stress how copyright continues to rest with the participant and how it is necessary for the participant to assign copyright to the researcher for the subsequent use of images in their research.

My consent form had not covered this ownership and copyright issue and I had not considered how in visual research ownership and copyright is a factor that needs to be considered. Therefore, following my data analysis and the final choice of images that would feature in my thesis, I contacted the participants who owned these images asking them for their agreement to assign their copyright to myself to use their images that appear in this thesis and they all agreed to do so.

In addition to ethical considerations, the status of the researcher can also shape the type of data collected in a qualitative research study, which I discuss next.

4.10 The role of the researcher

This section examines the role of the researcher in the production of research data with their participants, a stance sometimes referred to as reflexivity (Rose, 1997) or positionality (Merriam et al, 2001). My position as a researcher is defined by my identity in relation to my participants and my position incorporated both etic (outsider–researcher) and emic (insider–researcher) perspectives (Lapan et al, 2011).

I was highly conscious of my insider/outsider positionality in undertaking this research. As an insider I was someone who was also undertaking the PhD and as an outsider I brought my own history and interconnected lines together with my identity of being a mature, part-time, male PhD student who also works in the higher education sector and both roles were extremely intertwined at times. For instance, my work with students in a university setting gave me an insider insight into the challenges faced by PhD students and it also meant I was aware of how academic colleagues react to their role as supervisors. In addition, I was also informed of the career paths that exist in the higher education sector for those who have completed a PhD in the social sciences.

Thus, I came to this research as potentially well-informed of the nature and the outcomes of PhD study. In regard to my positionality, there was a need for reflexivity in acknowledging that the knowledge that I brought to this research shaped my perceptions of what participants might tell me and influenced the interactions that I had with participants. The internal knowledge I have of the higher education sector meant I occupied a privileged position in undertaking this research that resulted in bias being an inevitable aspect in undertaking this research, but as Griffith (1998) asserts the key is to recognise this: 'bias comes not from having ethical and political positions – this is inevitable – but from not acknowledging them. Not only does such acknowledgment help to unmask any bias that is implicit in those views, but it helps to provide a way of responding critically and sensitively to the research' (p.133).

My ontological positioning, as a PhD student, doing research with participants who are also PhD students, played a role in the development of my study. While the intention of my study was not be autoethnographic, it is important to acknowledge given my positioning how there is an inevitable element of 'self in the collective' (Suresh Canagarajah, 2012, p. 118) and how I as an insider discuss the

experiences of those undertaking PhD study. In discussing the benefits of this, Taylor (2011) argues that prior knowledge of a group and its members facilitates a deeper understanding and rapport with participants. Stanley & Wise (1993) describe this experience of knowing as an 'epistemological privilege' (p. 227), with researchers having access to a priori knowledge of their informants' subjective realities by virtue of their shared experiences. However, there was also a strain in occupying the insider position both for myself and my participants. While it's important that they felt able to talk freely about their PhD experience, this sense of familiarity with the researcher could inadvertently lead to the disclosure of compromising and emotive information about the institution and individuals. Conversely, my participants may have been more honest with me as a result of my positioning as a PhD student who was familiar with the challenges of the qualification. For example, it may be that Nuala would not have discussed how demoralised she was with the PhD after six years of study or others would not have admitted to wanting to give-up their research on a regular basis or for some participants deliberately avoiding contact with their supervisors. As the researcher it was important to continuously acknowledge how over-disclosure was always a possibility, but equally how this risk may also result in things not being said by participants.

Given my insider positioning I felt it was important to create some distance between myself and my participants in helping to avoid an almost schizophrenic relationship between myself and what I was researching whereby a very close involvement could lead to tunnel vision and almost a disconnection with the reality under study. I found writing a fieldwork journal a helpful aid in collecting my thoughts and it also helped me recognise and track my own emotions and most valuably it provided me with a writing space in which to separate my experience of the PhD from my participants. Tam (2016) claims that keeping a fieldwork diary can aid the process

of reflexivity and this was something that I found was particularly helpful in my experience. Reflecting on the entries in my journal I can see how initially exhilarated I was to receive responses from participants, but also how I found some interviews emotionally draining and how difficult it was to be objective when participants discussed their particular frustrations with their PhD, such as not having their own office when I knew from professional experience how unrealistic some of these expectations were. This process of self-auditing my responses has enabled me to become self-critical during the whole process of data analysis and writing up.

As a result of my positionality, it was important to retain a level of objectivity with my participants. Bondi (2003) argues that some level of objectivity is important in the interview process as it enables the researcher to be emotionally present to participants' responses, while also staying in touch with, and reflecting on their own feelings. In this way there is not a danger of the interviewer becoming unconsciously overwhelmed by the respondents' stories, reacting to rather than reflecting on what is going on, and blurring the interviewer/interviewee boundary.

In terms of how I positioned myself in the interviewing process, all the participants knew my background and therefore were aware that I might have an understanding of their experiences as PhD students. I was mindful of the fact that in my role as the interviewer it was important to maintain a distance between myself as a PhD student, interviewing other students that had the potential to appear unprofessional with too much informality. To address this, I ensured that when interviewing participants, I established an interview 'environment' where I adopted a clear interviewer role by placing a recording device between us and taking notes during the interview. This helped maintain a certain 'professional distance' during the course of the interview. I understood as the researcher that I defined the interview situation, introducing the topics for discussion and through further questioning

steering the course of the interview (Kvale, 1996). I tried to ensure that my participants were at ease before the interviews and that the relationship between us was relaxed. During the interviews, participants were able to speak openly, freely and with no interruptions (Kvale, 1996). I was also conscious of trying to be a careful listener, of being sensitive to any attitude changes in the participants when certain lines of questioning were being pursued. For example, when the two participants became emotional discussing family matters in relation to PhD study

My position as a researcher but also as a PhD student meant that these experiences affected how I approached the data analysis. Corbin & Strauss (2008) talk about qualitative researchers drawing on their own experiences when analysing data. They suggest that a researcher who has a similar experience to that of the participants is able to 'understand the significance of some things more quickly' as well as 'enhance sensitivity' (p.33). This can also help in ensuring that the conclusions that the researcher arrives at are grounded more fully in the data as, they explain, 'sensitivity enables a researcher to grasp meaning and respond intellectually and emotionally to what is being said in the data' (p.41). There are of course potential pitfalls of being so closely connected to what is being researched and there may be the temptation to 'showcase [...] confessional tales about yourself' (Mason, 2002, p.5). However, if the researcher maintains self-criticality and reflexivity throughout the research process, then, according to Mason (2000) their knowledge of the field can illuminate the research problem.

Nevertheless, it is important to acknowledge that given my own positionality, there are some potential limits to data authenticity. To confront this issue, I was mindful of being reflexive throughout the research process and this was a key concern of mine. As Creswell (2008) says of reflexive researchers: 'As individuals who have a history and a cultural background themselves, they realize that their interpretation

is only one possibility '(p. 485). While I had to be aware of my own perspectives and positionality during the interview, I also had to allow the focus to be on the perspectives of the person I was interviewing. I understood that as the researcher I was the 'central figure who actively constructs the collection, selection and interpretation of data' (Finlay & Gough, 2003, p. 5) and that meanings are negotiated within particular social contexts so that another researcher will unfold a different story. Reflexivity requires critical self-reflection of the ways in which researchers' social background, assumptions, positioning and behaviour impact on the research process.

As a researcher having both insider and outsider perspectives, I had some understanding of the PhD experience and with this came a set of preconceived ideas about the challenges, adaptations and the resistances of those I was researching, having worked with PhD students and being one myself. This meant, that I had to be rigorous at checking those biases throughout the process. It was particularly the case during the analysis of the interviews and arriving at an explanation of the data. I tried to do this by monitoring my own reactions with the participants as well as my biases and place in the research (Cohen et al, 2011).

My own positioning and the impact of my reflexivity influenced and shaped this research, from my initial questions to my final findings. Burr (2003) argues that a researcher's own assumptions inform the choice of questions that get asked in research and how these questions are framed. For instance, in asking my participants to discuss the challenges and that they have faced in their PhD study and how they adapted might suggest a framing of the qualification as a process of struggle. While this was the case in how participants discussed their PhD experiences, they also discussed how they also enjoyed it and what they had gained through the process. For instance, Nuala discussed how she had 'really

loved the data collection and the analysis' and Julia had really enjoyed 'curating her own training' and discussing her research with other PhD students in the department. While Jana could see the overall benefit of her research in bringing attention to the communities that she was working with.

Finally, while attempting to strive for an ethical co-production of research, I was still in control of the questions that were asked, and it was also my decision as to which of their accounts I selected to write about and how this data was interpreted for the reader.

Summary

In this chapter I have explained the theoretical positioning that frames my research. In contrast to the existing literature on the PhD student experience my interest was in exploring the interconnected nature of PhD study and how my participants experiences were informed and influenced by their existing identities and how adaptation can be a messy, ongoing process.

My theoretical framework of the PhD student experience as being an assemblage of interconnected lines run through this study and have informed my choice of methodology and data analysis. In the analysis of my data, I chose a qualitative approach because it is characterised by its central concern for how the individual interprets their social world. In consequence, the methods of data collection I chose were the semi-structured interview and photo-elicitation. As previously discussed, I acknowledge that following a qualitative research approach has its limitations, but I believe the benefits of using this approach has outweighed any disadvantages as it has yielded a particularly rich and in-depth set of data. My data analysis and writing up processes were also informed by Deleuze & Guattari's concepts as well as by my readings of relevant literature and the sense I made of what my participants had to say. The final section of this chapter centres on my concerns

with ethical considerations, my engagement in the process of reflexivity throughout the project and my position within the research. The next chapter addresses the first research question of my study, which investigates how my participants were challenged by aspects of their backgrounds in undertaking PhD study.

Chapter 5 How family, work and previous study can challenge PhD development

5.1 Introduction

I begin my three findings chapters with an exploration of the ways that my participants were challenged by aspects of their own molar lines in undertaking their PhD study. While the literature as discussed in chapter two has highlighted the challenges that students contend with during their study, in contrast this chapter will take account of the molar lines that my participants bring to the PhD and how these impact on their progression. I will begin this chapter by briefly discussing the process of identifying the forms of molar line that my participants brought to the PhD, before moving onto discuss these in detail and how they impacted on their development.

By using the molar line as the first lens with which to explore my data I am following the advice that Deleuze & Guattari (1987) gave about this line being the 'first kind of line' (p. 505). However, they also go onto state in *A Thousand Plateaus* (1987) that 'it is also possible to begin with the line of flight: perhaps this is the primary line' (p. 204) Despite this contradiction, for the purposes of my finding chapters and in order to take account of the molarity that my participants began their PhD study with, I will start with the concept of the molar line.

5.2 Identifying molarity in the PhD student experience

For Deleuze & Guattari (1987) molar lines position elements within highly organised, concrete spaces. In relation to the molar aggregates that affect individuals they provide the examples of lifecycle stages that include family, education and employment. The impact of these specific external lines is to position the individual in rigid ways through the application of institutional rules and they work as societal control mechanisms through which we also discipline ourselves.

They state: 'we are segmented in a linear fashion, along a straight line or a number of straight lines, of which each segment represents an episode or "proceeding"' (p. 309). Various authors (De Miranda, 2013; Holland, 2013 and Strom & Martin, 2017) state that the impact of this molarity is that it can make it a challenge for individuals to adapt when undertaking new forms of life stage experience, as these are impacted by their existing molar lines that can work to be repressive and constrictive. As well as this established lifecycle molarity, Windsor (2015) highlights how our molar lines are also comprised of assumptions that provide individuals with 'a certain experiential traction, orientation and consistency' (p. 160) in how they approach new experiences. As will be discussed in this chapter, all of my participants came to PhD study with sets of assumptions about what it might involve and at times these did not correspond to the lived reality. These expectations were informed by their own molar lines and as will be detailed, these could conflict with the molarity of the assemblage of PhD study.

When it came to identifying examples of my participants' molar lines, I was guided by Deleuze & Guattari (1987) in looking for instances when they discussed their molarity in relation to their family, employment and previous experiences of education. Using the concept of the molar line and focusing solely on those challenging aspects that participants had brought to their study enabled me to exclude data from this process. For instance, I did not include challenges that arose as a result of their PhD study and only included challenges that related to what Deleuze & Guattari (1987) define as being a molar line. In keeping with Deleuze's (2007) ordering of the molar lines, I will begin with the family.

5.3 The family as a molar line and how it impacted on my participants' PhD experience.

Deleuze & Guattari (1987) discuss the great molar powers of the family (p.233) and as an institution it is linked to social reproduction. They claim that state bodies have a special relation to families as 'they link the family model to the State model at both ends' (p. 366). As a result of this dominant positioning, Deleuze & Guattari highlight how molar forms of doing and thinking uphold the molarity of the family. So, individuals get married, decide to have children, raise them and so on and for Holland (2013) these are all delineated as major components of the family as a molar line. In this section I will consider how families, while being part of the molar line, also worked to be molecular in enabling my participants to adapt to the demands of their PhD study.

When discussing their families, my participants either meant their parents or for those who were more mature they tended to use the term 'family' to mean their partner and children. For those who used the term in relation to their parents, while often supportive of their child's decision to do a PhD, as Ben explained:

... they've been supportive and enthusiastic and sympathetic in the way that you can be if you don't really understand what somebody is doing. There is a recognition that a PhD is a lot of words.

Similarly, for Gemma she stated that her family were not 'academic' and as a result, 'they have no idea of what I'm doing, and that's quite hard. I mean, it's not stopped me, but it is a factor with the PhD'.

In contrast, other participants had parents who did understand what was involved in PhD study, as Carlos discussed, 'both my Mum and my Dad have PhDs as well. So obviously they were motivating me all this time.' For Julia not only were her parents supportive, her father played a role in shaping her research:

The field I'm in directly relates to the job my Dad had previously. And the orientation I take towards it, is definitely shaped by being in his company from... you know, growing up with him.

For my participants who had their own families, undertaking the PhD was a challenge, where they needed to separate out their roles being PhD students from being parents. Nuala discussed how the PhD had often taken priority over her role as a parent, 'I do feel it comes before my family at times' and as a result she felt she was not really there for them. For example, when her children were sick, due to the PhD she was not always there to look after them, leaving her to conclude: 'I suppose there's always this feeling, that pull away from your family and whether or not this is worth it'. Van Engen et al (2019) discuss how academia as a profession is often construed as being all-encompassing without much room for other identities. In contrast, for Ben, his baby took precedence over his research writing:

If you know that you're not going to get any sleep because your nine-month-old wakes up five times the night before I need to submit something, it does make it easier to email my supervisor explaining it will be late.

For seven of my participants, their relationship with their partner played a decisive role in their development as a PhD student. Both Lorna and Nuala discussed having very supportive husbands, with Nuala explaining: 'My husband is great. He does pretty much everything at home now'. George and Peter discussed having wives who have been very supportive of their initial choice to do a PhD as mature students and this confirms the literature (Lucas & McAlpine, 2011; Spaulding & Rockinson-Szapkiw, 2012 and Acker & Haque, 2015) that significant others can provide the time and space to enable their respective spouses to progress with their research. For example, Nuala explained how 'amazing' her husband was in coping with childcare when she needed to attend conferences:

He rang me yesterday and he said, "I've booked your ticket for next week and I've taken the week off, so you don't have to worry about organising childcare now."

For Lorna, her husband was very good at 'doing the mundane housework'. 'He does all the cooking and it's like really good food and he does all that. So, I don't have to worry about any of that'. In providing this level of support, rather than being part of the molar line of family with its rigid positioning of members, these participants' partners enabled them to focus on their research. Hendricks & Koro-Ljungberg (2015) highlight how molar forms can shift over time in the family so that fathers can occupy spaces typically held by mothers in 'becoming-mother' when it might be needed (p. 277). Despite this happening for some participants, Ben detailed how for his wife who was having to cope with the time demands of a newborn son, the PhD could also be a source of frustration in their relationship and as 'something that I'm carrying on my shoulders alongside everything else'.

When asked directly about whether their spouses understood the research work that they were doing, the responses highlighted how deliberately reticent my participants felt about sharing their PhD studies. Nuala explained, 'while he's absolutely supportive, I never discuss what I'm doing with him'. Jana similarly discussed not mentioning her PhD when she spent time with her partner on the weekend. When asked about their reticence, both Nuala and Jana explained that neither of their partners had had a good experience of education or were particularly 'academic' and they discussed them as not being as educationally motivated as they are. Jana explained:

I think it's very difficult when your partner barely passed university to relate to why you want to continue with further education if they really hated education.

For Jana, Nuala and Lorna, the educational differences they perceived between themselves and their partners, was also a consolation at times as Nuala explained:

He doesn't pursue education in the same way that I do, which is probably a good thing because it just wouldn't be for us both to do it. I'd love to take a step back and for him to go and do something, but I'm not sure he's motivated to do it.

Jana also identified there being a direct benefit in having a partner who was not as educationally motivated when it came to the place that the PhD might occupy in relation to their family identities, 'I think doing different things is actually good because the time I spend with him is not only about my research'.

For my participants their family roles and the support that they derived from their partners confirms what the literature states about this aspect of PhD student development. However, in contrast to Guerin et al (2015) who argue that the family are an on-going source of motivation and support, I identified a more nuanced view from my data. Here significant others provide more compartmentalised support through their practical assistance in providing childcare and cooking and in so doing uphold the molar line of the family and 'the preservation of a hard-segmented world' (Deleuze & Parnet, 2007, p. 124). This in turn enabled my participants to focus on their research, with partners often having little understanding or interest in the research that their partner is undertaking or in them providing a motivating role.

5.4 Professional experience as a molar line

Deleuze (2007) explains how employment is one of the molar lines that structure society with institutional rules that help to uphold the established order. Strom & Martin (2016) claim that people internalise the structuring found in the workplace that results in individuals disciplining themselves in relation to the accepted conventions of the work assemblage. In adapting, the individual internalises the acceptable rules and behaviours so that they become part of their own molarity and

in so doing this can make adapting to other highly structured assemblages a challenge. For those coming to the PhD, various authors (Colbeck, 2008; Mewburn, 2011 and Gardner & Gopaul, 2012) have suggested that those with professional experience find it more of a challenge to adapt.

Four of my eleven participants came to the PhD with more than 10 years of work experience, and all were doing the PhD on a full-time basis and were no longer working. Two of my participants, Peter and George, had both retired and while both compared their PhD study to their previous work environment, Peter had remained particularly critical about the lack of support given to PhD students. Lorna had been working for more than a decade in a research setting and had imagined that this would have enabled her to make a smoother transition to PhD study, while Greg had come to the PhD after a senior career in social work that he had 'hated' and was enjoying 'not working'. In the following section, I present illustrative examples of how this molar theme of having a well-developed professional identity played out first for those participants who were doing the PhD on a full-time and then for those who were combining work while studying on a part-time basis.

5.4.1 Undertaking the PhD with a well-developed professional identity

Peter came to the PhD with a well-developed professional identity as a retired head-teacher and contrasted the support and guidance provided to students in the school system to what he had found as a PhD student:

I've worked in schools and I've lived through the 20-year period of the wind of change in schools, where schools have been made accountable – some of which I don't agree with, but some of which I do. I think universities are very unaccountable... right from the outset I was quite disappointed in the support that I got, not just from the supervisors.

In both his interviews Peter discussed how challenging it was to reconcile his developing PhD student identity with his well-developed professional identity and the expectations he had about the types of support that should be provided. Peter contrasted his experiences in schools with the PhD setting by providing figure 1 below to illustrate his sense of disillusionment with what he had found in the university environment. He discussed how unwelcoming this felt compared to the schools he had worked in:



Figure 1: Peter: 'an impersonal organisation'

This sign was outside a room where actually I was doing some work with some undergraduates a few weeks' ago. That, to me sums up something about the university. It's negative – it's off-putting. It's like "Don't step on the grass," kind of thing. Don't do this, don't ask me this. I have found it quite an impersonal organisation.

When asked to discuss this further, Peter explained that he had faced numerous 'obstacles' in returning to study and he had found it challenging in accessing support at Central University, so the choice of this image was very deliberate for him as it represented the nature of the university environment. Following his teaching career, Peter had been surprised to find the university 'not as open and accessible as I thought they would be', a view that corresponds to the notion of the university as a highly structured assemblage (Bacevic, 2019) that can be difficult for non-members to access.

George contrasted the evolving nature of undertaking his research study as a PhD student with his previous legal career where his work often required a shorter-term focus:

That's both the annoying thing and the good thing about academic life. It never stops. I've spent 28 years reaching a climax which is the judge's decision as to who was wrong and who was right. I still hanker after the search for truth, but that doesn't often happen in historical terms.

Lorna had worked as a Research Assistant prior to coming to the PhD and had imagined that this work experience would be a good preparation for PhD study. However, she discussed how her previous experience had in fact worked against her transition as the ability to work collaboratively on a research project was no longer possible and instead there was a need for her to work much more autonomously as PhD student:

I'd worked on projects for paid employment that were designed and written by another person. And I would work on them as an RA, or I would collaborate with the person to design a project and what do you want to do, but I don't have an identity as a PhD student yet, so I don't actually know what I want to do!

Given the well-developed nature of Peter, George and Lorna's work experience it is not surprising that they found the transition more challenging. Labaree (2003) highlights how laboured the transition process can be for those undertaking a PhD, like Peter, from the teaching profession, where this identity development 'constitutes a major change in occupational role and requires an accompanying change in professional priorities' (p. 18 – 19). Strom & Martin (2016) explain that this is in part because the teaching profession is highly regulated with molar lines that create striated spaces, which contrasts with the more autonomous nature of PhD study.

In contrast Greg's transition from a career in social work to becoming a PhD student seemed far smoother. Unlike the other three participants, his professional status enabled him to provide a level of security for his family, but ultimately gave him little enjoyment or the personal fulfilment he had found in doing research:

I'm a lot happier and now the quality of my life is amazing. This is the best my life has ever been. I spent a very long time trying to get out of social work. Unlike the PhD, I never enjoyed it in the slightest.

Rather than making an unfavourable contrast between his working life and the PhD, Greg identified those aspects of research that were not present in his working life. For him undertaking PhD study had more value than his previous work and he felt 'it was the natural thing to do' since he had always 'wanted to analyse how stuff works because I really like big data sets and working out correlations between factors'. He also talked about enjoying the autonomy of PhD study and how he had 'always felt well supported' and the fact that he was 'proud to be a researcher'. For Greg being a PhD student had provided him with a role he was happy to have in comparison to his professional experience, and as a result in both his interviews he was consistently positive about his PhD study. This favourable view was also

derived from having previously attempted and failed to do a PhD on a part-time basis while he was working; he had found this challenging as he was 'always working'. In contrast his full-time PhD had enabled him to 'just immerse myself in the wonderful environment of this particular university' without having to do paid work, and his previous experience of the PhD had provided him with a good understanding of the requirements.

In varying ways all four of my participants were impacted by their professional experience in undertaking their PhD study and there was a sense of needing to separate or compartmentalise themselves from their previous professional experience in order to enable their development as a PhD student. They each discussed the process in different ways. Lorna talked about how her professional work had been a collaborative process that involved working with a range of people to interpret data and 'bouncing ideas' off her colleagues. In contrast she discussed needing to work very differently on her PhD, claiming that while supervisors might provide advice, they are not there to provide answers and instead 'you're on your own'. George discussed how in his legal career he had been used to putting points across and while he had begun his PhD study with the same approach, he began to modify his behaviour as it didn't seem appropriate in this new setting:

Not that I was necessarily hogging it, but I do remember thinking, "I ought to shut up in some of these training seminars in order to give the other students a chance to make their observations and make their arguments."

Both Greg and Peter were much more explicit in how they compartmentalised their previous professional experiences. Greg preferred to focus on the fact that he was a PhD student and not what he had done before, and the PhD had given him 'an identity that I can actually share with people'. He had not told anyone that he was doing the PhD with that he had previously been a social worker:

If anyone asked me what I do for a living, I change the subject, or I'd tell them I was in risk analytics for a local government agency and there is never a second question after that.

Peter had begun his PhD imagining that his department would be keen to hear about his teaching experiences as a former headteacher and had spoken to members of university staff about how it might be shared. While there had been some initial attention, he had been left feeling that there was little departmental interest in his practitioner experience. He said, 'I'll be honest with you, I thought they might recognise my experience as a practitioner a little bit more, but the opposite. They're almost like, "Don't tell me that"'. As a result of feeling that his professional experience was of little value, he then decided that he would not share further details:

I don't even talk to people here about my previous life now. To begin with I might have done and now I don't. A few people might say, "What did you use to do?" "Oh, a bit of teaching" you know.

Rozuel (2011) argues that to compartmentalise means to divide something into distinct and separate sub-sections and discusses how it is necessary to isolate and separate certain aspects from the rest of our personality or from our core self. Pratt & Foreman (2000) claim that we embrace multiple identities through our life, each being defined and influenced by the groups we interact with or the roles we perceive we ought to or wish to enact. For this group of participants, in choosing not to discuss their careers, there is a sense of compartmentalising these experiences as they perceived it did not carry much value for them in the PhD setting. What is also clear from these participants is that they recognised that the social and cultural capital they had acquired in the development of their professional experience was not easily transferable, and as a result they modified their language and how they

discussed themselves in their departments and with their peer groups. Deleuze (2007) claims that together with molar lines, binary machines segment and code our lives by providing individuals with a status in relation to what is perceived as having value. For this group of participants, the status they acquired in their professional experience had little recognition in relation to the assemblage of PhD study.

Given that these participants were compartmentalising their professional experience to enable them to better fit-in to the PhD setting, I discussed with them what their perception of a typical PhD student might be. There was a view that their peers were younger and had less work experience and very different lives. George explained:

Most of them are younger than me, it's all extremely polite when we're in seminars. Clearly after the seminar, I've got different things to go back to and I've got other commitments and so I don't mix with other PhD students outside the seminars I go to.

Lorna felt similarly, adding: 'I would say my cohort are very youthful in that they want to get together and they get a bit annoyed when us older people don't turn up for the social events'. Given this perception it is perhaps unsurprising that my participants with well-developed professional experience would want to keep hidden aspects of their identity that might not seem to fit within the PhD environment. While Rozuel (2011) highlights that approaches like these might help individuals 'to make sense of the world and cope with disruptions', (p. 689), he also acknowledges that it can be a negative process that can leave individuals feeling judgmental towards themselves.

For my participants, in deciding to not discuss their professional experience a sense of 'othering' accompanied their compartmentalisation. According to Gillespie (2007)

the process of othering occurs when 'the Self represents Other in terms of what Self is not' (p. 3). In other words, othering involves individuals perceiving themselves as being different compared to the predetermined notions of normality in a particular social network. For my participants with professional experience, it was more of a challenge to fit in perceiving that their peers were younger and with fewer commitments. Gee (1999) observes that to be thought of as a member of a group involves socially acceptable 'ways of using language, of thinking, valuing, acting and interacting in the right places at the right times' (p. 17). By not discussing their professional experience, these participants had attempted to fit within the social network of PhD study, but there was also an acceptance that their lives and commitments meant they had a very different relationship with the PhD compared to their younger peers. This was particularly the case for Peter who acknowledged in his second interview that he had struggled to compartmentalise his professional status from his evolving PhD student development:

This role of leaving being a practitioner to becoming a researcher. I've probably found that slightly harder to do and I probably spent a bit too long in the beginning still staying there.

In summary, the participants with the most well-developed professional experience were more questioning about the PhD study process and had a tendency to compare things they were experiencing in the PhD (such as isolation, a perceived lack of support and uncertainty about the messy nature of their research work) with the more stable nature of their working lives. Deleuze (2007) discusses how as part of the 'state apparatus' the molar line 'organizes the prevailing statements and the established order of society, the dominant languages and knowledge' (p. 129) and having previously acquired molarity from their professional experience, for these

participants it was not easy to convert this or adapt to the expectations of the new assemblage of PhD study.

5.4.2 Combining a professional identity with being a part-time PhD student

In their study of part-time PhD students, Gardner & Gopaul (2012) discuss there being a normative idea that all PhD students are full-time and focused solely on their research; despite not being able to conform to this view, their participants still wanted to somehow fit the 'mold' (p. 71). In this section I will detail how for my part-time participants their professional experience impacted on the time that they could devote to their research and how they needed to prioritise aspects of their study that in turn worked as a molar line, compromising their development as a PhD student.

For my three part-time participants, Gemma, Nuala and Ben, the theme of wanting to fit-in was prominent and they all discussed their preference for wanting to have undertaken their PhD on a full-time basis. The frustrations of needing to do professional work while also doing a PhD were prominent for them all. Just as with the full-time participants who had well-developed professional experience, work also impacted on my part-time participants. With this group, the organisation and success that they were able to achieve in their professional work contrasted with the lack of time and care they were able to devote to development as a PhD student. Nuala discussed her deep sense of frustration at not being able to organise and control her PhD in the way that she was able to do with her professional life:

I am quite organised in my job and I would be considered somebody who's a details person, but I feel like I'm not that at all in my doctoral studies.

Gemma felt the frustration of trying to be organised being a part-time PhD student, but not always having this acknowledged by the institution: 'I got told about

induction two days before it was about to happen, to which I said, “Look, I’m part time. I’m working. They say they’re supportive of part timers, but not really’. Neumann & Rodwell (2009) discuss how part-time PhD students can feel overlooked when training and development is based the idea that all students are full-time.

Ben discussed how it was a challenge trying to place a structure on his part-time research work when he had already spent the day working in a highly structured work environment:

It’s hard to sometimes enforce that on other aspects of my life when I know I have to be in five meetings in places in a day. I might actually get halfway through sitting in the library at the end of that day and think, “Actually, no I’d rather go and play squash or go to the pub with friends and just do something else.” I don’t beat myself up for the lack of structure.

While it might be a challenge for part-time students to enforce a structure on their PhD, Smith (2000) argues that this is primarily because of time pressures due to these students being in full-time employment. Each of my participants in this group discussed not having sufficient time from their working lives to dedicate to the multidimensional aspects of their research work. As Gemma explained:

I think there’s time to do the PhD and then there’s time to think about the PhD and then there’s time to talk about the PhD, and all of these require different amounts of time. It’s not like you can stick them in all in one place.

On top of work and PhD study, Ben highlighted how there were other aspects of life that needed his attention and could mean that his research was the last thing to get done. He provided figure 2 below and discussed how ‘chaotic’ his home life was and how difficult he found it to make the time to focus on his writing and how as a result he would end-up working in cafes:

It's chaotic because we're in the stage of moving everything around and trying to childproof everything because our son's starting to walk. I'm halfway through tiling the kitchen. It's not a good environment to think and write.



Figure 2: Ben: It's chaotic

The limited research published on the part-time PhD student experience highlights how these individuals need to *balance* their PhD and work identities. However, what I detected with my participants was that it was not necessarily a case of balancing, but again more a sense of compartmentalising these identities, with specific aspects of their lives taking prominence at different times, depending on what

needed to be done. Ben, for example, tried setting aside time to work on his PhD, but this separation was not always successful:

I've tried to keep those two lives separate. Not entirely successfully. And quite often on days where I've set aside time to do my PhD, something pressing work-related will turn up and pull me into an office or into a room. They're always invading each other.

For both Nuala and Gemma their teaching commitments meant that they rarely did much PhD research during term times. As Gemma discussed, 'when you are teaching it can be quite difficult to write'; similarly, when asked if she did research work during term time, Nuala replied, 'I just feel like because it's part-time, it's the last thing that ever gets done and it is always last minute'.

Gemma explained how compartmentalising felt like having two jobs, with one taking priority over the other at different times:

It fluctuates and sometimes the PhD is my first job, paid work is my second job. Sometimes that's the first job and this is the second job and I feel a lot of my time in this first year is spent working out what that balance is and also maybe it isn't one or the other, but it has to fluctuate depending on what I'm doing in the year – because if I'm teaching and then I'm marking, I realise this year I just can't do anything to my PhD. I just can't.

As a result of compartmentalising and with work taking a higher priority, Ben explained how he viewed his research after four years as feeling more like a leisure activity that is done in his spare time, but that this made his development as a PhD student more of a struggle.

Unlike my group of full-timers who choose not to discuss their well-developed professional experience, this group did not set out to deliberately underplay the fact

that they were working while undertaking the PhD on a part-time basis. Rather, due to time pressures, these participants did not engage in any consistent way with their peers, departments or wider academic communities. This resulted in limited opportunities for a wider recognition of their development as PhD students. These participants discussed how they rarely visited the university or knew any other PhD students in the same department. This was partly because of having other commitments, but there was also a sense of the part-timers making a judgement on the value of these interactions. For my part-time participants they made strategic decisions about how they positioned themselves in terms of what was important and relevant (such as interactions with supervisors) and what can be spared (like contact with other PhD students and attending departmental events).

Ben discussed how his work meant he didn't have the flexibility to be able to attend events easily:

Evening events are difficult, attending some seminars is really challenging. The administration is pretty abysmal and everything changes at the last moment. So, in term time when we have a weekly research training seminar, some of which I've tried to attend, they can very often move rooms, locations or times three hours before.

Through discussion with these participants there was general sense of dissatisfaction with being a part-time PhD student. Given the choice, all three would have preferred to do a full-time PhD. This was especially the case for Ben, who explained that his preference had always been to be a funded, full-time PhD student, but he had been unable to secure funding: 'I don't know off the top of my head anybody else that's part-time and self-funded'. He discussed it not being easy to attend conferences due to his work commitments and not being able to be part of a student community

Now, because of the way that the time balance has... because of the way that my time is now split, between my job and the PhD, the PhD feels like the hobby in a way. No, hobby's not really the right word. I don't... I wouldn't identify primarily as a researcher or as a student.

Gemma discussed in her first interview how she wanted to do the PhD on a full-time basis, but she also needed to work full-time to enable her to continue her city life:

I do have to do it part-time because I need my job to live in the city. That actually is my biggest challenge because there are many times when I think, "I really just want to quit my job and study full time and get on with my new life that I'm hoping to have." [Laughs]

Despite needing to accept their PhD status, these participants still wanted to commit to as much study as possible. That meant grabbing opportunities when they could to do research work. Gemma discussed spending time in the work library when she had a few hours spare, while Ben discussed working in coffee shops as they provided a space away from his employment. For Nuala her work travel meant time away from the dual molarity of work and family, as she explained:

I quite like the travel peace and I quite like sitting in an airport and reading, and I'm quite productive because there's no competing demands on my attention.

Despite carving out these times and spaces in which to do PhD work, Gemma highlighted how for her there was still a sense of not being able to achieve as much in her research due to its part-time nature. That left her feeling frustrated at not being able to achieve as much as she would have if she had been full-time:

I sort of have been scribbling and writing, but also I suddenly realised, “Oh, this is what it feels like to be part-time because actually I’m not as far ahead as I wanted to be” and I haven’t done as much reading as the full-timers have.

Despite this commonality among these participants there were also aspects that were less uniform. For example, Ben found it most difficult to spend time on his research. He stated that he went for weeks at a time doing no research work with the result that he did not feel like a PhD student. He discussed how this impacted on how he positioned himself in comparison to his full-time peers: ‘I’ve noticed that very often the students will put ‘PhD candidate’ at the bottom of their email signature, which I have never done. I always put my name’. He explained he preferred not to do this because his engagement was so partial that having this named identity did not feel appropriate.

For Gemma and Nuala their engagement with their research and the institution varied but was more consistent; they also derived benefits from their employment as university lecturers. Similarly, their professional work related to their research, and gave them time at certain points in the year when they could focus more on their PhD as well as doing work related to their research development such as attending conferences and doing skills training.

In summary, for this group of participants, undertaking the PhD on a part-time basis might have been a financial necessity, but they all would have preferred to be able to dedicate more time to their research on a consistent basis. They discussed losing out by not having enough time to do their research, go to conferences or take more part in the academic community, and none of them identified any benefits in being a part-timer. In an attempt to overcome this disadvantage, some of these participants felt that they needed to operate as a full-timer either through their presence at events or by writing as much as they could when they got the

opportunities – something Nuala described as ‘getting ahead’. Similarly, to the full-time participants who struggled with converting the capital they had acquired through their professional experience, this was also an issue for the part-timers. This only worked for Gemma and Nuala when the molarity of their university work and the assemblage of PhD study interconnected to enable them to focus on their research more effectively over the summer. Nevertheless, for my part-timers, rather than balancing their professional experience with their PhD student development, there was mainly a sense of compartmentalising, but in such a way that their research often lost out to work commitments that took priority.

5.5 Previous educational experiences as a molar line

Deleuze & Guattari (1987) state that school constitutes a molar line that, like work and the family, conforms to structuring individuals in coded and regulated ways. They argue that ‘specific schools or institutions’ (p. 393) are part of the governing apparatus used by the state to uphold and reproduce its molar structuring. Deleuze (2007) discusses how school is part of the ordering of society, where individuals move from one molar life-stage such as education, to work and then retirement. As discussed in chapter 3, various authors (Hopwood, 2010; Bazzul & Kayumova, 2015 and Bacevic, 2019) have discussed the highly structured nature of education and I wanted to examine how my participants previous postgraduate taught study had worked to influence their assumptions about PhD study.

Deleuze & Guattari (1987) state that through the processes of adaptation to molar systems, ‘attitudes, perceptions, expectations’ (p. 215) are shaped in relation to complex assemblages and these in-turn become part of our molar line. As a result of the processes of reterritorialisation, Windsor (2015) claims that we are left with ‘a shared (molar) background of assumptions and traditions that provide a certain experiential traction, orientation and consistency’ (p. 160). Given that our molarity

can be shaped by previous adaptations to molar systems that can leave us with assumptions and the fact that according to Holbrook et al (2014) 'relatively little is known' (p. 329) about what PhD student expectations might have been before starting their study, in the next part of the chapter I will discuss how my participants thought the PhD would be comparable to their previous postgraduate study, how they expected to be part of a peer community and how they believed they would be supported in certain ways by their supervisors.

5.5.1 *'I thought it would be similar to my masters'*

For four of my participants (Carlos, Lin, Nuala and Lorna) there was an expectation that their PhD study would be like their previous postgraduate study. Carlos began his PhD imagining that it would be very structured: 'I guess I thought it would be similar to my masters, but that there would be more supervisions about what I was going to do'. Lin contrasted how the structure 'was planned out for you at undergraduate level and for the MA, with lots of deadlines attached to it'. As international students, Carlos and Lin had already gone through a process of adaptation to studying at postgraduate level; Christie et al (2013) note that for these students this can include adjusting to differences in academic expectations, English proficiencies, intellectual traditions and educational provisions across cultures. Consequently, McClure (2007) suggests that the period of transition for these students to adapt to postgraduate-level study is typically six months. Despite having successfully adapted to the structuring of postgraduate study, for these international participants there continued to be a need to adapt. Soong et al (2015) state that there is constant process of 'becoming' for international PhD students as they negotiate these complex 'cross-border worlds' (p. 2).

Home students also felt this lack of structure, with both Nuala and Lorna discussing how in comparison to their PhD, their previous study 'was more structured' and

generally 'quite directed'. Gardner (2009) claims that PhD students often initially struggle to grasp what's required and for my participants this was also the case with them expecting their PhD study to be more structured with more deadlines. Carlos discussed how as a result of not having this expected structure he had spent much of the first year 'feeling lost' and not prepared for the expectations of PhD study. Lorna made a link between the lack of structure in her PhD study and her tendency to procrastinate:

Structure for me is really important and works really well for me. If I don't have structure, I just procrastinate, I find other things to do and distract myself.

In contrast to this group of participants, others expected that they would be more autonomous, as Gemma discussed:

I didn't think it would be that structured, and I thought there would be less structure than what I actually have experienced. So, I was sort of like, "Yeah, I thought it would be quite hands-off..."

Julia discussed how she had felt from the start of her PhD that she needed to define a structure for her research. She provided figure 3 below to highlight how her 'PhD planner' was crucial in structuring her working days and enabling her to measure progress. The image of this planner was one part of a photo of Julia's desk and in discussing this space she drew particular attention to her planner and its value. She discussed how she had notebooks and planners for all aspects of her research and that they were arranged neatly on her desk and when asked about these she discussed how important organisation was in her 'autonomous' response to PhD study.



Figure 3: Julia: 'a to do list book'

This planner is a to do list book that I've had since the start of my PhD work and it's just pages and pages of crossed out things and my doctoral tasks for the day will be subdivided into minutiae so that I can strike them off.

Having adapted to the structured nature of postgraduate study, for some of my participants there was little appreciation that this process of adaptation would continue into their PhD study. Instead, they had an expectation that it would be similar to other educational experiences. This left them with a sense of frustration that this process of adaptation needed to continue, but with much less direction being provided. In contrast, other participants appreciated that a process of adaptation needed to continue, with these participants appreciating that a crucial part of this structuring work was a realisation that the difference between being a postgraduate taught and postgraduate research student was that PhD student needed to 'take more control' of their own work.

5.5.2 *I thought there would be some sort of community*

In addition to this lack of structure in the PhD, some participants discussed how they expected there to be more sense of community while doing their PhD study. While a sense of belonging has been noted as being important for PhD students (Wisker et al, 2010 and Zahl, 2015), and this is often provided by peer groups, my participants perceived that there was little community when compared to their experience as postgraduate taught students. Peter discussed how he had worked with other students on a regular basis while doing his masters and he felt that 'there was a collegiality there amongst the students that I don't have now and also amongst the staff, that I don't have now'. For him this collegiality had really helped in adapting to the expectations of doing postgraduate study. Similarly, Lin explained there being more of 'sense of community' in her previous studies and how she and her peers 'all studied together at the same library and would go out celebrating after we had submitted an assignment'.

Jana discussed how her interactions with the university were relatively limited in comparison to her previous studies:

I just come in when I have stuff to do, and I have a few friends in my department but they are not really close. I don't feel like I felt in my undergrad that I actually felt as a student and I used the student benefits, like I used the student discounts all the time and student cafe and student union.

For my participants not being able to find the peer community of support that they expected meant instead they drew on other networks. Peter discussed having a friend who was an academic and advised him on the 'pitfalls' of doing research and of conference attendance; and Nuala drew on the support of a group of academic colleagues in supporting her PhD study.

Various authors (Spaulding & Rockinson-Szapkiw, 2012; Zahl, 2015 and Sverdlik et al, 2018) have highlighted the benefits of peer groups in supporting PhD student progression. However, for my participants, these communities did not always exist and there was a need to adapt and to seek out broader networks of support that comprised of other PhD students, friends and colleagues that I will discuss in the next chapter.

5.5.3 *'I expected to be more supported by my supervisor'*

As discussed in chapter two, a range of studies have highlighted how the supervisor plays a crucial role in the development of the PhD student. Hunter & Devine (2016) argue that the supervisor provides a range of emotional support and encouragement, and this together with regular interaction with the student helps in encouraging persistence. Hopwood (2010) claims that supervisors play a prescribed role in shaping the PhD student to the disciplinary cultures and norms of academia. However, rather than it being viewed solely as a molar mechanism in the reproduction of academic practice, Done (2013) proposes that we should view the relationship instead as a 'supervisory assemblage'. Here students should be encouraged to explore the concept of knowledge more widely in 'free thinking ways'; she viewed her own supervisory relationship as being an assemblage that was rhizomatic, and that operated in 'a complex relational space where connections are continually made, but not fixed, in the knowledge seeking process' (p. ix).

While my participants generally felt supported by their supervisors, when they were asked about what expectations they might have had of their supervisors there was a distinction between those who had expected to be more autonomous in their research and those who expected their supervisors to provide more structured support and guidance. In this 'more autonomous' group my participants all spoke very positively about their supervisors. Julia explained that her supervisors 'were

great and supportive of my suggestions' about the direction of her research. Similarly, Greg felt well supported by his supervisors and that they were in regular contact. When I asked this group about what role they expected their supervisors to play these participants discussed how they imagined that they would provide guidance, but that these participants expected to be responsible for their research studies. Julia discussed having very 'firmly rooted expectations' of what her supervisors might provide:

With my supervisions I knew I was going to have to meet and present some writing and some ideas so like my previous university experiences...I arrange to meet them once a month to talk about through my data and stuff, but it's very autonomous.

In discussing her expectations of supervisory support, Julia also discussed how these were partly shaped by having begun an earlier English PhD programme that she withdrew from after a term:

I started it, did a little bit of reading and met my supervisor, but when it came to it, just reading and not doing any fieldwork didn't really appeal to me. However, this initial experience of the PhD was helpful in understanding that this was my project that I needed to defend.

She also explained how the connections that she had made in her earlier educational experiences had contributed to her understanding of the PhD and the role played by the supervisor. Greg discussed how he expected to be responsible for managing his research and his supervisory relationship:

I've always felt well supported. Well, I'm able to take advantage of it. I think people often complain about supervision. It's a two-way thing. I value what they're doing, but then I am getting a lot out of it and I'm putting a lot into it.

What was striking was that these participants had clearer expectations of their supervisors, what they might provide and how this impacted in shaping their positioning, and for Greg and Julia this was informed by having previously undertaken PhD study. Having this provided them with a 'well-defined status' (Deleuze & Guattari, 1987, p. 227) and an understanding of the requirements of PhD study. They saw themselves as in control of their research and discussed scheduling meetings and providing agendas and materials in advance for their supervisors to consider.

In comparison, Carlos, Lorna, Peter and Lin, while generally being positive about their supervisors and the support they provided, were 'more questioning' about their supervisors' availability or the emotional understanding that they would provide. While Carlos acknowledged that his supervisors were great people, for him the problem was that 'they are very hands off' and he didn't feel that they wanted to engage with him about his research on a regular basis and he had not expected that his PhD study would be like that. Lorna discussed how her supervisory relationship had remained 'really positive' and how they had been 'incredibly supportive', but how it had also become 'strained' as they were 'pushing her to finish' her PhD. When I asked her about what her expectations of her supervisors might have been, she responded:

I don't think I really had preconceived ideas about it, but I guess I expected a little bit... I expected some structured help and advice.

The literature (McAlpine et al, 2012 and Cotterall, 2013) highlights how PhD students can be challenged by their supervisors being intellectually and emotionally absent and unsupportive at times. Peter imagined that he would have a much closer relationship with his supervisors and while he discussed how helpful his supervisors were, he also talked about how his supervisions were not as good as

he thought they would be. Peter expected his supervisions to be more regular and that they would provide him with more practical help. When asked about what his expectations of his supervisors would be like he responded:

I thought that it would be a closer relationship... and I expected to be more supported by my supervisors. I felt as though I've been thrown in at the deep end and every now and again it's almost like, "Well, it's your work. Let it be what you want."

Through further questioning Peter elaborated on what he expected:

I had a sort of vision that I would be working with other PhD students in one room and that the supervisors would be in their offices close by. You might have a cup of coffee once a week, you might go out for a Christmas meal. Some supervisors do that with their students. Mine don't. I thought that there would be more of a doctoral community and did expect to be more supported by my supervisors.

Through reviewing how each participant discussed their expectations of PhD study, I began to identify that those who had done more research about the requirements of PhD study, through either discussing with others who had undertaken the qualification or through reading, were left with a clearer set of expectations about various aspects of the PhD including the supervisory relationship. Those participants I have described as 'more autonomous' each discussed having done some research about the PhD, and often had close relationships with others who had earlier undertaken the qualification. As Jana explained:

One of my closest friends when I was doing a MA was in the 3rd year of his PhD and we spoke about his PhD regularly as he does similar research. He was writing up and doing the last bits of analysis. So yeah, I was aware how on your own you are doing a PhD.

In contrast those who were 'more questioning' stated that they knew very little before starting the PhD. As Lorna discussed:

I knew little to nothing about it. All I knew was what a PhD was, you wrote a thesis about a piece of research that you had done and you had people to help you. That was pretty much to the extent that I knew about it.

Holbrook et al (2014) claim that there is often a 'mismatch' (p. 329) between the PhD students' expectations of the amount and type of supervision they expected and what they actually end-up receiving. While this was also the case for some of my participants, I would argue that those participants who were more informed about the nature of PhD study had clearer expectations of the supervisory support they might receive. Those less well-prepared struggled and expected more support, and there was more of a 'mismatch' between their expectations and their experiences with their supervisors. For these participants the molarity of their postgraduate taught experience informed their expectations of PhD study.

Deleuze & Guattari (1987) state that as a result of a process of molecular adaptation to molar systems our 'attitudes, perceptions, expectations' (p. 215) are shaped. For some of my participants, their expectations of PhD study were informed by previous educational experiences and there was an expectation that the two would be comparable. These participants also admitted to knowing little about the requirements of PhD study and as a result they were challenged by expectations that were at odds with their experiences. In contrast, other participants, through a variety of means, were more informed about what to expect in undertaking a PhD, and this resulted in them having a more autonomous approach.

Summary

Through the use of the molar line, the intention of this chapter was to examine how my participants were challenged by various aspects of their backgrounds that they brought to their PhD study. My findings confirm the literature that states the supportive role played by the family, however, I found this was a more nuanced support that provided my participants with the time and space to undertake their PhD research, with significant others taking on more of a share of domestic work. While well-developed professional experience could at times act as a barrier to the development of those participants who possessed it, it could also help with the process of adaptation. My findings have also highlighted the value of having informed expectations of PhD study as opposed to having assumptions based on previous postgraduate study, that for some of my participants were an unrealistic guide as to what to expect. Thus, the molar lines of family, work and education while acting as barriers in adjusting to PhD study, could also be supportive with the process of development.

In both how my participants were challenged and adapted, in this chapter there was a process of interconnection between their molar and molecular lines, and Merriman (2019) reminds us that these lines are not always in binary tension, but rather they function 'as overlapping tendencies or segmentations' (p. 65). By taking a focus on aspects of my participants backgrounds, this chapter has also helped to advance our understanding on how PhD students' 'past experiences of intention' influence their 'present intentions and aspirations' (McAlpine & Lucas, 2011, p. 695).

With a focus on family, work and educational experiences what my findings also highlight is a process of compartmentalisation and contrary to what other research has suggested my participants' development was less a case of balancing their

existing identities, and more about compartmentalising the different aspects of their lives. For those with professional experience it was compartmentalising this in relation to the PhD, and for those with a family it was compartmentalising this role from their PhD student development. Rozuel (2011) claims that compartmentalisation is 'a fact of life' (p. 696); it is necessary to be able to separate different aspects of our identities in order for us to help make sense of the world and to cope with the tension that results when the personal conflicts with the professional self. Given how rigidly molar lines position elements within highly organised and concrete spaces, it is unsurprising that for my participants compartmentalisation was a way of adapting to their own molar lines of family, work and the assumptions of PhD study that they had derived from previous educational experiences.

In chapter four I discussed how much research on the PhD student experience has focused on younger participants and how as a result I had recruited a range of ages in my sampling process to see if age plays a factor in PhD student development (Van der Haert et al, 2013). For those mature participants in my study with a family and professional experience, this chapter confirms the finding by Leonard et al (2006) that the PhD occupies a somewhat different place in their lives compared to those who are younger without this background. For these participants there was perception that the PhD was for younger students and they found it a challenge to fit into the academic environment. While for some of my younger participants they could be challenged by unrealistic expectations of PhD study as well as having less of a network of support to draw on. Nevertheless, regardless of age my participants were not always consistent in their responses and expectations, so not every individual with well-developed professional experience responded in the same way and those who were younger could have realistic expectations of PhD study. That said, some of my participants were more strongly challenged in their development.

For these participants there were rigid molar lines comprised of work and family commitments combined with assumptions about PhD study that made it more of a demanding experience, with the molar line exerting pressure for 'the preservation of a hard-segmented world' (Deleuze & Parnet, 2007, p. 124). For these participants, existing roles and expectations worked to keep them rigidly in place and made them more critical of their PhD study and slowed their ability to adjust. It is this process of adaptation that I will consider in the next chapter.

6.1 Introduction

Having considered in the previous chapter the molar lines that my participants brought to their PhD study, in this chapter I will explore how my participants adapted to the challenging nature of the qualification. Through using the concept of the molecular line to guide my analysis, I will explore the adaptations undertaken by my participants in this chapter and I will argue that these are part of an on-going, continuously emergent process of becoming.

6.2 Identifying molecular lines

As discussed in chapter three, Bacevic (2019) positions higher education as an assemblage with individuals needing to adapt to its requirements and similarly Taylor & Harris-Evans (2017) claim that the process of undergraduate transition is best understood as assemblage with students continuously adapting themselves to its structured nature. In the literature the PhD qualification is similarly structured with its stages of development, processes of socialisation, crossing of conceptual thresholds and work around identity development that all require student adaptation to ensure successful progression. As a result, the PhD qualification conforms to being a territorial assemblage with its structure and segmentarity. As discussed in chapter three, territorial assemblages are hierarchical and ordered arrangements that are 'segmented in a *linear* fashion, along a straight line or a number of straight lines' (Deleuze & Guattari, 1987, p. 209). In defining the concept of adaptability, Martin et al (2012) claim that people's lives are characterised by change and uncertainty that can involve major life events as well as everyday happenings. The ability to effectively react and respond in constructive ways to these situations is known as adaptability.

In relation to using the molecular line to explore my participants' experience of PhD study, I was looking for instances where they discussed the forms of challenge they faced, for example in the supervisory relationship or with their writing, and the processes they followed in adapting to these challenges, so I was looking for specific forms of data in their interviews where they discussed these processes of adaptation. As a way of sampling my data I focused on specific examples of adaptation that helped deal with the challenges that my participants found in their PhD study, namely adapting to the demands of academic writing; being a member of the academic community and sharing with others; and adapting the home as a place of study. I also took into account the forms of recognition that my participants received in relation to their PhD development and how these helped in the process of adaptation. I will begin by discussing how my participants adapted to the requirements of PhD writing.

6.3 Adapting to the requirements of PhD writing

As discussed in chapter two, the highly structured nature of academic writing means that the PhD student contends with the development of subject knowledge, understanding and working with the concept of theory and the challenge of the writing of research, together with cognitive shifts in their understanding that can result in a liminality before gaining insight with 'breakthrough moments' (Kiley, 2015, p. 53).

During the first interview my participants discussed a number of challenges that they faced in struggling with the structured nature of PhD writing. These included how academic writing contrasted with other forms of writing, how academic writing highlighted gaps in participants' knowledge and getting started in their writing.

For those participants who had not been in recent study, contrasts were made with writing undertaken in their professional life. Peter contrasted his ability to write professionally with the challenges he found in being able to write academically:

One of the real difficulties I've had is returning to academic writing. I found that a real challenge. Even though I've completed a masters, done written reports for Ofsted and written reports for government, I still find writing quite a challenge.

For others, the challenge of academic writing was exacerbated by feeling that there were gaps in their knowledge in relation to their research. As George explained:

I'm also pretty poor with the whole concept of methodology. In other words, I can write and I can draw out the sources, but I've got to remember to place the material into context and give it a meaning.

Lorna explained how her positioning coming into the PhD from another subject area had meant that she struggled with fitting into the writing conventions in this new discipline:

The problem is I'm a psychologist by background and my supervisors are anthropologists and sociologists, so they have their particular ways of thinking. And I've had to really change my way of writing and thinking about things to fit their understanding of the way things work.

Despite being an academic and having written conference papers based on her research, Gemma still found the process of writing a challenge. For her, writing support groups had provided a way to adapt and to develop her confidence, as she explained:

I basically started to try more social writing, like 'shut up and write', or writing meet ups with friends. So, forcing myself to write, especially in a social situation

where there are other people writing. That works really well for me. So, I'm cultivating those opportunities.

For Gemma writing with others provided a motivation in helping her produce her own work that confirms Lillis' (2001) point that while the process of research writing is often done in isolation it is still part of a social practice.

What these instances highlight is that just as the assemblage of PhD study can be highly structured, so too can individuals' own molar lines. This makes it more challenging to adapt, and this was particularly the case with the frustrations that Lorna and Nuala discussed. Lorna highlighted the opposition she felt in taking control of her PhD study:

So recently I keep being asked by my supervisors, "What's your story? What is your story? What's your thread? What story do you want to tell? You know, you need to own this." And I'm thinking, "I don't want to own this." For me, this is just a piece of research.

For Nuala the challenge of 'being stuck' (Kiley, 2015) in her writing was less to do with the challenge of crossing conceptual thresholds and more about wanting to get her writing perfect for her supervisors:

I'm probably a bit of a perfectionist. So, the writing piece, I'm afraid to start because I'm afraid of getting it wrong, despite having never had an experience where something was so wrong that it was catastrophic.

For Windsor (2015), while our molecular lines 'elasticize the rigid segmentarities that bind' (p. 162) they do not always enable change to take place. Instead in attempting to adapt we can revert back to our own recognisable molar lines with the result that becomings are not always realised. This was the case for Lorna and Nuala where there was a sense of opposing the molecular adaptations that they

needed to make and instead reacting to the molar structuring of their supervisory relationships. They both discussed how this manifested itself further through procrastinating around their writing and not being in contact with their supervisors.

As Lorna explained:

I go maybe two weeks or three weeks without doing anything. And just procrastination and then it would be like a week or two. "Oh my God, I have to do this at 12 every day." It is constant kind of thought, the whole procrastination thing.

In contrast to the struggles of some in adapting, other participants were more positive during their first interview and did not discuss struggling with having gaps in their knowledge, confidence issues or procrastination when they came to discuss their research writing. Julia discussed having written a chapter for a book with her previous supervisor, while Jana had recently had an academic journal article published with her supervisor that drew on her research study and was possible due to her immigration policy work. Both Julia and Jana explained that their PhD studies were extending on the work that they had begun at postgraduate level and this combined with the academic connections they drew on in publishing their research, made a difference in how they positioned themselves in relation to their academic writing and how they both felt like 'experts' in their fields, given their previous research.

Despite this supposed expertise, Julia stated that there were still frustrations for her and provided the below figure 4 to illustrate this:



Figure 4: Julia: 'a massive blur'

In the previous chapter I discussed how tidy Julia's desk was in the image she provided, and she discussed her neat piles of planners and notebooks in one part of the photo. In contrast, the above part of the same image with the scribbled over computer screen is markedly different to the neat desk and shows the 'messy' reality of her relationship with her academic writing:

I coloured my PC screen red, initially just because I was like, "Well, I'll hide what I'm writing about," but then it also was like "Actually, no I'm going to really colour it out because sometimes I feel so frustrated sitting at this desk, getting nowhere with my writing that the screen just becomes a massive blur anyway. So, it seemed quite metaphorical of sometimes my feelings towards sitting there trying to get through part of my lit review or transcribing something.

Nevertheless, in comparison to my other participants, for Julia and Jana there was a sense of drawing on their existing networks of academic support that meant their adaptation to academic writing was less of a challenge. For Deleuze & Guattari (1987) there are binary machines of classification that operate within society and

by Julia and Jana drawing on their existing connections they came to their PhD with a more 'well-defined status' (ibid, p. 227). Given that both Julia and Jana discussed wanting to have future academic careers, this development of academic networks of support is an obvious next step in adaptation and is in contrast to those of my participants who discussed forms of resisting connections either through 'hiding' or procrastinating. As will be discussed later in the chapter, in contrast Julia and Jana both sought out the development of new academic connections with Julia being asked to teach for her department on a regular basis and Jana being invited to discuss her research at a range of conferences and May (2005) states that molecular lines operate through 'seeking new possibilities' (p. 149) and both Julia and Jana were effective in undertaking this work.

When I interviewed my participants again six months later, some of them had also provided accounts where they had sought out these 'new possibilities' in relation to their PhD writing that had aided their adaptation. Despite Peter's concerns about his academic writing in his first interview, during his second interview he recounted how he had been in contact with a research journal with an article he had written based on a findings chapter. The journal had accepted the article he had written, and this had left him feeling 'euphoric' as had the way his supervisors had provided constructive feedback on one of his chapters. For Cotterall (2011) the process of writing and getting feedback are key for the PhD student to establish and test how well they are progressing. Nevertheless, Peter discussed how talking about his research continued to be 'more comfortable' and for him producing academic writing was an on-going process for which he was reliant on his supervisors for guidance, as he explained:

The writing up of my research has been much more problematic because I've sort of mixed-up loads of things and my supervisors have been helpful in trying

to disentangle some bits and say, "Well, that's your results, but that's your analysis. You've got the two muddled up.

By the time of their second interviews various participants had begun to attach more positive values to the process of writing and getting feedback from supervisors. Despite Carlos stating he did not want to pursue a career in academia, he still perceived value in developing this aspect of the researcher identity and began to make contact with publishers and he discussed feeling 'proud' to have had a paper accepted in a journal and was looking to do more of this:

I want to write a couple of papers that I want to publish eventually because at the end of the day that's the currency exchange for me and my supervisors.

Nuala discussed being concerned about wanted to get her writing 'perfect' in her first interview and how this meant getting feedback was difficult. By the time of her second interview, while still acknowledging this challenge, she discussed the value of the feedback in enabling her to progress and as a result was in more regular contact with her supervisors:

So, I have a much clearer sense of where it's going, and I know what's in every chapter. That shift was quite quick where I went from having no idea where I was going to being quite clear on it.

By the time I interviewed Lorna and Jana again they were both in the writing-up stage of their PhD study and this final phase appeared to work as a transformational moment in focusing both participants. After discussing how 'passive' she had been in her PhD study, in these final stages of her PhD Lorna discussed having taken more control of her writing and was no longer 'hiding' from her supervisors or procrastinating:

I have been going back and forwards with my chapters really quite quickly, just taking a couple of days to revise things. I have my fourth chapter and one of my supervisors last month said, “Why have you looked at them together? Why have you not looked at them separately? Maybe you should do some analysis here or there?” And I just replied, “I’m not at a point where I’m doing any more analysis. This is the chapter and I’m done with it.”

In taking this control Lorna provided the below figure 5 of her desk with a note on her computer screen stating how at this stage her research does not ‘need to be perfect just good enough’. When asked about this Lorna discussed how after a challenging PhD experience and despite her perfectionism, at this stage it was now about ‘reminding myself that it is not about perfection, but literally just doing enough to a pass and move on’.

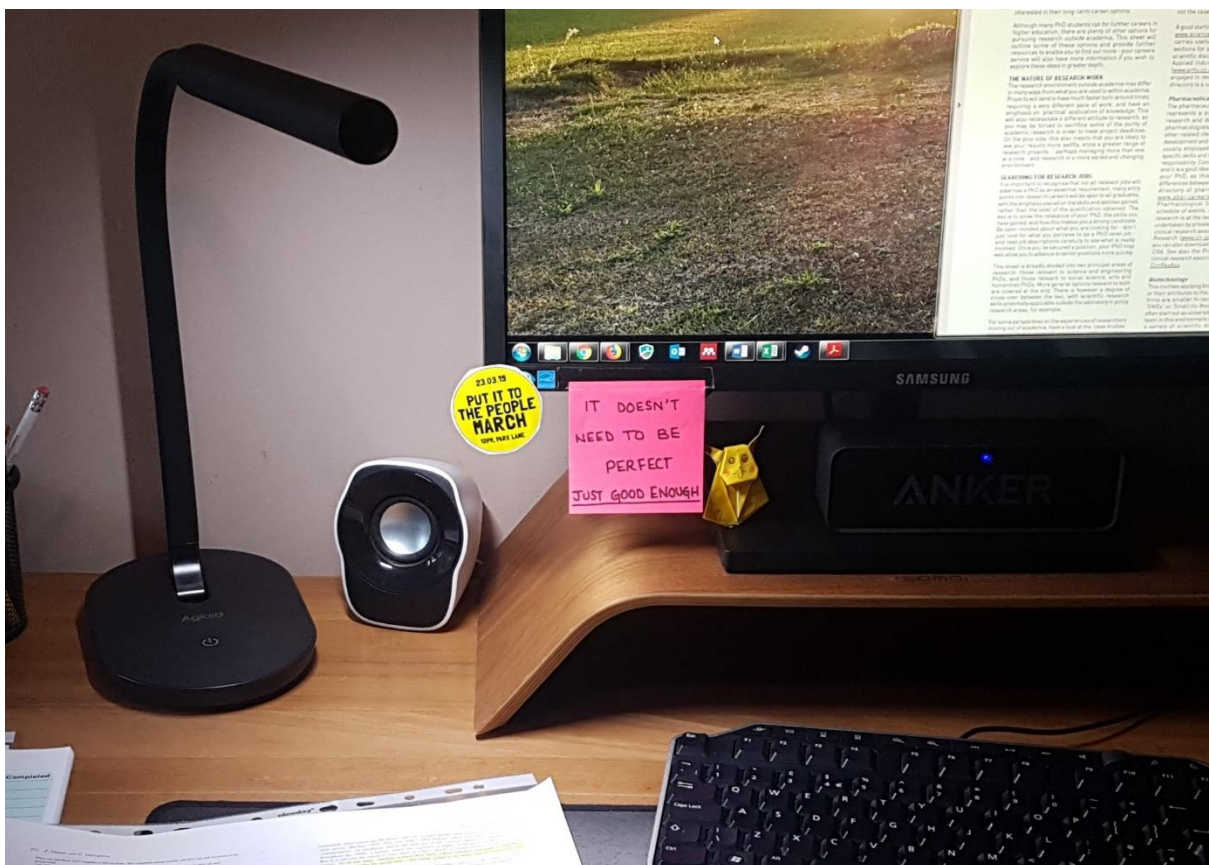


Figure 5: Lorna: ‘Just good enough’

Similarly, Jana also had a changed perception of her PhD from thinking that her research had to be perfect to accepting that it just needed to be done:

At the end of the day my PhD it will never be like perfect. It will never be good enough. I already imagine printing off the whole thing and discovering typos and being angry about it. So, at the end of the day, I just say, "Okay, I'm not going to read it anymore. I'm just going to submit it."

For both Lorna and Jana, the last stages of the PhD study provided them with motivation around their development and the need to operate as an autonomous researcher and Petre & Rugg (2010) note how deadlines are helpful in providing PhD students with an incentive in progressing their research. In relation to transformational moments in academic writing, Keefer (2015) argues that when these shifts occur the PhD student recognises that they are no longer the same person who started the qualification and that a threshold has been crossed and one's positioning has shifted.

Ben also discussed having a transformational moment in structuring his PhD writing and an acceptance of what was required:

I think actually halfway through last year it clicked, and I really felt that I had understood that going through the PhD was a process that couldn't be cheated, that I needed to just impose a rigorous structure on chapters which ticks the boxes, satisfies the examiners and gets me a PhD.

However, this was tempered with a sense of opposition to this realisation and how he needed to position himself as a PhD student in comparison to how he might have written in the past:

And it is not – emphatically not – how I like writing or how I have written in the past. And I think it just took me a long time to sort of accept that structure, and

my supervisor has been great at patiently reinforcing that for me. I felt like that was a great milestone in my own understanding of how I needed to complete this.

In summary, for my participants there were a series of adaptations to their molecular lines between their first and second interviews in relation to the structured nature of PhD writing. There were notable points of molecular connection such as getting positive feedback, having an article accepted or having the focus needed for the writing-up stage. These adaptations meant that my participants took more ownership of their writing and the need to operate as an autonomous researcher. Here students experienced a greater understanding of their research and its underpinning concepts, as well as a deeper appreciation of the language of the discipline and of the research process. Despite these transformations, there were nevertheless challenges at times when the requirements of PhD student development conflicted with other aspects of their lives and the crossings of conceptual thresholds were not always complete.

Having considered how my participants responded to the structured nature of PhD writing and through using the molecular line as a lens with which to explore, we can see that they were all capable of adapting. However, as assemblages, some participants were more molecular and self-organised and by seeking out new opportunities and connections they embraced the notion of a perpetually changing assemblage. For Surin (2010) the 'molecular logic of production is basically self-organising' (p. 162) while for those who were more molar there was a dependence on centralised, rigid and hierarchical structures and feedback from the supervisor.

6.4 Adapting to the academic community

While a marker of PhD student development, Xu & Grant (2020) note how PhD writing is also a social space that embraces a wide range of interactions that include

responding to feedback, interacting with peers and attending conferences. In chapter three I examined how Deleuze & Guattari (1987) use the concept of the rhizome to describe a complex of relationships which connects intensities but has no hierarchy or centre and which is perpetually changing (constructing, deconstructing, and reconstructing) and re-emerging in response to external and internal stimuli. In this section I will examine how for my participants, conference attendance, teaching and interactions in the academic community worked as forms of rhizomatic connection in aiding their molecular adaptation and how adapting to one aspect of PhD study could still mean an inability to adapt in other areas.

a) Conference attendance

Carroll et al (2010) state that academic conferences can provide PhD students with opportunities for learning, networking and support from colleagues and mentors. A number of my participants discussed the benefit they derived from attending and contributing to conferences and how this played a molecular role in aiding how these individuals adapted to one aspect of the PhD student development. However, just as with PhD writing, conference attendance and the presentation of research can be a rigid process with hierarchical structures that require participants to have an understanding of tacit rules and the ability to be able to 'work' the conference process (Petre & Rugg, 2010, p. 186).

While much of Peter's first interview dwelt on the challenges that he faced in his PhD study, in his second interview he discussed how much more settled he felt in his studies partly through having a journal article accepted and through being accepted to present a paper about his research at a conference:

I was asked to go and present at a conference in Italy with my research in the summer. I submitted a paper and I was surprised to be selected. I was the only English academic that went to that. It was brilliant. It was fantastic. Anyway, as

a result of that, I really enjoyed it and I felt emotionally it was great, it was rewarding.

For Peter his article, conference attendance and positive supervisor feedback worked as forms recognition of his adjustment to his PhD study. Nye et al (2013) point out that simple encouragement and recognition, such as those experienced by Peter, can strengthen students' belief that they can persevere through the PhD challenges. When I asked him, in his second interview, to discuss the difference these things made to how he viewed his research he explained how in comparison to his first interview he now felt he was 'back on track'. In his first interview he had described issues that he had experienced with fitting into the requirements of PhD study and having to compartmentalise his professional status; this meant he sometimes felt the experience was too 'difficult' so that at times he felt like giving up. In contrast and following having a journal article accepted and giving a conference presentation, he felt more settled in his PhD study and he provided the below figure 6.



Figure 6: Peter: 'back on track'

This is a more hopeful image in contrast to figure 1 that he provided in the previous chapter and the negativity that he felt in relation to the university and their lack of PhD support:

It's the notion of being back on track and I took it in the summer after I came back from a supervision meeting that I'd had with my second supervisor and she was very positive about my fieldwork. I hate this word 'journey.' You know, everybody talks about the journey they're on. Do you ever get to your destination? I don't think you do, but I suppose what I feel now has elements of 'Well, I'm back on track and I kind of have a direction of travel.'

In his first interview Carlos discussed how challenging he had found PhD study particularly in relation to his supervisory relationship. By his second interview he discussed having made progress in his research writing and how he had had a paper accepted for a conference and this had impacted on how he now viewed his PhD study: 'I presented my paper and it was great and I just got the news that it won this award as the best paper of the conference in my field'. This combined with progress in his writing had left him feeling: 'very positive emotionally in terms of my PhD and its development'. Despite this progress that resulted from adapting his research writing for a wider academic audience, he still remained challenged by his supervisory relationship: 'I guess now the challenge for me will be how to translate all this success back in London and sell this to my supervisors'.

Gemma contrasted how challenged she felt in developing her research with the confidence she felt in delivering this work at conferences and the fact that she likes 'giving papers', as she explained:

That bit I'm good at, that bit I can do and I'm going to get myself out there and be like, "I'm doing a PhD." I suppose if I don't say it, no one else is going to.

She also explained the role that conference attendance played in her ongoing adaptation and how she presented herself in the academic community:

At the last conference I said I was MPhil student and I heard someone before me say that they were a PhD candidate, so I quickly changed it – I'm a PhD candidate. Learning that vocab is like really interesting, but the two people that organised the panel I spoke on, one of them already had a PhD but the other one's in her final year and she said to me, "Wow, it's really good that you're going to a conference in your first year because I'm in my last year and I'm only just going to conferences."

Gemma discussed the benefit that she felt from receiving positive feedback and how this one aspect helped in her adaptation to PhD study. Despite this, in her second interview she contrasted her ability to communicate in this setting with her continued struggles in sounding 'suitably academic' in her research writing and with her supervisors. Just as with Peter and Carlos, who felt that they gained from their conference work, despite the issues they faced in adapting to other aspects, this was also the case for Gemma. This ability to adapt to one aspect highlights how uneven my participants' adaptation to the requirements of PhD study could be. For Gemma this resulted in her still feeling as if 'I'm not on the same planet as my supervisors' by discussing her research in a way that only she understands, but how even here she has started to adapt by changing how she communicates about her work:

I will insist in speaking my language and then looking at them and I can see I'm like "Okay, they don't understand what I'm saying." But I know we can communicate, so then I think, "Okay, stop being stubborn. Get into the groove of what's being said here and stop feeling nervous and just speak this language because you probably can do it." That has worked

As well as providing a space in which my participants could get feedback on their developing research, the conference setting also enabled them to network with others in their fields of study. Nuala discussed the boost in confidence that she received from her network of work colleagues from giving a conference paper:

I had a conference in August where I met up with the same people that I had been with on another project. That for me was a bit of a boost in that I felt for the first time that I belonged as a researcher. I wouldn't say I was on a par with them because some of them are very experienced researchers and very well respected, but I felt that I wasn't completely out of my depth. So, I think there's been a shift in terms of my own confidence in myself. Still have massive imposter syndrome, but definitely I think there's been a shift.

Despite recognising the benefit of conference attendance, for Ben with family and work commitments, there was a need to balance the time commitment with the value he got out of attending a conference:

Again, just because of time constraints and the other things that I've got going on, I can't really be going to conferences, at the moment. I've been to a number of conferences and sometimes there are real nuggets of interest there and I come back enlightened, but I've not had a great experience as an attendee of conferences in terms of what I've got out of it and the time I've put in.

That said, he appreciated that as a result of not attending conferences his adaptation in becoming a PhD student was compromised in comparison to others as 'I've certainly not laid a lot of that groundwork which I see others doing'.

Fakunle et al (2019) discuss how conferences provide a site for networking as much as for PhD students' learning and academic development. For my participants conferences offered them the opportunity to learn through sharing their research, getting feedback from academics and networking that all proved useful in aiding

their development. Conference attendance provided opportunities for my participants to network for information and communicate with broader audiences other than in their department and with their supervisors and as such it provided them with a rhizomatic network of connections from which they benefitted. For instance, following his conference talk Peter was invited back to give a second conference paper as well as to publish his initial presentation. While both Gemma and Carlos discussed how helpful they had found the conference feedback that they received and as a result had made changes to aspects of their research work. Biggs et al (2015) note that for those assemblages that are highly connected through rhizomatic connections, like those found by my participants in conference settings, they are more adaptable and these types of connections that provide feedback are features of molecular assemblages.

b) Teaching

Mantai (2017) argues that teaching plays a role for PhD students in enabling them to 'feel like a researcher' and for Walker & Yoon (2017) having this experience can aid future employment opportunities. Just as with PhD writing and presenting at academic conferences, Kálmán et al (2019) highlight the structured nature of teaching in the university setting with its emphasis on student-centred approaches that includes attention to the individual needs of students with learning outcomes and the acquisition of skills. For those wanting to undertake teaching in higher education there is a need for training and support and as Hicks et al (2010) discuss, an ongoing demand for professional development. Along with having to adapt to this, Knight & Trowler (2000) claim that there is a need for teaching staff to be able to align themselves with the professional culture within a university department and for those of my participants that wanted a future career as an academic there was a requirement to adapt to these forms of structuring.

Julia, Lin and Greg discussed wanting to be academics when they completed their PhD study with teaching playing a role in enabling them to become a more recognised 'face' within their departments. Julia stated the value of this for her meant 'I'm more acquainted with all the staff. I feel a bit more like an academic and less of a student'. She went on to stress the intrinsic value this had for her in validating her knowledge and positioning as a developing PhD student. It also helped in creating a sense of belonging for her:

For me teaching undergraduates is really important. I think when they're looking to you as a voice of expertise in these areas, which sometimes we do ourselves a disservice. We are becoming experts in these areas. They're moments of validation too because you're like, "Oh, here's this wide eyed 19 year-old who is looking to me to help them in this particular essay that they're writing on, and yes I can help them. Yes, I do know this. Yes, this is something I've worked on for many years. I know all about it." So, there are moments of validation where you're like, 'I belong in this institution. I am becoming a voice of understanding in these fields.'

Julia derived a real benefit from her teaching role, with the recognition that she received from this in aiding her adaptation to the academic environment.

Similarly, Lin combined her PhD study with teaching, and she saw the benefit of doing this for her future career plans: 'I'm starting to see this future self, that I'm going to work as a researcher, as a lecturer in the university, just doing research and teaching. I like teaching'. While Greg enjoyed combining teaching work with his research, he also discussed how challenging it could be in attempting to do this:

I couldn't spend half the day teaching one subject and then coming and studying something totally different. I was finding the brain shift just exhausting. I couldn't do that, so in May I completely finished all of that which was a huge relief.

In contrast Carlos felt that undertaking teaching as a PhD student was only important if you were planning to have an academic career and since he wasn't going to, he had deliberately avoided this:

I'm not giving lectures as well, it's important to say. I'm not a teaching assistant.

No. As I told you, I don't want to stay in academia so that sort of experience, I didn't see it like very important for me.

Sverdlik et al (2018) state that it is important for PhD student development to become aware of their place within their department and institution and for some of my participants, teaching provided one way of doing this. Despite this value, Jones (2013) highlights how little support is provided for those undertaking teaching and it also means that time is taken away from PhD study. Jepsen et al (2012) state that despite the value that individuals might derive from teaching, the importance of teaching is ambiguous in institutions. However, for Julia, Lin and Greg, teaching provided them with one way in which they could adapt in response to the expectations of PhD study. Guerin (2013) proposes that academia should be viewed as rhizomatic research culture and to be successful PhD students need to seek out opportunities for connections in order to test out their developing researcher identities. Despite the additional work and challenges in shifting from teaching to research as Greg discussed, teaching provided some of my participants with the opportunities to network with wider audiences, to be open to new knowledge and to be flexible and these for Guerin (2013) are all feature of a research culture that is rhizomatic.

c) The value of sharing with others in helping to adapt

In chapter two the value of social networks in supporting the isolation of those undertaking PhD study was discussed (Janta et al, 2014 and Skakni, 2018).

However, as Mantai (2017) states we know little about the role that these networks might play in aiding the development of the PhD student.

As previously discussed, Julia came to the PhD as well positioned with a network of existing connections that she could draw on. Nevertheless, she also talked about struggling to take control of her research and being unsure about her work. In response to this she discussed the value for her of 'seeking out informal groups of people...to just talk through your work' and to use this space as a 'soundboard' in providing feedback. Rather than relying on others to create a group, Julia discussed being instrumental in forming a network of peers in her own department:

I ran a reading group and the first half of the reading group was this academic stuff we had to go through, but then we used the second half to share our research and I think it was just so helpful to just have eyes on it. You could try and show a whole presentation, or just show a clip, in an environment that is non-judgmental.

Various authors (Kemp et al, 2013 and Janta et al, 2014) have pointed out the value of these types of social networks and unlike the supervisory relationship, for Julia this network provided a space in which to discuss evolving research ideas without being judged.

In contrast to the literature, which suggests PhD students often draw on a network of peer support, for my participants, their social networks of support could be made up of students outside of their immediate research environment as well as from individuals in their work environment. As a part-time PhD student, Nuala discussed how challenging constructing student networks of support could be and instead her work colleagues provided an informal network of support:

With my colleagues on an informal basis, I have some support as well as within my immediate team. We're all, I suppose, at different stages of our own studies, and there's definitely an identity there and there's a support mechanism there.

Carlos recounted how he had initially attempted to seek support from his peer group when he was struggling but having realised that others did not have the same concerns, he did not feel comfortable in raising the issue again: 'I mean, they are truly researchers and they have a lot of experience that I didn't have and it made things worse'. Instead, he began to develop a supportive peer network with a range of PhD students outside of his department:

I have a lot of contact with PhD students from other departments. And that turned out to be healthier for me. I prefer to talk with a guy doing physics, doing art, stuff like that than someone doing policy research. It feels more comfortable.

Mantai (2017) states that peer support is a primary network of support that PhD students draw on, whereas for my participants their social networks were more diverse in their composition and these were both physical and virtual networks of support. In terms of physical networks of support these included academic mentors, work colleagues and friends. Both Julia and Jana discussed ongoing support provided by academics who had supervised their postgraduate dissertations and how these individuals played a mentorship role in shaping their PhD work. Lorna discussed how a former work colleague was a source of support and for Gemma it was a manager from her first teaching job. For my participants friends also provided them with advice and an opportunity to be able to discuss their PhD work. Prior to starting the qualification, Jana discussed knowing PhD students who were doing similar research and how helpful this was in informing her about what the experience might be like and how 'not all the time you have contact with too many people'.

Peter had a friend who was completing a PhD and was able to recommend things that he should be doing:

This friend of mine suggested that I submit a conference paper. I used to meet him once a term when he was still doing his PhD and he said “Maybe you should put in for a conference. It might help you to write a chapter”. So, his tips, his advice, have been really helpful.

While friends could be a supportive, they could also be critical with some of my participants about their choice of doing PhD study. In discussing his friends' view of his PhD, George stated 'I think they regard me as a complete oddity, and they wonder why I'm doing it'. While having some friends who were supportive in providing the motivation to keep going in his PhD work, Ben also discussed other friends 'who are quite baffled by it really, by my decision to load myself up with this work in addition to the other things I do'. While friends can be helpful especially when PhD study is going well, perhaps unsurprising Volkert et al (2018) note that support from friends can decline when individuals talk more about the stress involved in undertaking the qualification.

My participants also discussed their use of social media as a network of virtual support. Several of them discussed how they had read blogs, websites offering PhD support and used social media channels to discuss the challenges of PhD study as forms of support. Nuala discussed how useful she found reading blogs that offered advice on PhD study, Carlos set up a WhatsApp group with the PhD students who he had most contact with and Lin had a WeChat group that she used to remain in contact especially when she was finding it difficult to write:

I use a social networking app called WeChat and when I'm having difficulty in writing or just to sustain my motivation, at those times I chat with my friends and

family for five minutes. Then I come back to the paragraph and things seem less lonely. So, I think this is a quick way to distract myself.

Bennett & Folley (2014) claim that social media tools such as blogs and Twitter provide access to a community of PhD students and knowledgeable others 'that reduce isolation and provide challenge and support along the challenging journey of undertaking PhD study' (p. 1). Lin noted how helpful and immediate she found the support that social media provided and her WeChat group with other PhD students in China was a place where challenges could be discussed, and support could be provided.

Minocha & Petre (2012) suggest that social media, especially Twitter, can be used to encourage the development of interactive academic networks and help to establish social relations with relevant people beyond the supervisors. It can be used to share knowledge and expertise with others and to find colleagues and organisations with similar interests. In his PhD blog, Reardon (2019) notes the benefits of social media to the PhD student and how it enables connections and communities with others and how there has been a growth in academic hashtags such as #phdchat, #gradschool, #academicchatter and these provide an opportunity for PhD students to communicate with broad audiences while building an interest in their research work. Julia discussed being on Twitter where she followed others doing PhD study as well as posting about her experience. For Goulay & Martin (2013) digital networks are a developing feature of the identity work of PhD students and Esposito et al (2013) draw attention to the way that social media tools are entangled in specific PhD journeys. However, much is dependent on PhD students' digital confidence and skills (Henderson et al, 2015) with face-to-face networks and communications being perceived as having more value.

Mantai (2017) states that we know little about how social networks may play a role in acknowledging the development of the PhD student as a researcher and my findings have provided an insight into the diversity of these social networks and how they played a part in recognising my participant's adaptation and development. The various forms of social networks that my participants drew on all worked as forms of molecular connectivity in countering the isolation of PhD study. Colman (2010) notes that assemblages that are predominantly molecular have rhizomic connectivity and for my participants these connections provided opportunities to discuss with others their research and concerns about their development as PhD students.

6.5 Adapting the home as a space of study

In this next section I will explore how a process of adaptation took place for my participants in relation to their spaces of PhD study and how this related primarily to the home. Various authors (Giddens, 1981, 1984 and Lefebvre, 1991) claim that space is a relational property of actors and that it works to structure social relations and Dowling & Mantai (2017) claim that researcher identities and identifications are spatial and that they draw on and reconstitute imaginaries and materialities of place.

When asked to discuss their sites of PhD study, ten of my eleven participants stated that they primarily worked at home and in doing so they needed to create spaces to enable this to happen and only Carlos choose to work in one of Central University's libraries on a consistent basis and he provided figure 7 below of this workspace:

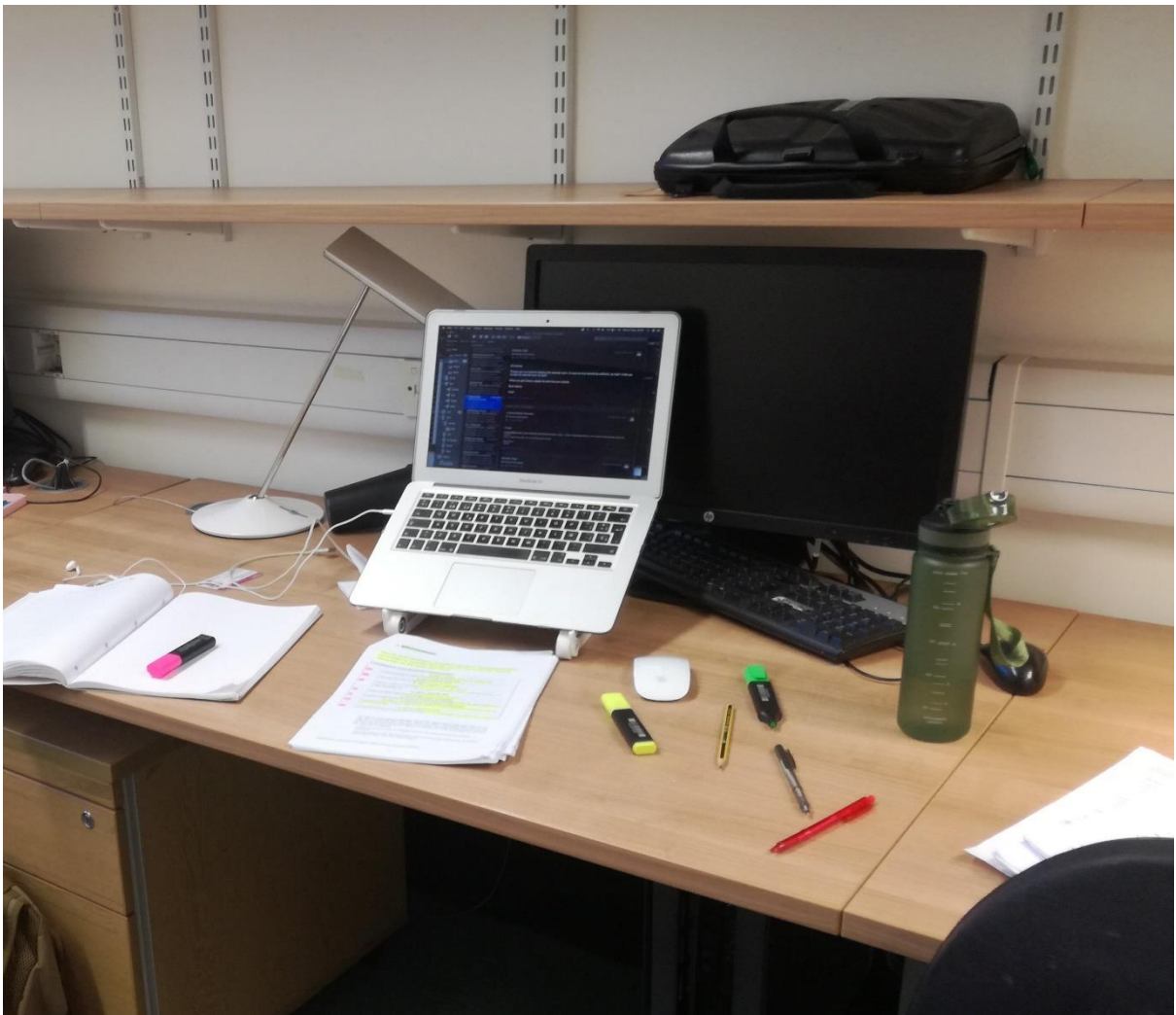


Figure 7: Carlos: 'The place where I'm currently working'

Carlos discussed how he preferred not to work at home on his PhD as there were too many distractions in his shared house and instead his 'office' was in the library in preference to his department:

Well, I've been working in this 'office' for the last two years, but this is not my department. This is just an open space in the library. I work here because my department is quite small and there are a lot of people, so usually it's crowded there. I tried really hard to work there the first year of my PhD, but I found it extremely difficult in terms of getting a focus on my things. But there were always a lot of people there. They were just calling me, "Hey, let's go for lunch. Let's go for dinner. Let's go for drink." It was more like a social setting.

So, I struggled a lot and that is why I told myself, “No, I need somewhere, another place to work alone and just focus on my things” and that is why I chose this place.

Carlos had an ambivalent relationship with his department and his peer PhD students, and the library appeared to provide him with a quiet, anonymous space away from others that enabled him to be physically present in the university while still maintaining his PhD student development (Temple, 2018).

Some of my participants discussed how at the outset of their PhD study they assumed that the university would provide them with a defined workspace, as Peter explained:

I was under the impression that I was going to get a space. Well, a sort of shared space, a bit like a space in a room which would be for PhD students perhaps aligned with a supervisor or so on. That was the experience that somebody had told me about that they had at another university. And although nobody actually specifically said that was my entitlement, I was expecting it.

Julia also expected to have her own workspace at her institution and this expectation was informed by knowing other PhD students in different universities that had this arrangement. Ben discussed how there had been lots of ‘really nice places to work’ in the university where he had completed his postgraduate qualification and he had imagined that he would be able to find similar spaces for his PhD study.

As a result of not having these assumptions of workspaces fulfilled, there was a sense of my participants needing to adapt to what was institutionally provided and then to decide on the spaces that would work best for them in undertaking their PhD work. They discussed how this could be an unexpectedly challenging process. As Peter explained:

I found it really difficult to find a space to work. I didn't find it and I found it really quite difficult coming here to find a space. All the spaces were taken with potted plants on them, all that kind of stuff. I just didn't find it very welcoming, and do you know what? I nearly gave up.

Dowling & Mantai (2017) note how having dedicated workspaces within the university environment elevates the status of the PhD student to a researcher as opposed to being a student. They claim that power relations are also played out through the university environment that heightens the identifications of PhD students as emerging academics. In contrast, the physical placement of PhD students in non-descript offices away from their department can also be seen as reflective of a diminished importance and a sense that they were not real researchers.

Julia and Lin both discussed how these community workspaces could also be 'hostile', as Julia explained:

We're all in a room but there's no community in that. You don't know who's going to be there. Everyone leaves their stuff and it's really irritating. You don't feel like you're fully welcome.

Despite this hostility both Julia and Lin discussed valuing working in the university setting and, as we saw in chapter five, some of my participants expected there to have been more opportunities for this to happen. Dowling & Mantai (2017) note the key role that these university workspaces play in supporting the researcher as it lessens their feelings of guilt during unproductive PhD periods and serves as an accountability mechanism.

For the participants who had assumed they would have an institutional workspace and had actively sought it out, there was then a need to adapt, combining limited

amounts of research in the university with working at home. This meant creating a workspace and adapting to spending more time doing research at home.

In contrast to these participants who actively sought out workspace in the university, other participants preferred working at home and for Dowling & Mantai (2017) home is the most significant off-campus site of PhD study. As Greg explained:

While at the university there are some great facilities around and there's some good rooms where I can sit with other PhD students, but we end up chatting. I end up buying snacks for silly prices and I have two hours of commuting.

Greg discussed how he had needed to adjust to home working for his PhD after working in an office during his career and considered his kitchen to be his office, as he illustrated by providing figure 8 below:



Figure 8: Greg: 'my kitchen table'

This is a photo taken from where I'm sitting at my kitchen table at home because that sums up the vast majority of my PhD experience.

Greg discussed how he did not have a dedicated space for PhD study at home and as a result he ended up working in his kitchen and how study also needed to be fitted into his other family commitments that included childcare and housework. While Burford & Hook (2019) highlight the advantages of home working for PhD study, they also discuss how research work then needs to be interwoven with other aspects of students' lives including parental care-work. For Greg after the school run, he worked on his research until the school pick-up and after-school activities, then undertook housekeeping tasks then went back to study later in the evening. Dowling & Mantai (2017) claim that the home in PhD study is a complex location, offering opportunities for silence and solitude for some students as well as potential disruptions – particularly for students such as Greg who managed childcare responsibilities.

As discussed in chapter three, Deleuze & Guattari (1987) use the metaphor of the house and its assigned layout to discuss a territorial assemblage and for my participants undertaking PhD study at home they needed to adapt their living spaces by reassigning rooms such as the kitchen to research work. However, Nuala discussed how challenging both spatially and physically it could be in creating these spaces of PhD study in the home and she provided figure 9 below:



Figure 9: Nuala: 'This is the table in the kitchen'

Nuala discussed how her data analysis required more room and the kitchen table was the only space in the home where she could do this.

This is the table in the kitchen where I do my PhD and I've got space here and that's all my data sitting in a pile there in the corner.

However, as a result of making this adaptation and working on the kitchen table she explained that 'we haven't really had an awful lot of family meals for the last few months'.

In the top left of the photo, we can see another impact of working in the home on PhD study with back supports and posture bands. After being asked about these Nuala explained that as a result of working at the kitchen table with a laptop, she

had tennis elbow in both elbows and her posture had deteriorated and she was trying to use the bands to improve things.

For some of my participants, such as Lorna, working at home is what they preferred:

I'll be really honest; I've never ever been the type of person that feels like they need a connection to a certain place or a setting. It's not just with PhD, I'm like that in my work as well and don't really like... my colleagues are my colleagues and I don't really feel the need to meet up for the social events or any of that... So, I've never felt that need to build a connection with the university really.

Jana also felt this way and despite this meaning that she was less connected to the department and her peer group, working at home meant she did not have to spend money travelling to Central University that involved a long and expensive commute.

Just as with the other instances in this chapter, for some of my participants it was more of a challenge to adapt to working at home especially if they attributed meaning to having a workspace in the university. Temple (2018) discusses how for students the university space has a meaning that should not be undervalued and plays a role in supporting 'its users' senses of identity' (p. 136). As discussed in chapter three, Deleuze & Guattari (1987) distinguish between two types of space, logos and nomos, with the first being more molar and the second more molecular in its structuring. For some of my participants not having a university-based workspace was an issue, while for others there was a preference to work at home on their PhD study. Either way, there was a need to set-up a workspace at home that conformed to the idea of this space being a nomos created away from the logos of the university environment. In doing this some of my participants discussed the benefits that they derived such as not having to fight for a workspace in the university or having to pay to travel to university to do this. While beneficial at times, what I identified from this predominant focus on working from home was that this

resulted in a limited interaction with the university setting for my participants, and that meant a reduced connectivity with others and limited opportunities in building social relations. For Deleuze & Guattari (1987) these types of connectivity are a feature of molecular assemblages, and this seems to run counter to nomos that stresses the molecular in creating spaces away from the logos with its rigid structuring.

6.6 How forms of recognising PhD student development aid the process of adaptation.

The literature (for example, Cotterall, 2011; Mantai, 2017 and Lesham, 2020) states that recognition of PhD student development plays a crucial role and can mediate the effects of liminality and that there is a need for an individuals' progression to be recognised as a way of linking them with the community they seek to join. However, while acknowledging the need for this, the literature has also foregrounded how it often rests solely with the supervisor to provide this recognition of development (Lesham, 2020). My findings confirmed that while the supervisor was an important source of recognition, there were also a range of individuals involved in doing this work.

My participants discussed how they were the recipients of various forms of positive feedback that acted for them as forms of recognition of their development. Despite the challenges that he detailed in his first interview Peter also explained how a positive poster presentation had been helpful. Not being 'very good at technology', he had spent time designing it to ensure that it captured his developing research ideas and as a result:

I got some good feedback when I displayed it and some academics came by and stopped and asked me things about it, as did other doctoral students. I actually felt quite good about it because it was something tangible that I'd achieved'.

In chapter five I detailed how families and significant others acknowledged the need to provide space and time to enable my participants to work on their research and how this recognition was essential in enabling their progression. While not providing forms of feedback on their research, these significant others did provide forms of encouragement, as Nuala explained about her husband:

He's been really, really supportive and a few times where I've had wobbles and said, "I can't do this," he's kind of said, "You're doing fine and you're going to see it out now."

This recognition of development by significant others was expressed by several of my participants and it played a fundamental role in helping with supporting their progression as Peter explained:

My partner's been very helpful because she's kept me going and a couple of crucial times she's said, "For goodness' sake, you're doing alright. Keep on with it." And now I'm seeing some of the fruits of my labour. The conferences I'm going to and the presentations I'm doing, that sustains me.

In chapter six Julia discussed the positive feedback that she had received from the undergraduate students she had taught and how this had provided her with 'moments of validation' in 'becoming a voice of understanding' and how her recognised expertise had resulted in the Programme Director asking her to undertake more teaching. She also detailed how her 'mentor' from her postgraduate taught programme had approached her to collaborate on a book chapter due to Julia's knowledge of the area. When the book was published, she detailed how her friends and housemates were more pleased for her than she was herself and this acted as another form of recognition as she explained: 'when I tell them of my achievements, them being so in awe of it is a real motivator'.

These forms of recognition also helped to counter the more challenging aspects of

PhD study. Gemma drew on the positive feedback that she received from presenting her research at conferences and the recognition that she received from this. While she continued to struggle with sounding 'suitably academic' in her research writing or in the supervisory relationship, she contrasted this with the external validation she got from being able to communicate with others outside of this relationship because 'the conference bit I'm good at and I can do, and I get great feedback'.

With all of these forms of recognition of PhD development, networks that were rhizomatic and existed within and outside of Central University played a crucial role. Colman (2010) states that the rhizome can also be comprehended as any network of things brought into contact with another, and it therefore functions as an assemblage, so that it can produce new effects, new ideas, and even new bodies. For those of my participants who developed these rhizomatic connections they were a source of feedback and recognition that worked in helping their adaptation and development as a PhD student. For Deleuze & Guattari (1987) the rhizome never reaches its destination but is always in the middle, 'intermezzo' (p. 25), just as with my participants their adaptation was always ongoing and was made up of fluid connections.

The recognition of my participants' development came from the institution, from interactions with others as well as the sharing of experiences and practice and all these forms of recognition helped to support their adaptation as PhD students. Foot et al (2014) state how important recognising PhD student development is and my findings in this chapter have provided examples of this and how this worked and helped in the development of my participants.

Summary

Through a consideration of various aspects of PhD study in this chapter I have identified the ongoing nature of adaptation with a focus on changes over time for my participants. This showed that there were not always breakthrough moments, but rather progress mixed with either an inability to adapt or setbacks in adapting in other areas. Through using the molecular line, the contribution that this chapter makes is to focus on the incremental nature of participants' adaptation to PhD study. The use of longitudinal data has aided this process in identifying the changes that took place for my participants between their two interviews. In describing longitudinal research, Derrington (2019) states that it is about understanding change over time and seeks to describe the form of change process; what the data between the two interviews has shown is that transformations in my participants' positioning was often developmental and not always coherent.

By taking how participants responded to specific aspects of the structured nature of PhD study, this chapter has demonstrated how they adapted and how some of their molar lines became more molecular. In categorising these changes as molecular adaptations, I have been guided by the literature on the characteristics of molecular assemblages, which states that they are marked with a diverse range of bodies, connectivity and diverse feedback networks. In assessing when my participants were successful in their adaptation in this chapter, we can see evidence of these characteristics. For instance, the presence of a diverse range of bodies came through when participants took an active part in conference attendance, in teaching and sharing with others in the academic community. These public settings for the doing of PhD study also provided participants with access to a diverse set of feedback networks with responses coming from other students, friends, colleagues and audiences at conferences.

All of these forms of adaptation were helpful in my participants' development, however, what the chapter also highlights is a more nuanced understanding of liminality within the PhD experience. So, rather than liminality being a continuous feature for the PhD student as suggested in the literature (Jazvak-Martek, 2009; Keefer, 2015 and Bengtsen & Barnett, 2017), in my findings it only tended to occur when my participants were faced with aspects that challenged their own molar lines in attempting to adapt. Instead of continual liminality, there were periods of successful adaptation to the molar nature of PhD study mixed with times when adaptation was unsuccessful through a combination of personal circumstances, participants' own molar lines as well as other aspects of their lives. Lee (2011) claims that within doctoral learning there is a sense of 'becoming-other' (p. 159) and in confirming this and in contrast to the literature that suggests PhD study as either being continually liminal or as a process of 'breakthroughs moments' (Kiley, 2015, p. 53), instead it is more appropriate to view it as it being an evolving process of becoming-other where successful adaptations are mixed with an ongoing need for PhD students to keep adapting.

Having considered how my participants adapted, in the next chapter I will examine forms of resistance in relation to the qualification and how they work to aid the progression of the PhD student.

Chapter 7 Resistances in the PhD student experience

7.1 Introduction

Having examined the challenges that my participants brought to their PhD study and their forms of adaptation in this chapter the flight line will be used to explore my participants' PhD experience. Usher (2010) claims that this line can be understood as a metaphor of resistance to established hierarchies and I will start this chapter by discussing how resistance has been examined in the PhD student experience literature. I will then discuss how my participants resisted aspects of their study and a distinction will be made between forms of 'everyday resistance' (Vinthagen & Johansson, 2013) and flight lines before discussing the examples of this line that were identified in my participant interviews and the role that it played in enabling their progression and becoming other.

7.2 Forms of resistance in the PhD student experience

In Chapter two I discussed the challenging nature of PhD study and McCray & Joseph-Richard (2020) highlight how over the past twenty years we have a greater understanding of what individuals struggle with. Nevertheless, our knowledge of how individuals might resist aspects of the structured nature of PhD study remains limited as the literature has tended to focus on how individuals might struggle and not on how they might resist. As a result, Hopwood (2010) argues that the research that has been undertaken has tended to position PhD students as 'a population subject to rather than co-constructing or resisting structures' (p. 104) and this has meant that there are relatively few accounts of the PhD student experience that present individuals resisting either PhD study directly or aspects related to the qualification. Instead, forms of student resistance in the PhD can be identified in the literature through studies that apply the concepts of structure and agency with the supervisory relationship being the main site of struggle and resistance (Hopwood, 2010). Forms of student resistance

can include lack of frequent supervisor contact and non-adherence to the submission of work (Sverdlik et al, 2018). Nguyet Nguyen & Robertson (2020) note how international students use 'agency as struggle and resistance' (p. 9) in their attempts to change institutional practices. In these types of research forms of relational agency and knowledge creating agency are apparent in how PhD students develop a sense of self-efficacy in dealing with setbacks inherent in the research process. However, rather than these being studies that primarily examine forms of resistance, it is the agency in relation to the structured nature of PhD study that is foregrounded, and as a result limited attention is given to what constitutes resistance in the PhD student experience and the forms that this might take.

In addressing this gap, I began by identifying in my data where my participants discussed instances of what they were challenged by and when they were resistant to aspects related to their PhD study. For Deleuze & Guattari (1987) 'resistance' is a flux of forces in an assemblage that produces micropolitical effects contrary to power structures, and these can either be organised or more haphazard moments. For example, in her first interview, Lorna discussed how her supervisory relationship could be quite 'strained' at times, especially when they were pressuring her to produce her research:

And as soon as I then saw them for supervision meetings it was like, "Oh, just write it, just write it. Just get it done." It's like, "I've told you the position I was in three months ago, and now you're back to 'just write it'!

Ben discussed how he was often late in submitting his work to his supervisors and how his PhD study generally lacked much structure. While acknowledging the importance of having this structure he explained how he had been quite resistant to doing this as he felt this would result in his research being: 'a less creative process than perhaps I was hoping in terms of how I structure and present my arguments'.

Despite his resistance he did not raise this with his supervisors and agreed to follow their advice in how his work should be structured.

Some of my participants emphasised how resistant they were to aspects of the wider academic environment, as Julia explained:

I find at conferences when it's the mingling part and everyone's handing out their business cards, unbearably awkward. And I don't know why. I just find it somewhat artificial. Don't get me wrong. I go to conferences and I talk to people and they're great and whatever but some of it doesn't sit comfortably with me. It just feels a little bit like you're marketing yourself and that doesn't come naturally to me.

Despite her positioning and desire to be an academic, Julia acknowledged how 'when the PhD is done, I think that there are elements of academic life that I will find harder to overcome than others'.

Similarly, Greg discussed how resistant he was to attending social events with academics and other PhD students: 'I will never attend anything and any invitation to a drinks evening is just straight out. I don't want to drink, and I don't want to talk to other people'. He went on to state that he had also found this at conferences and how for him they had always been 'horrendous'. However, this view changed when he discussed being invited to conferences to give a presentation and how for him having this role meant it was easier in managing his positioning as he explained:

When you're actually part of it rather than on the fringes, it's actually easier. I don't mind giving a speech in front of hundreds of people. That's quite straightforward.

Despite the comfort this role gave him he continued to find the social side of 'mingling' at conferences a challenge as 'there'll be networking and interactions and I'll struggle with that'

For each of these participants their opposition to various aspects of their PhD study constituted forms of 'everyday resistance'. Scott (1985) introduced the concept of everyday resistance to take account of those instances that are not confrontational articulations of resistance. As such everyday resistance is 'quiet, dispersed, disguised or otherwise seemingly invisible' (Lilja & Vinthagen, 2018, p. 215). Vinthagen & Johansson (2013) note how everyday resistance can be 'silent, mundane and ordinary' (p. 9 – 10) with actors not necessarily regarding their acts as resistance, but rather as part of their way of life. In the ways that they discussed their actions, none of these participants talked about them as forms of resistance. However, there was a recognition on their part that the act of not engaging with a supervisor or not wanting to take part in an academic activity meant that they were not conforming to the expectations of being a PhD student and they were being oppositional in relation to the structures of PhD study.

While helpful in supplementing our understanding of resistances in PhD study, by these participants remaining quiet and invisible none of these examples effected changes in relations with supervisors or the wider academic environment and as such they did not constitute flight lines. As discussed in chapter three, a flight line is something that inspires or motivates change by upsetting the connectives in an assemblage and is transformative. A flight line reaches outside of an assemblage to connect to that which is outside itself and as part of this a process of deterritorialisation takes place with changes occurring in the assemblages concerned. Flight lines are not just any act of resistance but are creative shifts that give rise to new possibilities for living.

For Deleuze & Guattari (1987) the process of deterritorialisation enables bodies to be changed and reordered and in chapter three I discussed the example that they provide of the flight line between the wasp and orchid and how as a result of their

deterritorialisation changes took place for both parties in their development. Deleuze & Guattari (1977) describe deterritorialisation as a process of 'coming undone' (p. 322) and propose that it is best understood as a movement that produces change. For Parr (2010) 'to deterritorialise is to free up the fixed relations that contain a body all the while exposing it to new organisations' (p. 69) and rather than the dualistic framework of structure/object, it is instead a process of change that is immanent within a body.

For the participants discussed in this section their forms of resistance were not flight lines with deterritorialisation that resulted in changes and as such they were not escapes from the territorial assemblage of PhD study. Lorna's position with her supervisors did not change, Ben conformed to how his supervisors expected his work to be structured and despite their discomfort with aspects of the academic environment, both Julia and Greg felt these were things that could not be changed.

7.3 Identifying flight lines in the PhD student experience

While I had identified instances of my participants' hidden 'everyday resistance' to PhD study, in contrast there were other instances where there were visible 'confrontational articulations' (Vinthagen & Johansson, 2013, p. 4) that constituted flight lines with resultant changes for the parties involved. In identifying these I was guided by elements from the literature in how flight lines are operationalised, and I used the following three-step process:

- a) Identifying where my participants discussed forms of resistance whether this be within their PhD study, through their family or in response to their work setting,
- b) Identifying what forms these resistances took and how these led to the initiation of flight lines,

- c) Exploring the processes of deterritorialisation that took place and the changes that resulted from my participants' flight lines, both to themselves and to the assemblages that were being resisted.

By applying this three-step process to my participants' interviews, I was able to identify that for Carlos, Lin, Peter and Gemma their forms of resistance constituted flight lines, and these will be discussed in the next section.

7.4 Carlos: A flight line in the supervisory relationship

In his first interview, Carlos discussed how as an international student he had struggled to adapt to the requirements of PhD study and how even though he got on with his supervisors he felt that they were 'absent' and often very hands-off in guiding his initial PhD work. This had left him with moments of doubt in terms of the direction of his research:

I mean, my supervisors they are just great people, but they are very hands-off. So, for the first year of the PhD I didn't have enough tools, enough guidance and that made me feel lost at some points because I was just alone.

Carlos discussed how this exchange of information was for him the biggest challenge that he faced with his supervisors:

I was working a lot and making all these reports and submissions, but they were all rejected because my supervisors they just said, "No, we don't like this", but they wouldn't say what they thought I should do and instead they would just say, "We think you should go the other way!" So, I felt we were playing around with my topic and it wasn't clear what was needed.

In discussing these types of tensions that emerge from interactions with supervisors in the development of research, Done (2013) claims that it can be unsettling for PhD students who might expect their supervisory relationship to reflect the more highly

formalised hierarchical structures of the university assemblage with its prescribed sets of practices. This was particularly the case for Carlos who in his first interview discussed how he had imagined both the PhD and the supervisory relationship as being more structured:

I felt that the PhD programme would be very, very straightforward, just research, normal meetings, regular meetings with my supervisors. I felt everything was going to be very structured. I thought it was going to be easier, but I just realised that it was not like that.

While his supervisory relationship remained troubling, Carlos discussed how he had made connections to other PhD students in the university. In chapter six I discussed how connections such as these function as rhizomatic networks and Carlos had also submitted papers to research conferences that had been accepted and this had left him feeling more settled in his positioning. In reaching outside of his supervisory relationship for support and recognition, Carlos was connecting to his rhizomatic networks and in the process was opening up what Usher (2010) describes as being 'fluid spaces' (p. 70). These spaces can result in challenges to the lines of consistency that establish hierarchies and define relations and at the end of his first interview Carlos discussed confronting his supervisors about what he felt was their lack of support:

"You know what? I think time is just running out and I feel lost in this project. My other PhD mates that started with me, they're almost submitting their PhD project, their thesis and stuff and I'm still struggling with the methodology."

While this confrontation with his supervisors might appear to constitute a flight line, on interviewing him again, Carlos discussed how he had continued to challenge his supervisors and he discussed how he felt that there were no changes and as a result no process of deterritorialisation with change happening on both sides. In relation to

the supervisory relationship, Done (2013) argues that it should be viewed as a form of assemblage that she conceives as being made up of 'a fluid constellation of forces' (p. 8). However, as a site of PhD student progression, this is an assemblage that can be unpredictable in which all parties need to communicate, as Carlos demonstrated.

Between his first and second interviews, Carlos attended a PhD student exchange programme in the United States that brought together research students from different parts of the world to present their research. A key aspect of this programme was the ability to network with others and discuss their experiences on the PhD and this provided Carlos with opportunities to explore his supervisory relationship with others as he explained:

I talked with other PhD students about the ways they work with their supervisors, the relationships, and I heard that there are multiple ways to work with these people and it all depends on the approach that you take and when I returned to the UK, I realised I needed to be more open about what I needed from them and try to negotiate more with them and feel less intimidated and agreeing to anything they say.

This further rhizomatic networking made a real difference for Carlos and following his return to the UK in a subsequent supervisory meeting he discussed how he had made it clear to his supervisors that he was not looking for a future in academia and how he wanted them to be 'more open' about what they really expected from him in terms of his progress: 'I was clearer about what I want, what I can provide and what I've done so far'. As a result of this he discussed how there had been a change in his supervisory relationship that did result in a line of flight for both Carlos and his supervisors as he explained:

So, I was very clear with them and since then they have been more approachable, which is good, and I think our communication is much better.

He also discussed how he had negotiated with his supervisory team the involvement of a third supervisor from another university and how this individual had made a difference in progressing his research by providing:

Insightful and useful feedback because my topic is closely aligned to what he has been doing recently and this has been a massive confidence builder.

For Carlos his resistance to aspects of his supervisory relationship took place over time and involved a number of ongoing conversations where changes did not result. His supervisors continued to have specific expectations while he was looking for a changed dynamic. Through a process of connecting with other PhD students at Central University as well as learning from others in different universities and making connections with a wider academic environment he was able to formulate an approach with his supervisors that they accepted and as a result, changes did follow for him and his supervisors in their relationship.

For both Carlos and his supervisors this was a flight line from which changes resulted in a process of becoming. In chapter three I provided Deleuze & Guattari's (1987) example of the wasp and orchid and how each becomes part of the other in a line of flight. In other words, changes need to result for both parties. For Carlos his flight line meant a process of becoming-supervisor and involved over a period of time understanding how his supervisors undertook their role in relation to him. He also needed to work through a process of guidance with others that helped inform what he was looking for from his supervisors. While for his supervisors a similar change process happened in their becoming-Carlos through having various meetings with him after he returned from the United States and discussing the type of supervisory relationship, he felt he needed, and how best they could provide this.

For Deleuze & Guattari (1987) a flight line can be transformational and to enable its creative potential Carlos needed to draw on his rhizomatic networks of support to

enable him in making changes to his supervisory relationship. The literature has highlighted how international PhD students in particular might challenge their supervisors and various authors (Marginson, 2014; Tran & Vu, 2017 and Nguyet Nguyen & Robertson, 2020) have highlighted how it might be more necessary for this type of student as they navigate their positioning in the culture of PhD study. This was certainly the case for Carlos in resisting aspects of his supervisory relationship. Nguyet Nguyen & Robertson (2020) comment that at times there is need for international students to display 'resistance, resilience and independence' (p. 10) and this mirrors how Carlos repositioned himself in relation to his supervisors and the support he was looking for them to provide.

7.5 Lin: A flight line in the family

In chapter five I discussed the molar line of the family and this territorial assemblage was a prevalent theme in my first interview with Lin, particularly in how her father had a strong influence on her future choices. She began by discussing how her father made it clear to her at the age of 15 that he would not support her if she wanted to study outside of China: 'he decided that I was not allowed to go abroad to study and if I did that, he wouldn't support me to go'. Instead, Lin remained in China for her undergraduate degree, and she discussed how during this time she began to identify a future career in the legal profession. Having discussed this idea with her father, she explained how he did not think that this was a suitable career choice and how he used his networks of connections to persuade her against this:

Initially I wanted to do law because I was quite interested in that discipline, but then my father talked me out of it. He felt that being a lawyer can be quite difficult, like it can lead to having quite a difficult life, in China. You have to network with so many people and you have to cater to the needs of clients. And he just invited a couple

of his friends in that industry to talk me out of it and he wanted me to do teaching, language teaching.

While admitting to liking teaching, during her first degree she also explained how some of her lecturers felt that instead of becoming a primary school teacher after graduating, she should continue with her studies. However, for Lin being able to carry on studying was in direct opposition to her father's wish of wanting her to work in a primary school as she explained:

It's a desirable profession and according to my Dad and many other patriarchal men in China, teachers, particularly in primary schools..., who work in primary schools, they would have the time to take care of their families and children while working in a very 'pure environment.'

Lin elaborated how for her father being a teacher would enable her to marry well and to be happy:

My father mainly wanted me to become an English teacher because he thinks that it's a profession where it's 'very easy to marry someone good.' He thinks that I need a man to make me happy.

Despite her father's ambition, Lin explained how she had enjoyed her undergraduate studies and had a final year supervisor 'who showed faith in me' and illustrated to Lin 'the rigour, intellectual curiosity and passion for research... that inspired me to continue with my research'. As a result of this Lin discussed how she began to challenge her father's wish for her to begin a teaching career after she had completed her degree and she began to start discussing with him how she wanted to continue her studies by undertaking a postgraduate qualification in the United Kingdom. To enable her to do this, Lin described how she had to make 'a deal' with her father that meant that if she completed her masters and could start a PhD during the following

year, he would allow her to continue with her education. In explaining his agreement to this plan, Lin explained that it was still motivated by her father's idea of marriage:

He doesn't have an idea what a PhD is, but he thinks that having a PhD will allow me to become a lecturer in a university – which will lead me to a better man to get married to.

In wanting to do a PhD, Lin was challenging her father's wishes for her to become a teacher and stay in China. As Nail (2017) explains the family operates as a territorial assemblage where life is arranged in concrete elements that 'are coded according to a natural or proper usage' (p. 29) and territorial codes operate in families to define the norms of life that set specific limits on how things are done. With Lin we can see how her father wanted to limit her attempts at escaping the territorial assemblage of the family and while her father allowed her to continue her studies, he set limits on how this should be done. For Nail (2017) a territorial assemblage functions by delimiting territory and by creating new limits to cross with changes happening 'one concrete point at a time' (p. 30) and this was the case for Lin with her father's control limiting her possibilities.

In addition to the territorial assemblage of the family in Lin's interview we also see what she describes as 'the patriarchy of men in China'. Tang (1995) discusses how as the patriarch of the family, the father's chief responsibility is to ensure that no role in the family breaks the rules, while Zhang (2015) states that these established roles are based on the principles of consanguinity or marriage. In exercising his patriarchal role in the family, Lin's father also occupies what Deleuze & Guattari (1987) refer to as the role of state assemblage. This formation is characterised by the centralised accumulation of order that 'operates by stratification; in other words, it forms a vertical, hierarchized aggregate that spans the horizontal lines in a dimension of depth' (p. 433). In attempting to uphold the expected role of his daughter in the family, the

concern for Lin's father was more about the role her PhD might play in her marriage prospects rather than for her future career. His concern also reflects an issue highlighted by Martin (2014) where high achieving women in China often face discrimination in the marriage market. In doing a PhD, Lin is both challenging the territorial assemblage of the family and the state assemblage of order and while enabling Lin to continue her education and begin a PhD, it is clear that her father set limits on this and in Lin's words 'a deal was struck'. However, this agreement was the beginning of the line of flight for both Lin and her father.

In gaining her father's consent, Lin's flight line began with a resistance to her father's plans. Deleuze & Guattari (1987) discuss how there is no priority for the lines in an assemblage and you can begin with rigid segmentarity, followed by supple segmentarity and end with how 'the line of flight enters in'. However, they state: 'it is also possible to begin with the line of flight: perhaps this is the primary line...[and]...it is clear that the line of flight does not come afterward; it is there from the beginning' (p. 226) and for Lin the opportunity of undertaking a PhD created a 'bridge' to what would take her away from the territorial assemblage of family and state.

In her first interview, Lin discussed how happy she had been to start a PhD: 'when I got my offer, I was very excited about it'. However, she also explained how hard it had been settling into being a PhD student and creating her own work routine when sometimes 'my planning goes down the drain' and 'it's hard to work without a deadline' with the result that 'I feel like doing nothing. I'm not reading or writing, and I feel lost sometimes'. In escaping her territorial assemblage to take up PhD study, Lin struggled with the process of deterritorialisation. Usher (2010) argues that while deterritorialisation offers liberation from 'all over-determined and over-determining systems' (p.72) it can also leave individuals in a nomadic assemblage, with no fixed identity in 'an endless migration across the networks of assemblages' (p. 72).

Having struggled to begin her line of flight and following her first interview it was not clear to me if Lin's desire to be a PhD student would be realised or whether she would continue to struggle with the nomadism of her deterritorialisation meaning that she would be unable to settle into her studies. In discussing the process of change that has yet to produce an established assemblage, Nail (2017) states that while we might recognise that 'a new element or agency has escaped the established assemblage' it is not clear where this might lead. According to Deleuze & Guattari (1987) this type of change is 'extremely ambiguous' (p. 247) because it is a borderline phenomenon that is split in two: 'It is both the possibility of a new world and the possibility of co-optation' (p. 291).

In her first interview she discussed having little structure in her PhD and there being long bouts of procrastination as she explained by providing figure 10 below:

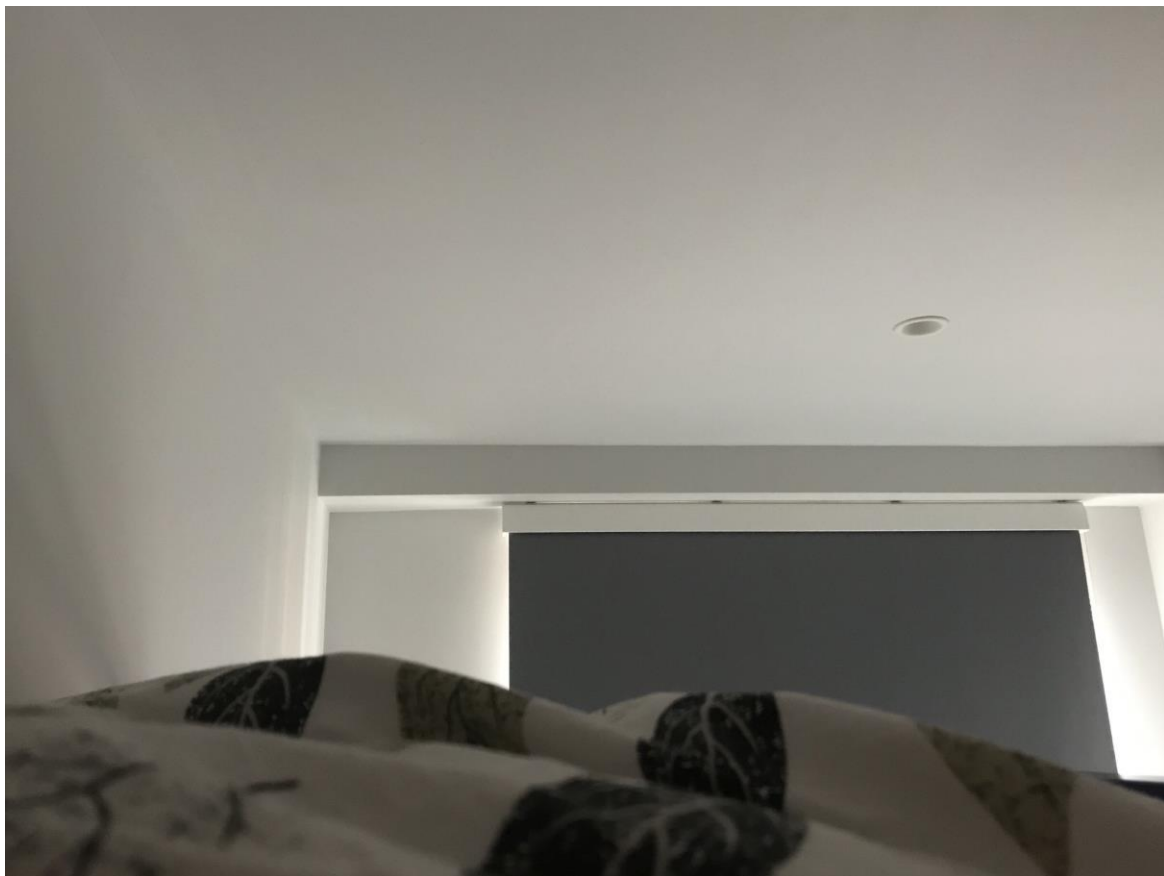


Figure 10: Lin: 'Lying on my bed all day procrastinating'

This is me lying on my bed. So, you can see part of my blanket, quilt thing here, and this is the ceiling, and you can see this is – what do you call it? The blind. And you can kind of see the sunlight from here because this is actually during daytime. I don't like lights when I'm procrastinating because it makes me feel ashamed. The weather is beautiful outside. I just don't want to go out. I just don't want to step outside of my room, so I just eat, go back to my bed, lie down and then watch my iPad or phone and then eat another time and then take a shower and go to bed again. So that's my very usual routine of procrastinating and it makes me feel really, really bad but I keep doing it anyway.

Lin's reactions conform to Klingsieck's (2013) view that extreme forms of procrastination exhibit themselves in individuals as subjective discomfort and while she wanted to work, she found it a challenge to focus, and this was in marked contrast to the image that she provided for her second interview in figure 11 below:

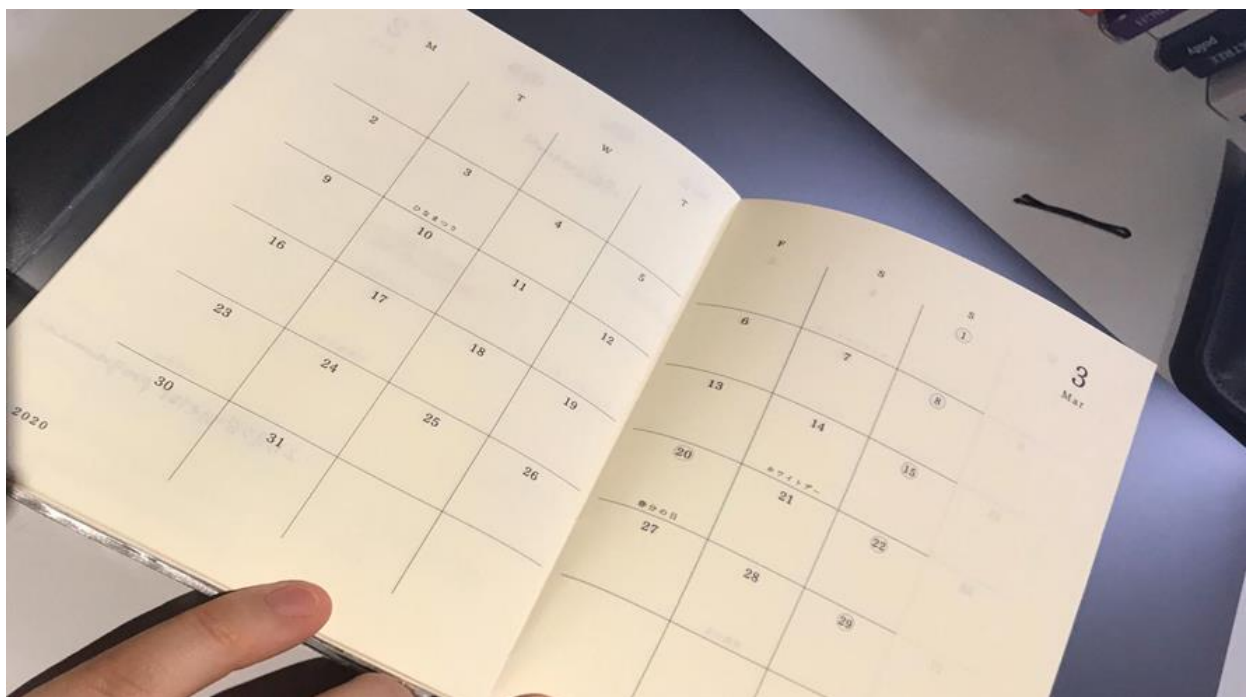


Figure 11: Lin: 'That's my system'

My planning notebook has a monthly page that you can fill in, so I just fill in my meeting days and my priorities in that monthly spread. I either put a small arrow

meaning that I'm going to move a task to another day or I'm going to cross it. I put a cross next to it saying that this is no longer relevant, or I don't have time, this is not important. Or I just cross it because I've just finished it and I've put a check next to it. And every week I review the week before just to cross everything and to see if there's anything to migrate or to cross. That's my system.

By the time of her second interview Lin discussed the structuring that she had developed for her PhD and how engaged she now was with undertaking her research. Deleuze & Guattari (1987) note that flight lines 'never consist of running away from the world' (p. 204) in the way that Lin appeared to do in her first interview by hiding away. She also discussed how her adapting to PhD study had been aided by her involvement in one of her supervisors' research projects. As a result of undertaking this work with its deadlines she discussed how this had provided a useful model for applying to her own PhD study that meant she needed to complete and submit work by set dates. In chapter five I discussed how benefits were accrued from the molar line of work by those participants with professional experience that they then applied to PhD study and this was also the case for Lin.

She went on to describe how she had returned to China to begin to undertake her fieldwork and how at the same time, she needed to see her doctor because of the stress that she experienced in her research work and she was diagnosed with high blood pressure. She explained that her health worries had prompted a change in her father's attitude, who had always been so impatient wanting to know if her thesis was finished as she explained:

So, when I was about to go to the airport, I said, "I'm going to study really hard," and he was shaking his head, like "No, no, no, don't do that. Just relax. Have fun in between your breaks, that would be great. Take four years, five years, it doesn't

matter as long as you are healthy. As long as you exercise and eat properly and sleep properly.”

She explained what impact the change in her father’s views on her PhD had on her:

I think it’s a huge step and it really helps me because I used to think of my thesis as really overwhelming because there’s so many expectations from my family, but now that they don’t expect as much that’s enabled me to view my research differently in terms of what is manageable in my PhD and what is not.

Given the limits that her father had initially set on Lin’s PhD, the change in his views on her study was a significant step in his deterritorialisation in relation to Lin’s flight line and his need to control the process.

We concluded the second interview by discussing Lin’s plans for the future and she explained:

So, I think I’m starting to see this future self, that I’m going to work as a researcher, as a lecturer in the university, just doing research and doing teaching. I like teaching. I’ve started to look at job advertisements for posts and I can start to feel like I’m making progress.

This statement suggests that Lin is looking to continue her flight line from the territorial assemblage of the family and the state assemblage of marriage into a future that might involve a career outside of China in academia. While not stating that she will not return to China when she completes her PhD, she leaves this open, and marriage does not appear to form part of her future plans. Instead, her flight line has created a ‘bridge’ (Usher, 2010) to new possibilities through a connection to new assemblages.

Lin’s flight line manifested itself in various ways and involved rhizomatic connections both in China and the UK. Hopwood (2010) claims that undertaking a PhD can constitute a break from family that can lead to difficulties in maintaining relationships.

He highlights how international students can feel rejected by family norms or their community when they physically separate themselves through their doctoral study. However, for Lin this was not the case and she continued to be in contact with her family and her community.

For Lin, her flight line involved resistance and negotiation with her family and the need for her father to occupy a space of deterritorialisation in changing his 'concrete' views on Lin's continuing studies and her potential future. Lin's flight line with her father took place over a number of years and was followed by a gradual process of becoming. In becoming-father, Lin stated how despite her resistance she appreciated her father's desire to have her settled in a career and marriage and stated she also wanted this when she completed the PhD. Her becoming in the PhD involved continual contact with her father with updates on her progress and when she visited China, she discussed with him future career plans and how she had identified academic posts closer to home. While in his process of becoming-Lin, her father had agreed to 'strike a deal' in financially supporting her MA and PhD and being more relaxed about when Lin completes and for both of them the flight line was transformative.

7.6 Peter: A flight line in reaction to the institution

Peter's flight line came as a resistance to the university as a hierarchical assemblage in what he experienced in the early part of his PhD study. Peter started his first interview by discussing how 'difficult' he had found his PhD experience and how the institution was 'quite an impersonal organisation'. As discussed in chapter five, he had imagined that the university would have been 'more open and accessible' and he compared what he found with his experiences as a headteacher in schools, where he felt there was more accountability and students were given more support.

He detailed how over the first two years of his PhD study he had challenged the institution about issues of support that arose for him:

I've actually said here "Why the hell don't you have more drop-in places where people like me and others can come in and say, "Right, I've got to do a poster. Help me do it." You don't have to do it for me. I'll sit in the corner, but also lots of other things. I found that almost debilitating and sometimes almost thinking, "That's too much. Can I really be bothered?"

He continued by discussing the issues that he had faced over finding a workspace in the university:

I made comments about providing appropriate working space as I like coming in here. I've found a few spaces now and I've worked my way round it, but it's not easy. I got into a bit of trouble about it because I could see others claiming a workspace and I tried doing it as well and somebody objected one day because I had done that. And I said, "Well, what's everybody else doing?" So, I felt that I was being victimised for something that was way beyond my influence. It seemed to be pitting PhD students against one another, not creating a doctoral community which I really thought I was going to be joining.

So, I complained about that and I also complained about the support I'd been given starting off. I'm not sure whether either of them went down too well.

For Peter, his initial interactions with the structured nature of the institution resulted in him challenging what he found but these were incomplete lines of flight and did not result in either changes to himself or the university. Bacevic (2019) argues that universities are assemblages that are composed of heterogeneous elements that include persons, buildings and machines and as such through a process of territorialisation their role and purpose have become defined by charter and governing bodies, with designated spaces and 'well-defined borders' (p. 80). As a result of these processes of territorialisation structures become largely arborescent meaning that they are ordered in hierarchical ways that are coded by discourses that work to keep

the practices, boundaries and distribution of materials of an institution in place. Bacevic (2019) argues that as a result of the processes of territorialisation universities have become examples of highly formalised arborescent assemblages with a degree of coding where language and non-verbal behaviour is usually prescribed and this can prove problematic for those individuals like Peter who, by challenging the components of the university assemblage, can view themselves and be viewed as not belonging. However, rather than accepting the arborescence of the university assemblage and wanting to continue to affect institutional change, Peter discussed how he continued to challenge the institutional structures in his PhD study through the use of one of the university's own bodies:

Following my complaints somebody said to me “Why don’t you become the student rep?” So, I became the rep, and I was able to put forward the student view on these things and I made a point of going around and speaking to quite a lot of doctoral students. And saying, “What do you need?”

In occupying the role of a student rep and connecting with other PhD students, Peter used this rhizomatic network to bring about change. Usher (2010) states it is ‘the rhizomatic that engenders lines of flight, re-opening flows that the tree-like structures of lines of consistency have shut down’ (p. 71) and this was the case for Peter who detailed the result of his rhizomatic connections with other PhD students as he discussed:

As a student rep I had a lot of meetings with university administration and one of the main issues for other students was that lockers had been taken away. I found that the institution here weren’t in the slightest bit bothered about taking the lockers away. They said, “Too much for our admin staff to organise the keys when they’ve got other things to do.” I said, “I don’t have that problem when I go to the swimming baths and I didn’t have this problem when I was working in schools. I gave every

kid that wanted one, a locker.” So, it became quite a symbol for me and actually they did change the policy and not just because of my overtures, but I like to think I had something to do with it and they’ve now got a policy of re-instituting some lockers.

As part of Peter’s line of flight in challenging the institution, a process of deterritorialisation took place that led the university to review its thinking on providing lockers for PhD students as well as ensuring the staffing was in place to administer the system. In discussing how institutions are structured, Bacevic (2019) states that assemblages are not fixed and through the processes of territorialisation and deterritorialisation they are constantly undergoing periods of contraction and expansion. As a result of these processes, he claims that the boundaries of assemblages, such as universities, can be extended or ‘stretched’ (p. 81) by other entities resisting, like Peter did in his role as a student rep.

When I interviewed Peter again and reflecting on the institutional changes that resulted from his flight line as a student rep, he admitted that some of his perceptions of the university had changed as a result of his work with university administration. He also acknowledged how the university was a large organisation and how it could be a challenge to make changes in practices so that everyone approved. Generally, he felt the university were taking ‘more notice’ of their PhD students and were in the process of reviewing how best they could support them and as a result for Peter ‘the institution has changed’. He also discussed feeling more settled as a PhD student that was in part due to making progress with his academic writing, but also as a result of feeling better connected to his peers:

I have now got some connections within the doctoral community, so if I come in, people will nod and say hello and things like that. You feel part of something. It’s so important to feel part of something.

This positioning contrasts sharply to how he had previously discussed the university in his first interview where he felt 'victimised' for needing to fight for a workspace and how there was little sense of a doctoral community. For Peter being willing to take on the role of the student rep had enabled him to resist university practices with a flight line that resulted in changes taking place. In doing this Peter is unusual as Nguyet Nguyen & Robertson (2020) claim that most PhD students are generally reluctant to make complaints about their institution for fear of offending their supervisors or risking their own progress and instead prefer to deliberately conceal issues. Manathunga (2014) contrasts how for younger students there is a real reluctance to challenge their institution and Thomas-Long (2010) claims that those engaging in acts of resistance believed themselves to be viewed as 'trouble-makers' by the university (p. 205).

Similarly, to Carlos and Lin, there was a temporality to Peter's flight line with Central University and how this occurred through 'the actualisation of connections among bodies' (Lorraine, 2010, p. 147). During the first two years of his PhD study, he faced a number of challenges and it was not until his role as a student rep that changes resulted through his flight line. Through being a student rep Peter's becoming-institution meant he was able through management discussions to appreciate the barriers in introducing some of the changes that he felt would benefit PhD students. While in their process of becoming-Peter, the institution had made changes to what they provided for students based on feedback from an informed student who was willing to complain and had experience of initiating changes in the school system.

7.7 Gemma: A flight line between work and PhD study

Gemma combined working full-time as a university lecturer with doing her PhD study on a part-time basis. For her first interview she provided the photo in figure 12 below to illustrate the mobile nature of her PhD study and how this was combined with her professional work and how these were reflected in the contents of her bag:



Figure 12: Gemma: 'In the bag today'

Since I started my PhD, I've never had to carry so much stuff. I've got three different notebooks. I had a small notebook for lecture notes, things I go to. I've got a yellow legal notepad which is for ideas that come out of my mind and I've got a notebook of white lined pages which is for taking notes and then I've also got my work stuff.

Gemma's photo provides a visual representation of the physical doing of her research work, and just as with Nuala in chapter six, the PhD had a bodily impact on Gemma. Unlike how our understanding of the mental health issues associated with PhD study are beginning to be more understood, Sverdlik et al (2018) note how there has been comparatively little attention on its physical impact. In contrast to Nuala, Gemma was determined to continue to find time to exercise and she discussed how her bag also contained her swim kit and how sometimes she found the time to exercise. This differs to Rizzolo et al (2016) who found that personal life goals such as physical health are

often neglected during PhD study. Gemma's bag is a reflection of the organisation that she needed to have in combining work, exercise and PhD study with her bag needing to have separate sections and van Rooij et al (2019) note how this level of organisation is helpful in aiding adaptation to PhD study.

Gemma's professional work and how it was a motivating factor in encouraging her to do a PhD was a feature of her first interview. She discussed how for the previous ten years she had been doing university teaching 'in a precarious way' without any confirmed long-term future and 'about two years ago I realised I was stuck in a professional cul-de-sac if I don't do a PhD'.

She explained how undertaking the PhD was a step in securing her future employment:

I've applied for several jobs where I would be the Head of a subject and I was basically told "you don't have a PhD and that would have helped you." So, I'm doing the PhD because I want a different job. I do want to leave my current job at some point, and I want to have autonomy over what I teach.

She went on to discuss how her employer had not necessarily supported the idea of Gemma doing a PhD and neither had they been prepared to provide any financial support to enable it to happen. While registered part-time, she discussed how her preference would have been to be a full-time PhD student. In not being able to do it this way she discussed how she was not always able to devote as much time to her research to get 'as much out the process' as she wanted. She discussed how she needed to put aside her research when work was busy and then focus on her PhD study during breaks from work and in the summer.

While enjoying her work and acknowledging that it was a financial necessity, it was also a source of tension in relation to her PhD study. On the one hand, the PhD was a way for her to develop her career while at the same time her paid work constrained

her ability to do her research that left her with a sense of frustration. Gemma explained that her employer provided little support in terms of career development and how it was other colleagues who supported her idea of doing a PhD. Having witnessed others resigning was 'a bit of a catalyst' because these colleagues had PhDs and for Gemma it was this that gave them the 'freedom' to do this. For Gemma undertaking a PhD was a first step in her challenging the limits set on her teaching career by her employer. Painter-Morland & Ten Bos (2011) argue that while work might set limits in terms of what is possible for the employee, these can also be re-set and expanded through the processes of deterritorialisation and Gemma had used her rhizomatic network of colleagues to support her in enabling her to begin her challenge.

In her second interview, Gemma discussed how her reflections on her PhD study in relation to her employment had continued to evolve over the previous six months, as she explained:

Whereas previously I had thought, "I'm part-time, I've got to make the PhD fit into my work life and that's the way it's got to be, and everything's got to be based around it". Now I've really gone 360 degrees.

As a result, she discussed having continued to question her positioning in relation to work and study in re-evaluating what she wanted to achieve by undertaking the PhD and this had resulted in a line of flight in relation to her employer:

I realised that I've only got one opportunity to do this PhD and I need to go for the dream scenario with it because otherwise I'm still where I was. I want to make as much of the experience as possible and I decided I needed to take a couple of risks and that meant asking work for an unpaid sabbatical to do my fieldwork on a full-time basis.

In making this request she discussed how she needed to be 'brave' in requesting this change in her employment as well as generally being 'a bit more open to possibilities

and less pre-planned about everything'. For Gemma this meant doing more questioning about her PhD study, 'What are the possibilities that I couldn't have thought of before?'. For Painter-Morland & Ten Bos (2011) identifying the potential for change is part of the evolving nature of any assemblage which is a malleable site of deterritorialisation with no settled arrangement and instead it 'is rather a kind of emergent patterning' (p. 25).

As a result of her request being agreed by her employer, Gemma discussed how this had left her 'scared, but excited by taking a break from work to do my field-work abroad that will mean that the research will be different'. Usher (2010) discusses how lines of flight are meant to be 'liberating' (p. 71) and how they are a move away from the notions of repressive and homogenising order and this was the case for Gemma. In discussing her changed relationship to her PhD study, Gemma discussed how it had also triggered thoughts on the deeper transformation it might have on other aspects of her life:

I've got to take a few chances, or risks. The compartmentalising way I've been doing my PhD, keeping it separate from my parents, my family, my friends. That isn't going to work in the long run. So that's why I need to make this shift and my research has to be part of other aspects of my life.

For Deleuze & Guattari (1987) all life is a matter of flows and people and organisations, who are assemblages, are connected to a multiplicity of other assemblages that are also in a constant process of flux and decentring. In the above quotation from her second interview, Gemma acknowledges how the flow from one aspect of her assemblage will lead to a multi-dimensional set of impacts and a 'multiplicity of entwinements' (Usher, 2010, p. 70) with both the personal and professional assemblages in her life. In accepting Gemma's request to have a sabbatical, her employer had to change their contractual arrangement with her after

ten years and organise to have her work covered. Gemma discussed how understanding she felt her employer had been in constructively discussing the arrangements she was looking to have to support her PhD study and they agreed that she did not have to do any teaching when returned from her sabbatical despite the challenges that this would cause in having this work covered.

Eteläpelto et al (2013) argue that with the increasingly precarious conditions of working life, individuals are required to construct their own careers on an individual basis with little support coming from the socio-cultural settings of employers and communities. With Gemma's flight line with her employer there was a sense of her taking more control of both her career and her PhD study through a process of negotiation and compromise. Deleuze & Guattari (1987) state how in the flight line there is a mutual dependence between the wasp and the orchid with each needing the other for their survival. For each of my participants there was this same mutual dependence in their flight lines between family, supervisors and institution and this was particularly the case for Gemma and her employer.

As with the other three participants, there is a temporality to Gemma's line of flight that references her past, present and future career development. In her becoming-employer conversations, Gemma appreciated the challenges that she was presenting them with as an established member of teaching staff and despite their offer of not undertaking teaching when she returned from sabbatical, she also accepted that she might need to do this work if her employer could not find someone. While in their process of becoming-Gemma, her employer needed to make changes in relation to her work hours and in providing a sabbatical.

Summary

In this chapter I have explored various forms of resistance in PhD study and how these did not rest solely with the supervisory relationship. A distinction was made between

everyday resistance that resulted in no changes for those participants in contrast to flight lines where changes were affected for the parties concerned. Each flight line was initiated by a range of resistances that was followed by a process of deterritorialisation and it was only through this process that progression was enabled for the participants involved. Deleuze & Guattari conceptualise flight lines through which people become other and as with the adaptation detailed in chapter six, this chapter provides examples of processes of becoming other that my participants underwent. Winslade (2009) reminds us that flight lines 'do not need to be 180° turnarounds' (p. 344) and instead they might just be subtle shifts in direction. My participants' flight lines varied in approach and outcome, but for each of them the result was that they ended-up in different places in how they might live.

Deleuze & Guattari (1987) use the double figure of the wasp and orchid to demonstrate how the flight line functions, and by applying the three stages that constitute how this line is operationalised I was able to identify the processes of deterritorialisation experienced by my participants and those assemblages that they were resisting. Deleuze & Guattari (1987) note how flight lines are part of a process of resistance-permeated experimentation. As such they are loose ends that don't fit, they open new passages and cause modifications, fostering new and creative transformations with attention drawn to alternative ways of thinking and unorthodox places that are 'outside' of the expected centres of interest. For each of my participants their flight lines enabled transformations either in relation to, or as directly part of their PhD study where changes resulted. However, forms of power were also inherent in the assemblages that they were resisting through their flight lines. Deleuze (2007) notes how power and force always restrict our choices with people's lives being patterned and constrained by 'dominant significations' that shape existence (Deleuze & Parnet, p. 45).

The past, present and future are all features of my participants' flight lines. Reflected within them were my participants' personal histories that drew on their family relationships, professional identities, expectations of PhD study as well as intentions around future careers. In chapter two I noted how McAlpine & Lucas (2011) claim that the literature has predominantly focused on what participants experience during their PhD study and does not take account of an individual's past experiences and 'future imagined selves'. They argue that it is crucial that research in this area should focus on students' 'past experiences of intention' and how these might influence 'present intentions and aspirations' and future possibilities (p. 695). In contrast, and by using the flight line, this chapter has enabled consideration to be given to the temporal nature of PhD study.

In operationalising their lines of flight my four participants used a range of networks to shape the changes that they affected. These rhizomatic connections included mentors, colleagues in the workplace and other PhD students outside of the department or university. As with chapter six where I detailed how my participants drew on broad social networks in their adaptations to PhD study, this also happened in the process of operationalising flight lines.

Having considered my findings over the past three chapters, in the next chapter I will draw these together into a discussion that examines them in the light of the research questions posed in this thesis.

8.1 Introduction

This thesis has set out to research the social science PhD student experience and the challenges, adaptations and forms of resistance that are part of this. The intention of this chapter is to draw together my findings and examine the data presented in chapters five, six and seven. In doing this I will discuss and analyse responses to my research questions and present the key findings elicited from my participants' interviews and photographs. Following this I will examine the value that has been derived from my study's theoretical framework of interconnected lines and I will discuss the examples of participant difference and becoming other that I identified in my data. I will begin this chapter by a discussion of the challenges my participants faced before going onto consider their adaptations and resistances in undertaking PhD study.

8.2 The challenging nature of PhD study

In chapter two I discussed how the literature had set out how challenging a PhD in the social sciences can be. Needing to adapt to the research environment, the supervisory experience, the need to deal with loneliness and boredom, a sense of liminality and facing barriers to progression have all been reflected in the research that has been undertaken. In my findings chapters there was a confirmation by my participants of some of these challenging aspects of PhD study that have been highlighted in the existing literature. So, Peter, Gemma, Lorna, Nuala and Lin discussed the challenges they faced in contending with academic PhD writing from getting started and 'stuck' to procrastination and situating their own written contribution into the research dialogue. According to the literature (Kamler & Thompson, 2014; Kiley, 2015 and Wisker, 2015) academic writing can be challenging and for George, Gemma and Peter, who had not been in recent study,

they felt particularly challenged by the gaps that they perceived in their subject know-how.

For Carlos, Lorna and Peter the relationship with their supervisors could sometimes be a challenge with each of them struggling to define and manage this. The literature (McAlpine et al, 2012; Cotterall, 2013 and Pyhältö et al, 2015) highlights how PhD students can feel that their supervisors can be intellectually and emotionally absent and unsupportive at times. Confirming this, Carlos felt that his supervisors were 'very hands off', while Lorna had expected her supervisors to provide more 'structured help and advice'. When I questioned these participants further, there was an expectation about the relationship and what their supervisors would provide and as a result these participants were 'more questioning' about their supervisors' availability or the emotional understanding that they would provide.

Another challenging aspect discussed in the literature and confirmed by my findings was a lack by my participants of feeling that they belonged to a community of PhD students. While other studies (Spaulding & Rockinson-Szapkiw, 2012; Zahl, 2015 and Sverdlík et al, 2018) have discussed the value of peer groups in overcoming the isolated nature of PhD study, for the students in my study I found that these communities did not always exist. Instead, for my participants there was a need to create their own networks of support that were often away from the institutional setting.

However, while some of my findings confirmed what is found in the existing literature there were other aspects, I identified in my data, that are either not in these studies or have a more nuanced reading in my work and this was the case in relation to my first research question: In what ways does the family, work and previous study impact on PhD student development? In the following section I will discuss how families can impact on the PhD experience.

8.2.1 The impact of families on the PhD experience

According to Baker & Pifer (2011), Gardner & Gopaul (2012) and Volkert et al (2018), the family play an important role in ensuring the success of the PhD student. Nevertheless, for Breitenbach et al (2019) the term 'family' is ill-defined in these studies. In my study 'family' for my participants encompassed parents and significant others. Many of my participants (eight out of eleven) discussed the supportive role that their parents played for them in their PhD study, and this confirms the research that has highlighted the motivating factor that families can play for those undertaking PhD study. This support manifested itself through parents stating how proud they were of their children doing a PhD or practically by providing help with childcare that enabled my participants with children to focus on their research. However, while this support was encouraging and helpful, four of my participants (Ben, Lorna, Gemma and Lin) noted how tensions were created by their parents' interest in their studies. Lorna discussed how initially she had enjoyed having these conversations, but over time and as she became more frustrated with her research, she began to resent having to account for her progress that resulted in her wanting to close down conversations about it: 'If I speak to my Mum on the phone, for example, and I get "so how's the PhD going?" I'm like "I don't want to talk about it'. While valuing the support their parents provided these four participants each made a distinction between themselves and how their parents were not 'formally educated' (Gemma) that made having conversations about what they were working on or their progress really challenging. Ben commented on what resulted for him from his parents' limited understanding of his research, 'They've been supportive and enthusiastic and sympathetic in the way that you can be if you don't really understand what somebody is doing'.

This perceived lack of understanding was most extreme with Lin and her relationship with her father who even after allowing his daughter to study for a PhD continued to check regularly on her progress. For Lin, who discussed her parents the most, this became increasingly frustrating as her father, who had little understanding of PhD study or her research, became increasingly impatient for her to make progress and to finish so that she could return to China. While parents appreciated the hard work involved in their research and as Ben pointed out had 'the recognition that a PhD is a lot of words', having to account for their progress meant that it became easier not to discuss their work. In choosing to do this, these students were deliberately limiting the details of their research from their parents by actively avoiding conversations about it.

Just as with parents, partners also played a supportive role for my participants with some providing childcare and doing housework that provided time and space for their respective spouses to progress with their research. This finding is in line with the research undertaken by a range of authors (for example, Lucas & McAlpine, 2011; Spaulding & Rockinson-Szapkiw, 2012 and Acker & Haque, 2015) about the role that partners play, with Gardner & Gopaul (2012) stating that for their participants, partners were the most discussed source of support. However, Breitenbach et al (2019) claim that the role the family plays in influencing PhD student success is not well understood with the literature focusing solely on the practical support that the family provides.

When I asked my participants to discuss the support they derived, what I identified was that partners, while supportive, often had very little direct engagement or interest in the research that the participants were doing. Just as with parents in my analysis, I identified that participants preferred not to discuss their research and Jana, Nuala and Lorna actively did not talk about their research with their partners

believing it not to be helpful. Instead, they didn't want the PhD to be a feature of their relationships and valued the space away from their research as Jana commented, 'there are entire weekends when I don't even mention my PhD and it's good to have that break'.

For my participants, while providing support, the family at times was a challenging aspect of their PhD study in that there was a tension caused by not wanting to discuss it or feeling frustrated when family members asked how much longer it would take and when they might finish. This impacted in needing to manage expectations and in deciding to not discuss the PhD further they were effectively 'closing down conversations' related to their research work. In doing this my participants were not able to share their concerns about progress or success with their families and none of them talked about how they had shared either their good or bad research experiences with their families.

In my study, the family did not play an integrated role in my participants' process of PhD study. Rockinson-Szapkiw et al (2014) discuss how 'familial integration' includes how the family has an understanding of what the doctoral student is undertaking and that there is a 'fit between the degree and family values' (p. 196). The detailed and on-going conversations that this type of integration suggests did not exist for my participants and instead they were more isolated in needing to carry their PhD study without being able to share this with parents or partners. Burford & Hook (2019) discuss how aspects of PhD study that might impinge on family life are rarely formally discussed and for my participants this was also the case. However, in my study participants were actively choosing not to discuss their research with their families and instead wanted to keep separate their family life from their PhD student development.

In contrast to other studies (Gardner & Gopaul, 2012; Guerin et al, 2015 and Breitenbach et al, 2019) that have argued that the family is an on-going source of motivation and support, my study identified a more nuanced view of this role. In my research families provided more compartmentalised forms of support through their practical assistance. In relation to the molar and molecular lines, family members did not provide direct support or assistance in my participants' research work, but instead helped them to molecularly adapt in the creation of time and spaces for my participants to undertake their research. In turn this was protective of the molar line of the family, with the housework of cooking and childcare ultimately preserved. However, for parents and partners there was often little understanding or interest in the research that my participants were undertaking or in them providing a motivating role directly in relation to this.

8.2.2 The impact of combining past and existing professional experience with PhD study

Hall & Burns (2009) have noted how some PhD social science students can be situated in a set of professional relationships that they then bring with them when undertaking the qualification. Given this situation and how the impact of pre-entry characteristics such as professional experience is relatively under researched, I wanted to take account of this in my study and the second part of my first research question looks to address how the molar line of employment can impact on the PhD experience.

Four of my eleven participants (Peter, Lorna, George and Greg) came to the PhD with more than ten years of work experience, and all were doing the PhD on a full-time basis and were no longer working. While three participants (Ben, Gemma and Nuala) were combining full-time work with part-time PhD study.

Alexander et al (2014) claim that for those with professional experience transitioning to PhD study can be a challenging process and my findings confirmed this. For these participants there was a sense of comparing themselves to other PhD students and not measuring up to their imagined standards of being a PhD student. In responding to whether they thought they were 'a good PhD student', these participants responded by stating that they did not feel that they were. For Peter being a good PhD student meant you had to be hard working, good at networking and 'incredibly driven' and that often meant coming into the university early and spending 'all day working away'. For Lorna it was about having a routine and sticking to it, 'working on it nine to five' and treating it like a job and while she recognised the value of applying this to her own PhD study, she wasn't always successful in doing this. This was particularly the case for my three part-time participants, where they each felt that they were not doing enough research due to work commitments and as Nuala discussed 'it's the last thing that ever gets done and it is always last minute'.

My study found that those participants with past and current professional experience separated out their lives as PhD students from their working lives and they made a distinction between the work they had done professionally and the very different work and environment that they experienced as PhD students. For instance, Nuala discussed being organised in her home and work life and how this felt different in her research work, which felt less professional and organised. Peter went from performing a professional role with high status and recognition to becoming a PhD student where he struggled to perform in the ways that were recognised. For these participants how they performed in the PhD setting was in marked contrast to how they would perform in the work or home environments. Nuala discussed how in the work and home settings she was assertive, whereas in the PhD she rarely challenged her supervisors or felt she was their academic equal.

Lorna explained how she had gone from being a confident operator at work to being 'passive' and non-committal with her supervisors.

These participants also had a perception that the typical PhD student was younger and had fewer commitments and this set this group at odds with their peer groups and meant for them it was a challenge to fit this mould. As Ben commented, 'my cohort are just a lot younger and have very different lives'. While Gemma noted how her cohort of younger PhD peers regularly organised social events that with her work commitments, she found difficult to attend. As a result, these participants made strategic decisions about how they positioned themselves in their PhD study. So, for those with professional experience studying the PhD on a full-time basis, in order to fit-in they choose to conceal their employment history. Peter discussed feeling that his professional experience was of little value in the PhD environment, and he decided that he would not share further details and Greg choose not to discuss his professional work at all. For these participants they made a distinction between the work they had done professionally and the very different work and environment that they experienced as PhD students. While those studying on a part-time basis made strategic decisions in terms of what events to attend, prioritising what was important and relevant, and distinguishing between what they needed to do and what could be spared.

Generally, my participants with past and current professional identities were more questioning about the PhD study process and had a tendency to compare things they were experiencing in the PhD (such as isolation, a perceived lack of support and uncertainty about the messy nature of their research work) with the more stable nature of their working lives. Unsurprisingly this questioning extended to their own positioning as PhD students and each of them discussed how they had thoughts of not continuing. For Peter this came after he failed his upgrade, Nuala discussed

how she had thought about not continuing 'several times', while for Gemma, 'every week I think about giving it up'.

How these participants discussed their PhD experiences provides examples of how challenging they found it fitting into the academic environment: Peter had a number of conflicts with the institution; Gemma discussed how out of place she continued to feel with her supervisors as if she was 'not on the same planet'; despite writing-up, Lorna continued to struggle with her procrastination and Greg experienced continual issues with imposter syndrome and 'I always feel like I don't know what I'm talking about'.

In their study evaluating PhD student fit, Ward & Brennan (2020) state that this is composed of certain characteristics and with possession of these, individuals are more likely to feel compatibility with their PhD environment and culture. They also suggest that for some students there can be a 'mismatch' caused by the PhD environment, their vocation and the doctoral culture they experience. While the study by Ward & Brennan (2020) does not consider the role played by work, what my findings indicate is that for those of my participants with well-developed professional experience this was a factor in their not easily being able to fit within the academic environment.

In considering PhD student fit, some authors (Gopaul, 2015 and Naidoo 2015) have drawn on the work of Bourdieu in suggesting that for those lacking specific forms of social and cultural capital it can be a struggle in aligning with the habitus of the academic environment and as a result the individual may experience dissonance and be like a 'fish out of water' (Maton, 2008, p. 57). According to Gopaul (2015) scholarships and existing networks of connections act as forms of capital and are desirable to attain as is the development of relationships with academic staff in various settings. While in their theory of doctoral capital, Walker & Yoon (2017)

argue that PhD student positioning in the field of doctoral studies is 'maintained and/or advanced by the quantity and quality of capitals they possess, as well as their habitus' (p. 403).

While helpful, this Bourdieu-inspired research is grounded within the structure/object dualism that positions PhD students as not being able to either shape or resist aspects of their experience. These studies take no account of the forms of capital students might bring that can be converted in their PhD experience. While in contrast, in chapter six of my study I discussed how elements of some of my participants' professional experience, such as organisation and time-management were helpful in aiding their adaptation and in chapter seven I highlighted how resistances in PhD study could be prompted by work experiences outside of it.

For Deleuze & Guattari (1987) rather than forms of capital and habitus, in chapter three I discussed how as part of the concept of molar lines, binary machines work to 'give us a well-defined status' (p. 227). Deleuze (2007) notes how:

There are binary machines of social classes, of sexes (man–woman), of ages (child–adult), of races (black–white), of sectors (public–private), of subjectivations (ours–not ours)

(Deleuze & Parnet, 2007, p. 128)

Binary machines work to preserve the status quo with macro-level institutional rules that are internalised at the micro-level by the individual in how we discipline ourselves with acceptable behaviours and practices. However, Strom & Martin (2016) note how tensions can arise when individuals might want to professionally adapt their practices when it has already been institutionally organised and coded in predictable ways. Thus, the institutionalised status provided by binary machines can make the process of adaptation a challenge and for my participants coming to

PhD study with their professional experience and associated practices this was particularly the case.

Deleuze (2007) continues by stating:

These binary machines are all the more complex for cutting across each other, or colliding against each other, confronting each other and they cut us up in all senses.

(Deleuze & Parnet 2007: 128)

For those of my participants with the status of professional experience this did cut across their attempts to fit into and adapt to the PhD environment and how they responded to what they experienced. For instance, Peter expected the university environment to be similar to the school one and found it challenging to deal with what he experienced, while for Nuala her 15 years of teaching experience meant she felt out of place in the student conference setting and Greg decided not to discuss his professional experience within the academic environment feeling that it had little value for his PhD study.

Baker & Pifer (2015) claim that the fit of the individual in the PhD environment 'is influenced by contexts, individual characteristics, and relationships' (p. 308) and while confirming this, my study found that particular challenges were raised and impacted the fit of those with professional experience in the PhD environment.

8.2.3 How expectations of PhD study can impact on the experience

The third part of my first research question looks to examine how the expectations that PhD students bring to their study can impact on their experience. While Barnett et al (2013) claim that individuals' expectations of the qualification are shaped by a range of factors, Holbrook et al (2014) state that we have little understanding of these expectations, so this part of my first research question attempts to address

what these might be, and expectations here mean the preconceived ideas that my participants had in relation to their PhD study and the role of being a PhD student.

Rather than being the focus of any existing literature, students' expectations of PhD study are usually a secondary consideration of studies where the focus is on what participants experience while undertaking the qualification (Holbrook et al, 2014).

As a result, our understanding of the expectations with which students come to PhD study is especially limited. The literature that does discuss the expectation match or mismatch in PhD study has either focused on the supervisory relationship or on relational support (Moxham et al, 2013). In contrast, my study revealed that participants' expectations of the PhD were informed by their previous experiences of study. So, for five of my participants (Carlos, Lin, Nuala, Peter and Lorna) they valued the structured nature of their postgraduate taught programme and they imagined that this same structuring would be apparent in their PhD studies with more guidance being provided by their supervisors and that they would be less autonomous.

Secondly, there were expectations around the supervisory relationship and specifically this related to what support and advice supervisors would provide. In their study, Holbrook et al (2014) note that students expected supervisors to provide regular support and guidance and in my study my participants imagined that their supervisors would have been more intellectually and emotionally present.

A third area of participant expectation was around being part of a peer community when in their lived experience of the PhD they perceived that there was little relational support when compared to their experience as postgraduate taught students. As a result of not finding these communities, in my study I found there was a need for my participants to adapt and to seek out broader networks of support

that comprised of other PhD students outside their departments, friends and colleagues.

In considering the nature of expectations, Taylor (2002) states that our social imaginary 'incorporates a sense of normal expectations that we have of one another, the kind of common understanding which enables us to carry out the collective practices that make up our social life' (p. 106). O'Reilly (2014) points out that the concept of the social imaginary is complex with different conceptualisations, but broadly speaking, the imaginary is not necessarily a reflection of reality and not necessarily a figment of the imagination. She acknowledges that places come to have shared, collective meanings, mediated through language, symbols, and other significations, and that these meanings have the power to shape reality through the actions of individuals and groups.

In reviewing how my participants might have shaped their expectations of PhD study, I identified that those who had done more research about the requirements of PhD study, through either discussing with others who had undertaken the qualification or through reading, were left with a clearer set of expectations about the various aspects of the PhD including the supervisory relationship and these participants I described as being 'more autonomous'. Whereas in contrast those participants whose expectations were more of a mismatch admitted to knowing very little about what was involved in doing a PhD, as Lorna elaborated: 'So I knew little to nothing about it. All I knew was that you wrote a thesis about your research and you had people to help you'. Similarly, for Nuala, 'I had no sense of what was required in terms of research and training'.

In their educational study, Rujuan et al (2010) found that those students with mismatched expectations of the teaching environment were faced with a higher degree of dysfunction and confrontation that could result in 'culture shock' (p. 217)

meaning either the student relinquishing their idealism or their withdrawal from the system. For some of my participants this lack of match between their expectations of PhD study and the lived experience also impacted in negative ways. For instance, Peter confronted Central University and Nuala did not always respond to her supervisors' communications.

Holbrook et al (2014) state that rarely in the PhD student literature do we get consideration given to the '*a priori* expectations and factors' that individuals bring with them to the qualification or 'if the experience of doing research was much as expected or very different' (p. 331). My study takes account of the part that expectations play and how the mismatch between these expectations and the realities can cause friction and disappointment. Deleuze & Guattari (1987) state that our 'attitudes, perceptions, expectations' (p. 215) are shaped in relation to our molar lines and as a consequence we are left with a 'background of assumptions and traditions that provide a certain experiential traction, orientation and consistency' (Windsor, 2015, p. 160). However, the result of having these sets of assumptions is that adapting to different environments can be a less than straightforward process. So, for those of my participants who came with defined sets of expectations that PhD study would be consistent with their other educational experiences the impact of this was that they found their lived experience of PhD study much more challenging than those of my participants who had a more informed understanding of the requirements of the qualification.

8.3 Adapting to PhD study

In this section I will address my second research question: What role does adaptation play in overcoming the liminality of PhD study? I will examine how my participants adapted in a variety of ways and how it was an on-going process and how these helped with dealing with the open-ended nature of their development. I

will discuss how my participants made adaptations in relation to the assemblage of PhD study and how their molecularity could be aided by their molarity that demonstrates the 'overlapping tendencies' (Merriman, 2019, p. 65) of these lines.

8.3.1 Adapting to the requirements of PhD writing

In chapter two I discussed how the literature has highlighted the challenging nature of PhD writing and how for the PhD student this can necessitate a process of adaptation that involves cognitive shifts in understanding and the crossing of conceptual thresholds (Wisker, 2015). Peter contrasted his skills at writing professionally with the challenges he found in returning to the requirements of academic writing. While previous academic work had been written 'last minute', Gemma contrasted how her PhD writing required much more attention and focus and for other participants their writing demonstrated what they didn't know. In adapting to the requirements of PhD writing, they discussed the necessity of reworking writing, the development of their subject knowledge and the value of getting positive feedback. These findings confirm what the research states about adapting to the challenges of PhD writing and Kiley (2015) claims it can necessitate the crossing of conceptual thresholds whereby students move from 'being stuck' (p. 53) in a liminal space in their understanding to gaining insight with breakthrough moments.

The literature (Kamler & Thomson, 2014 and Wisker, 2015) has tended to suggest that once a threshold is crossed in PhD writing and a chapter is submitted or theory applied, the process of adaptation is complete. However, what I identified from my participants was a more nuanced reading of this process influenced by their professional background and molar lines. For those participants who came to the PhD with extensive professional experience there was a contrast made between the production of professional written work with PhD work as Peter explained: 'one

of the real difficulties I've had is returning to academic writing...even though I've completed a masters, done written reports for Ofsted and written reports for government'. Both Nuala and Lorna discussed how their professional work was often a collaborative process with written reports being produced jointly with other staff and how this contrasted with the solitary nature of PhD writing. For these participants their professional written skills did not have the same value and were not helpful in adapting to the requirements of PhD writing. Rather than being able to convert these skills derived from their molar line of employment, the result for these participants was instead some 'rigid segmentaries' (Windsor, 2015, p. 162) whereby their professional writing 'interfered' with their ability to produce PhD writing. Vasquez (2013) argues that work writing has a very different tone and format to academic writing that requires the writer to set aside one style when adopting the other. For my participants with extensive professional experience this created another barrier that slowed their process of adaptation meaning they continued to struggle even if they were in the last stages of their research. For instance, despite his published research article, Peter discussed the anxiety he felt about his upcoming final year of PhD study that meant needing to write his thesis: 'I do still feel quite intimidated, quite frightened about the next step'.

In my study there were notable points that aided my participants' PhD writing such as getting positive feedback, having an article accepted or having the focus needed for the writing-up stage. These adaptations meant that my participants took more ownership of their writing and the need to operate as an autonomous researcher. Here, students experienced a greater understanding of their research and its underpinning concepts, as well as a deeper appreciation of the language of the discipline and of the research process. However, despite this the impact of participants' molar lines of employment meant that adaptation to the requirements of PhD writing was an on-going process.

8.3.2 The role of social networks in adapting

Various authors (Spaulding & Rockinson-Szapkiw, 2012; Zahl, 2015 and Sverdlik et al, 2018) have discussed the benefits of peer groups in supporting PhD student progression and, in my study, I also found that my participants derived support from sharing their experiences of the PhD with other students and this helped in aiding their process of adaptation. Julia talked of having a reading group where she could share her developing work and get feedback from her peers and how this was 'very beneficial' in progressing her research work. Despite struggling to find a sense of community, Lin used the dedicated PhD space in her department as it provided an opportunity for her to see other students and was helpful in overcoming her isolation. Similarly, for Peter attending the university meant catching up with his peers and this helped with his ability to fit in and meant that the institution did not feel such 'an impersonal place'.

Mantai (2017) states that the literature has drawn 'attention to the value of social networks in researcher formation' (p. 638) and what my study shows is that participants' social networks were more diverse than those mentioned in the literature and these all helped in their adaptation process. For example, some of my participants discussed how their intention of doing a PhD had originated either from academic mentors from previous study or managers in professional settings who had encouraged them to apply for the qualification and how they continued to remain in contact with these individuals. For Gemma this was a manager from her first university teaching job, 'She's definitely been a mentor with my research and has been really supportive', while Jana continued to have regular contact with a previous supervisor who had helped shape her PhD research.

Seven of my participants discussed how it could be helpful to discuss their research with friends. For Peter his friends were a source of general PhD support with them

stating, 'Oh, that's great you're doing that'. However, there was a distinction between friends who were generally supportive and those who took an active interest. Julia explained how her friends were her 'biggest champions' and when she had written a chapter for a book 'they went absolutely nuts'. Having this support of her achievements was valuable for her as it acted as 'a real motivator'. While acknowledging the support that friends can provide, Alexander et al (2014) claims this can also create tensions for PhD students. This was the case for Carlos whose friends questioned his decision to do a PhD. The result of this was that when it came to meeting his friends, he felt a constant need to be positive about his research experience.

In each of my findings chapters networks of connections that my participants had with others played a crucial role in their adaptation to PhD study. For Deleuze & Guattari (1987), connections with other entities are products of rhizomatic networks that are an essential element of molecular lines. While in molar structures there might be limited access to feedback networks, in contrast, assemblages that are predominantly molecular have rhizomic connectivity and social networks. While Mantai (2017) states that we know little about how social networks may play a role in the development of the PhD student, my study has provided an insight into the diversity of these social networks of peers, mentors, family and friends and how these connections all played a part in aiding my participants' process of adaptation to PhD study.

8.3.3 The doing of PhD study

The literature on the PhD student experience has highlighted the value of planning and organisation. van Rooij et al (2019) claim that 'process-related skills, such as planning and time management' (p. 3) are helpful in aiding adaptation and for the Vitae organisation these qualities are embedded into their Researcher

Development Framework (Vitae, 2011). In my study, I had not planned to focus on planning and organisation in the PhD in my questioning, but the photo-elicitation task had drawn my attention to this as an area for discussion.

Three of my participants (Julia and Lorna with images in chapter 5 and Lin in chapter 7) provided photos of their workspaces that included their planning documents and I asked them to discuss these in their interviews. While Gemma provided a photo of her bag and discussed how its contents needed to be organised with her PhD notebooks, professional work and swim kit. For Julia her 'to do list' was crucial in terms of planning and noting her PhD tasks for the day as well as having the satisfaction of being able to 'strike them off' when they were completed and for her this provided evidence of her progression. While in her first interview Lin had discussed how challenging she had found the lack of structure in her PhD, she discussed in her second interview the planning she had developed and the use of two notebooks 'that help me structure my research work'. Having these notebooks had helped with prioritising her work in making it 'more manageable'. For these participants their photos provided visual representation of how important their planning was in progressing their research and enabled a more in-depth discussion of these documents. In this, my experience echoes that of Collier (1979) who found interviews with images were 'flooded with encyclopaedic community information' (p. 281).

This line of enquiry opened-up discussions with four other participants (Jana, Carlos, Ben and George) with the planning and organisational skills that they had developed in their professional experience being used to help them to adapt to the requirements of PhD study. For instance, despite having more limited work experience in a corporate environment, Carlos discussed how during the week he studied from nine to five in one of the university libraries, took a lunch break and

rarely worked at the weekend, so that for him his PhD was like doing 'a job'. Dowling & Mantai (2017) note how for their participants 'working on campus' (p. 202) meant adopting a structured and disciplined work mode and how they acted like employees to get work done. Jana had a plan for her research work that she combined with part-time work and this meant separating those days when she did paid work from the times that she did her research.

While the literature has discussed the value of planning and time-management, it has been short on the details of how individuals practically go about doing this. In my study I found participants while varied in their approaches to planning used forms of structuring informed by their work experiences and this provided them with a way to 'professionalise' how they undertook their research. Again, this is another example of an interconnection between my participants' lines, with the molarity of their employment informing their molecular adaptation to PhD study.

8.3.4 Adapting the home as a space for PhD study

While university space plays a key role in student development (Temple, 2018) we have little understanding of the other sites where PhD study occurs (Dowling & Mantai, 2017 and Burford & Hook, 2019). In my study, PhD work occurred in a variety of sites that ranged from places like cafés and airports to the primary sites of the home and the university. Some of my participants (Peter and Julia) had expectations that being a PhD student would mean having a defined office space at Central University, while others discussed valuing having dedicated PhD spaces in the university where they could work, even if this was shared with others. These expectations that dedicated space would be provided conforms to the Deleuzian concept of logos and an ordered view of space that is cut up in various ways and includes boundaries (Roffe, 2005). In relation to the university, this could mean the division of building spaces into areas of usage for both staff and students. For

Dowling & Mantai (2017) these defined areas in the university campus are important in providing a materiality to the emerging development of the PhD student and in 'providing connection and the building of meaningful relationships, sense of belonging, structure and discipline, productivity, support, skill development, motivation and empowerment' (p. 204).

For participants who valued the institutional spaces they discussed how these were constrained by needing to be shared and these were not spaces with any sense of ownership where work could be left and as a result usage of this space was limited. Not having a university-based workspace was an issue for these participants, while for the others there was a preference to work at home on their PhD study. Either way, for all of them there was a need to set-up a workspace at home that conformed to the idea of this being a nomos space. Nomos is considered to be open, or what Deleuze & Guattari call *smooth space* (1987, p. 478), but this space itself is something that must be created, and my participants needed to be molecular in their adaptation of a site like the home with its connection to the family and in consequence molarity.

The process of adapting the home as a space for PhD study was captured by photo-elicitation in my data collection. I found that participants worked in various places in the home: kitchens, bedrooms or a defined study space. Just as in section 8.2 where significant others helped out in providing time for PhD study, here the home needed to adapt to the requirements of PhD study. This meant that rooms such as the kitchen and bedroom needed to be repurposed for research work, while also continuing as domestic sites. Here again there was another example of the interconnection of the lines and how the site of the molar line of the family (the home) needed to be molecularly adapted to provide a space for PhD study.

While working at home was the preference for some of my participants, my findings also highlight how disruptive this could be with spaces in the home often only functioning as temporary sites of research work. Nuala discussed how she needed to clear her kitchen table of her studies when it needed to be used for family meals. This meant that when study was undertaken in rooms like the kitchen and bedroom, this research work needed to be self-contained, well-organised and easy to clear away. Without a dedicated office space in the home, these 'borrowed' sites for research work were always temporary.

While undertaking research work at home could be a challenge to participants' family role, it could also be disruptive to their development as a PhD student identity. Being based at home for his research work, Greg discussed how his day started with housework, before settling down to 'a few hours of research' before collecting the children from school. For Ben undertaking his research at home meant his was 'easily distracted' by renovation work on his house rather than focusing on his PhD. While the university might offer PhD students a distance from the materiality and commitment of a family role and the ability to perform as a developing PhD student, for my participants the home did not offer this and could be a source of distraction. Lorna discussed time playing computer games and procrastinating at home, while Greg discussed being distracted by cleaning when he could not face another day of research.

Dowling & Mantai (2017) state that the home can carry risks to the researcher identification in that it fosters loneliness and disorientation. This is due to the physical absence of other researchers and conflicts with other-than-researcher roles at home. Dowling & Mantai (2017) discuss how the home can be disruptive to PhD development, 'fitting PhD work into the cracks of one's life presents a challenge to PhD students with conflicting commitments...[that]...can render home

distracting, and even destructive to PhD work' (p. 205). My research confirmed how the home can be unsettling to PhD work and their family role and the need for space and time that the PhD requires meant that my participants needed to negotiate this usage with their families.

While chapter two discussed how PhD student development can be supported by a good supervisory relationship and networks of support, what my research on the spaces of PhD study has shown is how it was equally necessary for my participants to have a dedicated research space. Whether this was in the institutional setting or at home there was a need for adaptation to make this work and as a result this might conflict with their other roles. With a focus on these spaces what my research has visually shown is how some of my participants as PhD students were rarely 'autonomous and carefree' (Burford & Hook, 2019, p. 1344) and could often be encumbered in their studies by other demands such as the family or personal needs.

8.3.5 Compartmentalisation as a form of PhD adaptation

In the literature on PhD student development, various authors have discussed how a process of balancing of roles (Leyva, 2011, Gardner & Gopaul, 2012 and Castelló et al, 2020) occurs in PhD study to ensure individuals are not overwhelmed. Contrary to what this research has suggested, in my study it was less a case of balancing aspects of my participants' existing roles to enable their PhD student development and more about separating or compartmentalising. Rozuel (2011) discusses how it is necessary to isolate and separate certain aspects from the rest of our personality or from our core self. She claims that compartmentalisation is 'a fact of life' (p. 696) and that it is necessary to be able to separate different aspects of ourselves in order for us to help make sense of the world and to cope with the tension that results when the personal conflicts with the professional self.

The process of role separation manifested itself in similar ways for my participants. For instance, for those with professional experience it was compartmentalising this in relation to the PhD, and for those with a family it was compartmentalising this from their PhD student role. For Peter, Lorna, Greg and George the status that they acquired in their professional experience had little recognition in relation to the assemblage of PhD study, so they choose not to discuss their careers. For this group of participants, there was a sense of compartmentalising these experiences as they perceived it did not carry much value for them in the PhD setting. What is also clear from these participants is that they recognised the experience they had acquired in the development of their professional work was not easily transferable, and as a result they modified their language and how they discussed themselves in their departments and with their peer groups. Deleuze states that together with molar lines, binary machines segment and code our lives by providing individuals with a status in relation to what is perceived as having value (Deleuze & Parnet, 2007).

Given how rigidly molar lines position elements within highly organised and concrete spaces, it is unsurprising that for my participants compartmentalisation was a way of adapting to their own molar lines of family, work and the assumptions of PhD study that they had derived from previous educational experiences. Monte (1997) claims that compartmentalisation consists of 'pigeonholing one's life into rigid and exclusive categories' (p. 665). For Pratt & Foreman (2000) compartmentalisation is a response to the fact that we are not oneself but multiple selves (Elster, 1986) and as a result there is a need for us to constantly manage or juggle our various self-aspects to suit social expectations (Rozeul, 2011).

8.4 Forms of resistance in the PhD student experience

Having examined my participants' challenges and adaptations to PhD study, in the following section I will address my third research question: How might forms of resistance enable the progression of the PhD student? In chapter two I discussed how forms of PhD student resistance have been noted in the literature and how this is primarily discussed in relation to the supervisory relationship (Hopwood, 2010; Inouye & McAlpine, 2017 and Nguyet Nguyen & Robertson, 2020). Hopwood (2010) describes PhD students as being subjected to the structured nature of the qualification, rather than being able to co-construct or resist these structures. With relatively few accounts of PhD students shaping their own learning, practices or wider social environments, I wanted to explore whether my participants resisted aspects related to their PhD study.

In chapter seven I discussed my participants forms of everyday resistance and flight lines and a distinction was made between these. In their forms of 'everyday resistance' (Vinthagen & Johansson, 2013, p. 2) I noted how Lorna, Ben, Julia and Greg all internalised these and did not communicate them to those who were being resisted and as a result nothing changed in relation to those elements of their PhD study. For these four participants their resistances did not constitute forms of flight lines that Windsor (2015) reminds us are 'a breaking away from prescribed pathways' (p. 164).

In contrast, for my participants with flight lines these were marked by changes for both the resistor and the resisted. For Carlos, his flight line changed his relationship with his supervisors and rather than him conforming to the view of international PhD students as being 'impressionable and helpless' (Burke, 2006, p. 342), Carlos through his flight line demonstrated his capacity to act independently and to make proactive choices in shaping his supervisory relationship. While confirming the

supervisory relationship as a site of resistance, my study also highlights how for my participants there were other flight lines that had the same liberating effects in relation to PhD study. For Lin, it was the PhD itself that provided her with a flight line from her cultural and familial expectations with her resistance operating in relation to her father and community traditions. Peter's resistance and flight line was in response to the structured nature of PhD study and through a process of deterritorialisation changes occurred for both him and the institution. With her flight line, Gemma resisted the molar structuring of her employment and for Deleuze & Guattari (1987) economic activity is a form of territorial assemblage 'forever proceduring or procedured' (p. 209), with its concrete elements that can limit the possibilities of change. For Gemma undertaking a PhD was a first step in her challenging the limits set on her teaching career by her employer that continued with her flight line in relation to her changed conditions of employment.

For Carlos, Lin, Peter and Gemma, their flight lines demonstrated their self-efficacy and contributed to their motivation and progression. As a result of his flight line Carlos felt more settled with his improved supervisory communication and was able to see a way through to completing his PhD study. While acknowledging how her relationship with her father was an ongoing matter, Lin was more positive and 'less stressed' about her research knowing that her father was more relaxed about its completion. Through his changed attitude towards the institution and the development of his research, Peter felt more positive in relation to his PhD and could begin to see his progression into his final year of study. Gemma's flight line had opened up new possibilities for the development of her PhD study that had previously seemed closed to her with the result that she was looking forward to focusing on her fieldwork. For each of these participants, their flight lines aided their progression and how they viewed their research and when I asked about their future progress in the second interview, each of them confirmed how determined

they were to complete their PhD study with their forms of resistance having played a decisive role in this. Winslade (2009) argues that a line of flight can be an act of resistance to the operation of power, but as my participants demonstrated they are not just any act of resistance but are particularly creative shifts that give rise to new possibilities for living 'that lead to the living of life on some different plane or in some different territory' (ibid, p. 338).

Through the use of the concept of the flight line my study has been able to take account of the resistances and changes in the PhD study of Carlos, Lin, Peter and Gemma and how these aided their progression and meant that they were also agentic in shaping their experiences in the qualification. In defining student agency, Vaughn (2020) notes how it is associated with an individual's self-efficacy in striving for control of their learning activities, with individuals contesting institutional norms and practices, or it acts as a motivational concept that enables individuals to make choices and decisions about their futures. In each of my participants' resistances and flight lines they conformed in varying ways to aspects of this definition of student agency.

However, when I compared the agentic changes that my participants underwent as a result of their flight lines, the nature of these contrasted to what can be found in the literature on how PhD student agency is performed. In relation to this research, Sverdlik et al (2018) notes how departmental structures play a major role in facilitating student agency and this is 'mainly through student socialization and the opportunities that departments make available' (p. 366). So, for instance the study by Porter et al (2018) focuses on the inequality of doctoral education and discusses how PhD students contributed to the diversity work of university departments, but whose own experience of PhD study were not changed. Inouye & McAlpine (2017) discuss how helpful 'seeking out and using feedback' (p. 2) can be in the

construction of a PhD student identity, however, this is not agency that contests institutional norms or practices. Nguyet Nguyen & Robertson (2020) detail how agentic their participants were in navigating aspects of their supervisory relationships; nevertheless, while these PhD students resisted, their supervisors made no changes as a result of this resistance. So, while all of these studies draw on the concept of agency, they do not do so in such a way that it conforms to the notion of it shaping or effecting changes in the PhD experiences for those participants detailed. Instead, agency is presented as operating within the PhD structure and while some changes might take place it is just the students themselves who makes these changes, and it is not agency that alters aspects of the structuring.

In contrast to these studies, in using the flight line with its processes of deterritorialisation, my study has provided examples of where student agency is performed that conforms to the notion of 'acting rather than being acted upon; shaping rather than being shaped; and making responsible decisions and choices rather than accepting those determined by others' (OECD, 2020, p. 2). By taking the flight line to explore forms of resistance in PhD study nuance has been added to the structure/agency argument with the need for changes to happen for both parties that also recognises how PhD students are separable and influenced by their lives outside of the qualification.

8.5 Interconnected lines

As discussed in chapter three for Deleuze & Guattari (1987) all bodies are composed of three types of lines: molar, molecular and flight lines and human life is not a series of points or positions but instead is composed of these three lines that are open-ended, relational and interconnected in nature. The molar line is fixed and as a result can position individuals in rigidly segmented ways and in chapter

five, I discussed how the molar lines of family, employment and education had oriented my participants in particular ways in relation to their PhD study. In contrast to the molar line, the molecular line is more supple in the processes of adaptation and in chapter six I examined how my participants adapted through a variety of ways to the structured assemblage of PhD study. The flight line provides a way for bodies to be liberated from over-determining systems and in a chapter seven I discussed how four of my participants resisted particular aspects in relation to their PhD study and as a result found new possibilities. In chapter one I discussed how in some of the PhD study literature, the qualification is set out as a linear process and the value of using the lines has been in demonstrating that the experience is far from being a straight-forward trajectory. For my participants exploring the PhD experience with the use of the molar, molecular and flight lines show that their experience did not evolve as a linear pathway.

Rather than these lines being individual aspects of an assemblage they are 'co-implicated' (Windsor, 2015, p. 158) and in my findings chapters the interconnection of these lines has been used to map my participants' student experience. For instance, my participants' existing professional experience, their family roles and expectations of PhD study worked as molar lines that at times created barriers to adapting to PhD study and at other times provided ways of adapting. Deleuze & Guattari (1987) state that the two lines are 'inseparable...because they coexist and cross over into each other...the two segmentarities are always in presupposition' (p.213). Rather than presenting the molar and molecular lines as opposed binary forces or worldviews that are in tension, what my findings chapters have demonstrated is the overlapping tendencies or 'segmentations' of these lines, with my participants responding either to the structured assemblage of PhD study or their own molar lines. Rather than being barriers, there were also times when my participants' molar lines of work and family were essential in aiding their

molecularity with the professional skills of planning and time-management being adapted to aid progression. In adapting my participants also drew on their networks of existing support that were derived from their families, work experiences and those involved in their previous study. In addition, the molar line of the family enabled the creation of space and time for my participants in undertaking their research work.

Nevertheless, what my findings highlight is that there were also times when my participants' adaptation was made more challenging through their own molar lines that they brought to their PhD study that shaped their assumptions. For example, this was a feature in some of my participants' expectations about their supervisory support in imagining that they would have had a closer working relationship and then struggling to adapt to the reality. This expectation mismatch resulted in participants either not being in contact with their supervisors for protracted periods of time or generally not knowing how to communicate with them when they did. Rather than responding to this, these participants continued to keep their supervisory relationship more rigidly structured with their response remaining unchanging and as a result it was also more molar. These participants did not seek 'new opportunities' (May, 2005, p. 149) to re-set things and be more molecular in their approach. Instead, their process of adaptation was to continue to structure the relationship this way.

While there were forms of molecular adaptation, there were times when it was necessary for some of my participants to go further in their PhD experience through the use of their flight lines. Usher (2010) claims that lines of flight disarticulate the consistency of relations between and among molar structures of practices and effects, 'opening up contexts to the outsides and the possibilities therein', breaking down unity and coherence and in so doing 'a line of flight is a bridge to a new

formation' (p. 71). For my participants, their lines of flight were a gradual, insistent process of identifying ways forward in overcoming tensions that involved their communication, drawing on rhizomatic networks of support as well as persistence that resulted in 'different experiences of "becoming"' (Potts, 2004, p. 21) in their PhD experience. That said, flight lines do not function in isolation to the molar and molecular lines and all three are interconnected and for my participants the resistance they exercised was in response to their own molar lines of family, professional experience or mismatched expectations of PhD study that required more than molecular adaptation. Nevertheless, Deleuze & Guattari (1987) remind us that 'escapes and movements would be nothing if they did not return to the molar organizations to reshuffle their segments' (p. 215) and for my participants the changes that resulted from their flight lines became part of their own molarity. For instance, Carlos discussed how as a result of his improved supervisory communication he needed to ensure that he was clear in terms of what he needed from them and if he was unclear then he needed to check. While Lin's father might have been more relaxed about her completion of the PhD, she needed to keep in regular contact with her family about her progress and whether her study was having a detrimental effect on her health. While having the agreement of her employer for her to be able to take a sabbatical, Gemma noted how this may get withdrawn or it may end-up being for less than a term with her fieldwork being compromised

Of all of my participants Peter in particular exemplifies how the molar, molecular and flight lines are interwoven and mutually influenced aspects of his PhD experience. As a mature student he brought his well-developed professional experience as well as a set of expectations in undertaking the qualification. In beginning the PhD, he found that his professional experience had little value and this status was not recognised and as a result, the molecular adaptation he was

required to make in response to his molarity was more of a challenge. However, this also provided him with a background of skills that enabled him to reach out to other students and through his work as a student rep he was able with his flight line to resist some of the structuring that he found within the university environment.

8.6 Forms of difference in the PhD student experience

In chapter three I discussed Deleuze's ontology of difference-in-itself and how while things might be conceived as having shared attributes that means they can be labelled as being of the same kind, in his conception individual differences are privileged. So, rather than theorising how individuals might be grouped, for Deleuze it is more important to explore the specific and unique development or 'becoming' of each individual. While my participants had a commonality in undertaking the PhD in social sciences in one institution, each of them developed in unique and specific ways. Thus, the conception of difference-in-itself provided me with a starting point in exploring these ways of differentiation in my participants' experiences of the PhD qualification.

In chapter five I detailed how my participants drew on different forms of support from their families. For instance, Jana's partner provided her with a space away from thinking about her PhD study and her research did not get discussed, while for Ben his wife was interested in his study to such an extent that 'she's probably the world's second leading expert on my subject'. Nuala was particularly supported by her husband who booked her flights to London when she had supervisions and sorted childcare, whereas for Greg he continued to be responsible for this while his wife worked full time to pay the mortgage. While there was some commonality about my participants expectations of the PhD such as around imagined support and having a dedicated workspace, there were then differences in how they responded when these things did not materialise. For instance, participants each

drew on differing networks of support and adaptations were made that combined working at the university, home, at airports or in cafes.

In chapter six I examined how my participants underwent molecular adaptations and all of my participants did this in different ways with some aspects of PhD study causing more of a challenge depending on the individual and their molar lines. The adaptations required in undertaking academic writing provides a good example of differing participant responses. Gemma discussed her attempts at engaging with writing support groups, for Lin it was her procrastination in relation to her writing, Peter explained how he sometimes failed to understand the requirements of writing at the PhD level, while Greg had written 'seven draft chapters' of his thesis by the end of his first year of PhD study.

While there was some commonality in how the supervisory relationship could be resisted by a number of my participants in chapter seven, the forms this took differed from internalised resentment to how Carlos directly challenged his supervisors. How and in what ways my participants resisted through their flight lines was highly individual and much depended on their background and motivations for undertaking PhD study.

The diversity of my participants that I discussed in chapter four also provided forms of difference in how the PhD was experienced. For example, those mature participants with professional experience reacted in different ways to the PhD environment so that Peter felt that his work status went unrecognised, while Greg was more than happy to move on from his social work career and chose not to discuss his work with his peers viewing his PhD study more favourably. There were some gender differences in my participants' PhD experience with some of the younger females reporting more engagement with the academic environment through their conference attendance, teaching and publishing; however, this

differed between individuals depending on their motivation and connections. Similarly, while all of my international participants were engaged with the university on a regular basis, these were differing forms of engagement. So, while Carlos sought out student networks in the university, Lin established departmental connections that meant she was offered the opportunity of working on two research projects.

For Deleuze the genealogy of an individual lies not in generality or commonality, but in a process of individuation determined by actual and specific differences and by taking a diverse group of participants I was able to explore some of their movements of self-differing as well as how they differed amongst each other that has added a further level of understanding to the PhD student experience.

8.7 Becoming other in the PhD experience

In *A Thousand Plateaus*, Deleuze & Guattari (1987) explain that the process of becoming is not one of imitation or analogy, it is generative of a new way of being that is a function of influences rather than resemblances. Becoming then is the movement through unique events that produces experimentation and change. As discussed in chapter three, Deleuze uses the term becoming to describe the continual emergence and evolution of relationships that ultimately constitute events. In relation to the PhD student experience, Barnacle (2005) notes the temporal dimension in the concept of becoming with a 'transformation over time: a becoming other than what one is already' (p. 179).

Taking up the notion of continual transformation over time, in chapter three I discussed how Lee (2011) claims that in undertaking doctoral study there is a 'Deleuzian sense' of 'becoming other' that involves both a 'not knowing' and an unlearning in order to come to know differently (p. 159). Taking inspiration from Lee's study, in my research I looked to take account of and explore the processes

of becoming other that my participants demonstrated through their differing approaches to the challenges, adaptations and resistances that were part of their PhD experience. As discussed in chapter three I was looking for instances of my participants becoming other where they might have acquired new knowledge or ways of doing research, or when they had positive interactions in academia or an increased confidence in their progression.

In chapter six my participants' forms of molecular adaptation in relation to the requirements of PhD study provide reflexive examples of their becoming other. For example, Julia, Peter, Gemma and Greg all discussed having positive interactions through teaching, publishing articles and giving talks at conferences that all aided their development as PhD students. However, while my participants might gradually find success in one aspect this needed to be balanced against the struggles that they faced in other areas. For instance, the process of academic writing was a particular ongoing challenge for all of my participants, so just as it was an issue for Gemma in the first year of her PhD study, so it was for Lorna and Jana who were in the writing up stage. So, the becoming other of my participants was made up of a combination of aspects of PhD study and much was dependent on an individuals' background and molar lines. This confirms Massumi's (1992) claim on how becoming is 'directional (away from molarity), but not directed (no one body or will can pilot it)' (p. 103), with becoming happening in the middle of molar structures and this was the case for my participants in some aspects of their becoming other. Lee (2011) notes how for her participant there was a gradual 'seeping' in their development as a doctoral student and how this was a 'slow, gentle, organic process' (p. 164). However, while confirming Lee's view on the emergent nature of doctoral student becoming, what my study suggests is a more nuanced reading of the experience with more efficient progression in some areas of PhD study combined with protracted attempts at adaptation in other aspects.

Just as with molecular adaptation where there could be a slow emergence, so too the changes that resulted from my participants' flight lines could take time in enabling their progression and becoming other than what they were. For Carlos his interactions with other PhD students meant that his supervisory relationship became other than what it had been when it was unclear what the expectations were that his supervisors had of him. Lin's relationship with her father changed through her flight line and as a result he became more supportive of her desire to undertake PhD study. For both Peter and Gemma their flight lines also meant that their interactions became other than what they had been in relation to those bodies that they had initially resisted. For each of my participants their flight lines enabled them to become other than what they were either in relation to, or as directly part of their PhD study.

For all of my participants their development was a fraught and ongoing process of learning how to know and be, differently. Barnacle (2005) argues in her article on doctoral becoming that knowledge is never simply acquired, but only 'reached proximally' (p. 186) and is always ephemeral and incomplete. While my findings confirm this, what my study indicates is that it's not just the acquisition of knowledge but the whole of PhD study that is an ongoing process of becoming other.

Summary

This chapter has considered my findings and responded to my three research questions and instead of conceiving the PhD experience in a linear way, my research has highlighted how convoluted and interconnected it was for my participants. Rather than focusing solely on how students are challenged during the course of their qualification, my study has instead focused on how the family, professional experience and expectations of PhD study all impacted in different ways on my participants. I detailed how there could be a mismatch between

expectations of PhD study and the lived reality and how the adaptations that my participants made were part of an ongoing process and how development in one area was not necessarily matched by progress in a related area of research work and how this confirms that the doing of social science research can be a 'messy process' (Clark et al, 2007). I then looked at the role played by forms of resistance in PhD study and how some of these aided the progression of those students involved. Finally, I discussed how through the use of molar, molecular and flight lines my study has been able to demonstrate how PhD study is far from being a linear process, before going on to examine my participants' forms of differentiation in their development and how for all of them the qualification was an ongoing process of becoming other.

Chapter 9 Conclusions: Drawing my study together

9.1 introduction

In this final chapter I start by summarising my thesis and revisiting my research questions and the contribution of my study. Following this, I discuss the value of conceptualising the PhD student experience as an assemblage of interconnected lines before exploring the implications of my study for PhD applicants/students, supervisors, institutions, supervisors and the Economic & Social Research Council. Next, I examine the value of my data collection approach and consider again my own positionality. I then set out the limitations of my research and suggest some thoughts on possible areas of future research. The concluding section presents some final thoughts about my research study.

9.2 Summary and restatement of the research questions

This thesis has examined the experiences of a group of PhD students and their challenges, adaptations and resistances. Rather than focusing solely on the challenges resulting from undertaking the qualification, my study has considered how aspects of my participants' backgrounds challenged, as well as aided, their progression. Given the messy and non-linear nature of PhD study this research highlights how adaptation is a continual process and how at times forms of resistance were a part of the experience. My study takes the concepts of the assemblage and the molar, molecular and flight lines as a critical lens with which to examine those interconnected aspects that make up the PhD student experience. I have been guided in this study by my three research questions:

1. In what ways does the family, work and previous study impact on PhD student development?
2. What role does adaptation play in overcoming the liminality of PhD study?
3. How might forms of resistance enable the progression of the PhD student?

In the first two chapters of this thesis, I presented the background to my research study, considering my motivations and the gaps in the literature that have resulted in a narrow reading of the PhD student experience. In chapter three the concepts of the assemblage with its interconnected lines, rhizomes, nomos and logos provided a framework for my study and were employed as analytical tools to examine the PhD student experience. In chapter 4 I set out the methodological framework and methods for my data collection. Over the course of a year, I collected photographic evidence and conducted two sets of semi-structured interviews and there were eleven diverse participants with a range of ages that reflected a gender balance and who were a mix of home and international students at different stages of their research.

My intention in this study was to explore the accounts of my participants in order to gain an understanding of their experiences of PhD study. At the heart of the thesis (chapters 5, 6 and 7), I analysed these narratives examining the impact of their backgrounds and expectations of PhD study as well as their ongoing adaptations and forms of resistance in response to the qualification. Through my findings chapters I have explored by research questions and in the final part of the thesis I drew this together to answer my research questions in a discussion that has highlighted how aspects of my participants' backgrounds can both challenge and aid adaptation. Secondly how social networks, planning, organisation, the provision of space at home for undertaking research and compartmentalisation all played a role in enabling my participants to adapt to PhD study and helped in overcoming the liminality. Finally, given that progression in the qualification is a complex and multi-faceted process, in answering my third question I discussed how resistances were a part of the PhD student experience.

9.3 Findings and contributions to knowledge

As discussed in chapter one, the primary focus of research on the PhD student experience has been with younger participants often in science, technology, engineering and mathematics disciplines and limited research has been undertaken with more diverse groups of social science PhD students undertaking the qualification. My study addresses this gap in our knowledge with a broader range of students at different stages of the PhD with their experiences of the qualification. The four key areas of contribution are now discussed:

i. Background plays a key role in PhD progression

I am using the word background here as a form of shorthand to cover some of the existing aspects of my participants' lives that they brought to their PhD study and that I critically explored with them. In my first research question, conceptually informed by Deleuze & Guattari's examples of molar lines, I focused specifically on how the family, work and expectations from previous educational experiences impacted on the PhD development of my participants. In each of my three findings chapters, my research has shown how background can be both challenging as well as helpful for my participants in adapting to the requirements of PhD study. For example, while other studies have found the family can generally be an ongoing form of support, in my study I found a more nuanced response where parents and significant others did not provide direct support, but rather they helped with the process of adaptation that involved the creation of time and space in the home that enabled my participants to undertake their research. Similarly, when it came to those participants with existing and ongoing professional experience, while this could prove problematic in adapting to PhD study, it also provided a template for these individuals in professionalising their approach to undertaking research. Several of my participants stated that they viewed the various stages of their

research as being like a process of project management that they might have experienced in a work context. Previous educational experiences of postgraduate study, with more structuring, supervisory support and peer networks, could be destabilising for participants when they expected that these would also be a part of their PhD study. In chapter six, other aspects of my participants' background experiences were explored that helped in their process of adaptation including planning, organisation and establishing a routine of home working. Rather than these things being recounted as part of their PhD training my participants discussed how these were skills drawn from their own work experience practices and adapted for use in their research work.

In contrast to the literature, which states that PhD student support is often derived from supervisors and peer groups, in my study participants also drew on their rhizomic networks of support outside of their PhD. These pre-existing networks comprised of friends, colleagues and mentors who my participants drew on as sources of support and guidance in progressing their PhD development. In chapter seven I explored how family and professional backgrounds could also be something that were resisted, with Lin undertaking the PhD in resistance to her family and cultural expectations and Gemma challenging the molar structuring of her employment in order to create more time and space for her research work. Thus, the family, work and educational experiences functioned as a territorial line at times that enforced the molar structuring of my participants' backgrounds and made adapting to PhD study a challenge, while at other times the molarity of family and work was helpful in aiding adaptation and sometimes it was also something to escape from.

My study has highlighted how the PhD is a multidimensional experience with my participants drawing on their backgrounds, the influences of previous educational

experiences and the support of others. Rather than it being a self-contained, dyadic relationship that only affects the PhD student and the supervisor, my participants' PhD progression drew on a range of actors and life experiences. In their work on the student experience, Gale & Parker (2012) discuss how transition throughout higher education is part of 'a perpetual series of fragmented movements involving whole-of-life fluctuations' (p. 737). For my participants, their PhD experience also followed this pattern and how their development came in relation to other aspects of their lives. With a focus on the background of a diverse range of participants, my research has been able to take account of PhD student development in different contexts, such as home to university to work. This is in contrast to much of the research that tends to focus on those undertaking the PhD in similar contexts, such as studies that explore how particular groups underrepresented in the academy or those undertaking the qualification in the same discipline experience the qualification.

In chapter two I noted how McAlpine & Lucas (2011) claim that the past experiences of PhD students are 'relatively unexamined' (p. 695) in the literature and this gap has continued to remain in our understanding. However, by taking a focus on aspects of the backgrounds of my participants, my study has begun to address some of these aspects of past experiences and how these can affect the present intentions of those undertaking PhD study and how backgrounds can impact both negatively and positively on the progression of those undertaking the qualification.

ii. The becoming other of the social science PhD student is a continually emergent process

In chapter one I discussed how some of the literature on PhD study positions the qualification as a series of stages or milestones that the student navigates in a linear process of development. This is research that focuses on how well or

otherwise PhD students navigate institutional norms and structures and how well they deal with their transition through PhD study. This is a straight-line, time-bound, chronological view of PhD development which focuses on the student acquiring and developing the skills and capital in order that they 'fit in' with the prevailing norms and practices of the requirements of PhD study. This view of PhD development is prevalent in the socialisation conceptualisation of the experience. The identity development conceptualisation of the PhD student experience places more emphasis on the individual and is based on the presumption that the student develops through key moments or critical incidents and aligns their progress with changes in a series of transitional movements from one identity to the creation of a PhD student identity. In contrast, my research has shown that the process of PhD student development is much less stable and more emergent, that it draws on existing identities and is temporarily stable even though things are always changing and becoming other than what they were.

Conceptualising my participants' PhD student development as a process of becoming other takes account of its continuous liminality even when progress is made by the individual and recognised by others, for example by receiving positive feedback. As discussed in chapter two, becoming is a key Deleuzian concept and is based on a radically different set of ontological presumptions. A line of becoming then has neither a beginning nor an end. For my participants the PhD experiences that they recounted exemplified this notion of becoming other with the qualification drawing on various aspects of their past as well as their current lives outside of the qualification and where their development had no beginning as such or an obvious end point. Instead for my participants their PhDs were experimental practices of self-differentiation with changes being continuous and emergent.

The notion of becoming other also draws on my previous finding and the role played by background. For Deleuze, the concept of becoming views past and present not as two successive moments in linear time, but as two elements that coexist and this was seen in how my participants drew on their backgrounds in aiding their development.

iii. Resistances as an aspect of PhD study

In chapter seven I used the term *resistance* to describe how my participants reacted at times either directly to PhD study or to aspects of their molar lines related to undertaking the qualification. For Thomas & Davies (2005), 'resistance is understood as a constant process of adaptation, subversion and re-inscription of dominant discourses' (p. 687) and given the challenges in the PhD and the sometimes difficult processes of adaptation, I stated that forms of resistance can be an inevitable response. Resistance in the PhD student experience is a relatively under-researched aspect of study and the literature has tended to highlight how forms of resistance coalesce around the student and their supervisory relationship. For my participants, they also recounted their refusals to accept or comply with aspects of their supervisory relationship and how they would ignore or not be in regular contact or would insist on taking a particular approach in their research that was in opposition to the wishes of their supervisor.

While constituting forms of resistance, in chapter seven I stated how these examples of supervisory ignorance did not result in change being affected and by using the line of flight I was able to make a distinction between 'everyday' or low-level forms of resistance in PhD study and those instances where changes resulted for both parties that has helped to broaden our understanding of those other aspects in the PhD that get resisted. Using the line of flight with its process of deterritorialisation, I demonstrated how changes resulted in the relationships that

Carlos had with his supervisors, Gemma with her employer, Peter with the institution and Lin with her father. The value of using the line of flight as a measure of the efficacy of resistance is that both assemblages are required to change and as such it is resistance with an outcome and in this way can be seen as forms of agency. For Thomas & Davies (2005) resistance should be seen as 'a multidimensional, fluid and generative understanding of power and agency' (p. 700) and valuing small instances of resistance at the micro-level that chip away at power structures and this was the case for my participants and their lines of flight.

In the literature, agency in response to negative PhD student experiences is framed in multiple ways. For instance, scholars have indicated that students can be agentic in choosing to leave PhD study if the environment does not support their success (Burt et al., 2018). However, this is in contrast to the research that discusses the agency of PhD students who take individual and collective action to change the hostile climates of their departments and institutions (Porter et al, 2018). This later research highlights the changes that happen to both resistor and resisted and by methodologically using a line of flight to examine my participants resistances I was able to identify those examples of resistance that constitute forms of agency in the PhD student experience.

iv. Applying the concept of the assemblage to the field of PhD study

Applying the concept of the assemblage has enabled my study to take account of the emergent characteristics of the PhD student experience of my participants. Assemblages, as conceived by Deleuze & Guattari, are 'complex constellations of objects, bodies, expressions, qualities and territories that come together for varying periods of time to ideally create new ways of functioning' (Livesey, 2010, p. 18). This change may be physical, psychological, emotional or social and as elements

are affected in their capacities to affect and be affected also alter and each element is part of multiple other assemblages.

While other literature has tended to focus on one aspect of the PhD student experience, such as the challenges faced during the qualification, using the concept of an assemblage with its interconnected lines has enabled this study to take account of a range of aspects that impact on the experience such as background, life outside of the PhD and the nature of how participants experience the qualification. The concept of an assemblage has provided a way to capture how things came together in different configurations for my participants during their PhD experience. Sometimes these things could appear momentarily stable such as work on a conference presentation or for the submission of a chapter to their supervisors only for these or other things to appear less so when faced with other aspects of PhD study. The use of an assemblage highlights the complexity and interconnected nature of PhD study that mixes time, space and the development of skills that are forged in and by various connections. The use of an assemblage has enabled an identification of the shared characteristics of the PhD student experience that include: the key role played by the family, professional experience and educational expectations, the process of continual adaptation, the value of social networks, the requirement of the home to be a place of PhD study and the occasional need for compartmentalisation. Each of these factors worked as singularities that found different articulations with each participants' development.

As discussed in previous chapters, all assemblages are composed of molar, molecular and flight lines and it is these lines of connection that I used to explore my participants' experiences of the PhD. These lines have provided an exploration of participants' lives before the PhD, the process of adapting their own assemblage to the institutional assemblage of PhD study and how other assemblages were

resisted as well as how they escaped their own assemblage. Livesey (2010) states that the result of a productive assemblage is 'a new means of expression, a new territorial/spatial organisation, a new institution, a new behaviour, or a new realisation' (p. 18) and there were aspects of all these forms of change for my participants in their PhD experiences.

9.4 The implications of my study on the field of PhD study

My thesis has examined the PhD student experience with a very particular, diverse set of participants and in this section the implications of my study are considered, and recommendations made in relation to four specific audiences: PhD applicants/students, supervisors, higher education institutions and the Economic & Social Research Council as the main funder of social science research. The organisation of PhD study in the United Kingdom is made up of a connected system of policy makers, funding bodies, universities, doctoral centres, supervisors, support staff and the students themselves. So, in making the following recommendations I need to highlight how a suggestion for one audience might also be applicable to another group. For example, while suggesting that institutions need to have clearer forms of communications about the lived experience of the PhD student, this could also apply to some of the other groups detailed below.

a) Implications for the PhD applicant/student

The last interview question I asked my participants was, 'given what you have learnt about PhD study would you still have applied'? All of them stated that they would have done, however they also stated that they wished they had been better prepared and from my findings I have noted a range of aspects that should be considered by an applicant before applying and these include: preparing family life for PhD study, researching doing research and ensuring applicants have an

informed understanding of the qualification and have established social networks that they are able to draw on.

My study has highlighted the impact of the family on those undertaking PhD study and the role they played in providing time and space and this was crucial and needs to be considered by applicants. Breitenbach et al (2019) note how we have a limited understanding of the role that the family plays for the PhD student and for my participants some of the support involved reducing the isolated nature of their study and being able to discuss their progress even if significant others did not always understand or could have helped. Applicants and PhD students need to be able to discuss with their families what the requirements of PhD study are and the support they might need from significant others.

While much is dependent on the personal circumstances of the applicant, my study has stressed how having time and space to focus on research was a key requirement for my participants. So, for those undertaking a PhD in the social sciences there is a need for the creation of a quiet space in the home or a local library as well as the acceptance that for the next however many years, their PhD will be a consuming focus that will require more and more time as they progress in the qualification.

A number of participants wished they had familiarised themselves more fully with the expectations of PhD study and had talked to recent graduates. Potential applicants should be recommended to spend time doing this as well as not rushing into the process. Going straight from a postgraduate taught programme to a PhD was not always the best step for those of my participants who did this. Accessing information on the lived experience of being a social science PhD student can be helpful. Companies such as Angel Productions (2015) provide a range of videos on the 'good doctorate' that showcase the issues that can arise and are a good, free

starting point for both applicants and PhD students. Similarly, edX (2015) with Inger Mewburn have developed an online module *How to survive your PhD* that provides advice and guidance on aspects of undertaking the qualification. Universities should encourage applicants to access these types of materials and talk to others undertaking PhD study during the application process.

During the interview process none of my participants were asked in detail about what they knew about being a PhD student and what seems to have been more critical was the quality of their research proposal. No consideration was given to home-life, the support that participants could draw on and whether they have sufficient time and space for undertaking the qualification. Given the challenging nature of PhD study, it would seem critical that applicants consider these things and that they are covered in the application/interview process.

Having established networks of support was critical for the development of my participants and in contrast to the literature these were primarily based on social connections outside of their PhD institution. These networks were a mixture of mentors, previous supervisors, academic staff in other universities, friends, colleagues and those who had previously undertaken PhD study. Having these established support networks to draw on for different types of support is essential and applicants and existing PhD students need to ensure that these are either in place before starting the PhD or can be developed during it.

b) Implications for supervisors

As discussed in chapter two, much of the focus of the literature on the PhD student experience has been on the supervisory relationship and the crucial developmental role that the supervisor plays. While the 'secret garden' (Parks, 2008, p. 1) approach to supervision has been replaced with a more open and regulated one, issues continue with supervisors now not just guiding a students' research project,

but also needing to be knowledgeable about a range of support services (HEFCE, 2018).

All of my participants commented favourably on their supervisory relationship, with the main issues being around positioning and who was responsible for various aspects of their PhD development. In other words, who was in control of what. There were issues around communication and for some students the relationship not being suitably close at times, while for some participants there was a preference for not being in regular contact with their supervisors. Carlos was the most challenged by his supervisory relationship as he had expected that they would have provided him with more support and direction for his study.

Despite the diversity of my participants, little account was taken by supervisors of the background of their students, what professional experiences they might have brought and how this may have impacted on their PhD development. For supervisors to take account of this would have helped some of my participants such as Peter who wanted to have his professional experience acknowledged. However, in a survey undertaken by the UK Council for Graduate Education in 2021, two thirds of supervisors felt they needed more support and training in acquiring the interpersonal and intercultural skills in order to support PhD students from diverse backgrounds.

The most notable feature of my participants' supervisory relationship was around communication and positioning and it took time for students to feel comfortable and confident and it was an ongoing aspect that needed continual work. What seemed to make a difference was how much participants took responsibility for their PhD and for their supervisory meetings, by setting agendas and planning ahead. Much of this form of professionalising the relationship came down to the student rather than both parties having discussions about the evolving nature of the relationship

and who was responsible for which aspects. Taking opportunities to review these things in a more formal way would have been beneficial and is something that could form part of the annual review process for the PhD student.

There were two areas where supervisors made a real difference for my participants: in providing regular feedback and keeping in contact. Basturkmen et al (2014) note how important supervisors' constructive and detailed feedback is to successful progression in the PhD and that it characterises good research supervision and this was the case for my participants. The isolated nature of the PhD is a particular feature of the social science PhD experience (Dowling & Mantai, 2017) and the value of providing feedback and remaining in regular communication are important ways to help overcome some of this and needs to be formalised into the supervisory relationship.

For some of my participants there was a need for more practical assistance in PhD study, while for others it was more about providing academic guidance. Given that there is a requirement to provide both of these things at different stages of the PhD, there is perhaps a value for supervisors in devoting time in supervisory meetings to the discussion of research progress and its wider impact on the individual. So, rather than the monitoring of PhD students being solely about where a student is in terms of their thesis progress, it should also include checks on how students are coping with their research. Ensuring the wellbeing of the PhD student is becoming an increasing concern for higher education institutions (Levecque et al., 2017) and HEFCE (2018) states that students need to feel that they are part of a culture that fosters this and there is an expectation on supervisors that their role involves a duty of care with this being a feature of supervisory meetings. However, supervisors will need training and support in being able to offer these levels of support as well as an appropriate workload allocation for the time needed for this work.

c) Implications for institutions

As a result of increasing regulation and 'institutional management' (Kehm, 2018, p. 109), over the past twenty years institutions have provided an increasing range of skills training that has been particularly important for social science PhD students as this offers another space for peer interaction. While not being a direct focus of this study, my participants did discuss their skills training and the provision of support services with some of them, such as the part-timers, struggling to find the time to always attend what was provided. While most found this training and support helpful, for those participants with professional experience they repurposed some of their work skills to professionalise their approach to undertaking research work with planning, organisation and time management strategies.

As discussed in chapter five, most of my participants had little understanding of the expectations of PhD study with some admitting to either not having done much research or to have not spoken widely to others who might have undertaken the qualification. Given this gap in knowledge, prior to the interview stage potential supervisors or third parties in the institution should be encouraged to have these more detailed discussions about expectations of PhD study, establishing what knowledge students already have about the qualification and how previous study differs markedly to what they will face in PhD study. Once enrolled, it would be helpful for supervisors to have discussions about students' knowledge of the academic environment and where support can be found, and this can be incorporated into a Code of Practice for what institutions should provide and cover with their PhD students within the initial stages of the qualification. Several of my participants stated how they felt that there was an assumption on the part of their supervisors that some of this information was known by their students, with a

number of them discussing how they were left to find out for themselves rather than it being part of supervision meetings.

In supporting their training and development, some of my participants felt that a more tailored approach would be helpful as some felt what was provided was too generic. Weber et al (2018) state that skills training should follow an individual needs analysis, initiated and undertaken by the PhD student with formal support at the department and institutional level and institutions should commit to regular formal reviews of development as part of PhD training. Additionally, given the potential for peer learning in PhD study in the social sciences, a number of my participants noted how few opportunities existed for this, and again this should be a consideration for a future area of training development.

A number of my participants noted how valuable the process of being interviewed for my study had been and how there had been no opportunities in their PhD study to do this type of reflective work. Despite being social scientists with a number of them having detailed research plans, none of my participants kept journals or diaries reflecting on the different aspects of their research experience. Engin (2011) notes how valuable this process can be in enabling the PhD student to consider their progression and a focus on this reflective aspect of research would be a beneficial addition to the training provided.

While supervisory relationships were generally good for my participants, a number mentioned how they would have found a buddy system helpful to their development. This was described as someone who is not their supervisor, but a member of institutional staff with whom they could discuss their progress or issues in their PhD study. This buddy system would provide a space away from the supervisory relationship where issues could be raised and discussed. The benefits of these buddy systems have already begun to be noted (BESA, 2021) and despite

the potential for supervisory conflict with these systems, institutions should be encouraged to consider this additional support service.

The isolated nature of my participants' PhD study with home being the predominant site for research work were features of my study. Temple (2018) notes how for students the university space has a meaning that should not be undervalued, however the provision of workspaces for PhD students is also an ongoing issue for universities. Some of my participants had particularly unrealistic expectations of what might be provided in terms of office space, but as a result of being home based they all experienced a sense of disconnection from the institution with some rarely visiting. A feature of the pandemic has been an increasing delivery of teaching, training and supervisory meetings online and going forward, institutions need to complement the face-to-face sense of social belonging with virtual equivalents in helping to overcome some of the issues that home working PhD students face.

Having reviewed institutional research degree marketing webpages, much is made of the features of the qualification with information on funding, events and training. However, little mention is made of the PhD student experience and what this might consist of. Taking my participants' absence of knowledge of the qualification as a guide, having website sections that present aspects of the lived experience of the PhD student in different disciplines would have been helpful for them. Institutions should be encouraged to provide tailored case studies for a range of student types on what individuals have been challenged by in their PhD experience and how they adapted as a way of providing a more detailed overview of the experience that might help applicants to have a more informed view of the realities of PhD study.

d) Implications for the Economic & Social Research Council

The ESRC is the United Kingdom's largest organisation for funding research on economic and social issues and as well as directly supporting students they also fund institutions to provide training to PhD students through institutional doctoral centres and they provided the funding for three of my participants. In 2020 the ESRC began a scoping exercise of the effectiveness of PhD training and support with CFE Research and the University of York undertaking an interim report (CFERUY, 2020) and some of the emerging themes confirm the issues that my participants raised in relation to their PhD study. For instance, the report acknowledges that there needs to be a greater recognition of the different experiences and backgrounds of social science PhD students and a flexibility in accommodating these and this was particularly the case for my participants who came to the qualification with professional experience.

My study highlights the lonely nature of my participants' PhD experience and how for many of them they drew on their own existing networks of support to enable their progression as well as their supervisory relationships. In examining student wellbeing, the CFERUY (2020) report notes that more needs to be done in providing greater support. Instead of there being dedicated institutional mental health and well-being services, there is an over-reliance on the use of those designed for undergraduate students and these are less tailored to the needs of PhD students.

As previously discussed, when it came to the training provided by Central University and funded by the ESRC, my participants felt that this was not particularly tailored to their requirements. The CFERUY (2020) report found that skills training for PhD students is often too general or not advanced enough and they recommend that all students should undergo a training needs analysis and that this is reviewed on an annual basis and accompanied with a progressive training agenda. For my

participants having a more tailored approach to their training would have been welcomed and it would have helped in providing their PhD experience with a more personalised approach.

The three participants who had ESRC funding discussed how challenging it was to be able to survive on this and how there was a need for them to also work on a part-time basis to supplement this. Both Jana and Lorna were in receipt of ESRC funding and were in the fourth year of their research and discussed their precarious financial situation as their funding had ceased. For Jana this meant needing to continue to work up to four days a week meaning that her writing would often be done 'late into the evening'. The CFERUY (2020) report notes how it is rare for PhD students in the social sciences to submit within three years and given this situation these individuals would be better supported if the funding was provided over four years and was more flexible in nature so that for those who experience unavoidable issues, such as illness during their PhD they are not disadvantaged.

9.5 The value of a longitudinal interview approach and photo-elicitation

The research questions in my study were explored within a distinct methodological approach that involved longitudinal interviews and photo-elicitation that has enabled an original contribution to be made in our understanding of the PhD student experience.

As discussed in chapter four, my participants were interviewed twice about their PhD experiences over a six-month period. The ability to be able to do this was beneficial as it enabled my study to highlight the changes that my participants underwent over time and allowed my study to explore the outcome of these changes. Cohen et al (2007) note how being able to do this is the real value of a longitudinal approach in being able to map the changes that take place. Interviewing participants twice meant that I could capture the changing nature of

the challenges that my participants faced and how they continued to adapt and how resistances in one interview (for example, Carlos and his supervisory relationship) may have been resolved by the next interview. The longitudinal approach meant that I could follow-up things that were mentioned and how the focus of one interview could be very different come the second meeting. For instance, in my first interview with Lorna she discussed her PhD experience in very negative terms, whereas by the second interview she was far more positive and appeared to have taken much more control of her research. Given that in my study the becoming of the PhD student is a continually emergent process, applying a longitudinal approach meant I was able to capture the evolving nature of the experience and how temporarily stable situations could be replaced with uncertainty about another aspect of PhD study, for example, Peter's confidence in his conference performance in contrast to his worry about writing up. Rather than having just one snapshot, my methodological approach has allowed for a richer understanding of the phenomena (Ismail et al, 2018) with a deeper understanding of the PhD experience over time and has given 'a better understanding of the individual, if not the 'truth' of that person' (Thomson and Holland, 2003, p.238).

My study also employed photo-elicitation as an additional data collection method in helping me to access my participants lived experience of PhD study. These photographs provided additional depth and richness to this study and support the findings of Ryan & Ogilvie (2011) about the value of photo-elicitation. The photos provided an initial gateway into my participants experiences and were a helpful way to begin the interview process with them talking about their images. By discussing the participants' photographs I felt a closer connection with them, and it was easier to understand what they were talking about through their images that I do not believe I would have had through standalone interviews.

My experience of using photo-elicitation reflects the findings of many visual researchers, for example, participants engage in conversation and respond to images without indecision (Meo, 2010).

9.6 My own PhD journey and positionality

Undertaking this research study has been an invaluable learning experience. I have gained much understanding of the nature of research and of the cyclical and sometimes messy research process. As part of my own PhD assemblage, I have learnt that things do not fit neatly into categories and that research can be frustrating and sometimes tedious, yet at other times immensely rewarding and even exhilarating. This research study has also provided some key ideas which have helped me examine my own professional values and guidelines for possible changes to my own future practice with PhD students.

In chapters one and four I discussed my positionality in undertaking this research and how as a PhD student I brought my own history and interconnected lines together with my set of identities and as someone who works in the higher education sector, I already had some insight into the PhD student experience. However, my positioning was often less binary than the insider/outsider positioning might suggest. While I might know more about the processes of PhD study than my participants and could suggest ways forward when they discussed particular issues after the interview recording had stopped, when it came to the practicalities of doing my own research it could often be a messier process that at times lacked direction. Rather than being an insider/outsider, I often felt like I was occupying a space in-between these two that Milligan (2016) describes as being an 'inbetweenner' (p. 235), that is someone who is neither entirely inside nor outside.

In regard to my positionality, there was a need for reflexivity in acknowledging that the understanding that I brought to this research shaped my perceptions of what

participants might tell me and influenced the interactions that I had with participants. My participants did open-up about their experiences and given they were a diverse group, there were many parallels between my positioning in doing the PhD and those who I was interviewing. As a result, I recognised that some of the participants in my study may identify with me and have provided me with the responses that they thought I may have wished to hear. I therefore attempted to create a distance between my participants and myself by making them aware that I felt that the PhD experience is very individual and that I had no preconceived notions about the information I would receive from them.

As discussed in chapter four, there were times in my interviews when I was emotionally moved listening to some of the lived experiences of my participants. I found myself, like Ellis (2003), embracing this emotion as one of my experiences of being a researcher. Ellis (1991) refers to an 'emotional sociology' that involves 'consciously and reflexively feeling for ourselves, our subjects, our topics of study and invoking those feelings in our readers' (p. 126). She goes on to suggest that researchers should convey those emotions experienced when hearing the real-life stories of their participants and I have tried to do this in my thesis.

There were many benefits in being a PhD student researching the PhD experience and through both my interviews and wider interactions with other students I learnt about how others coped with aspects of their PhD study. Some of the challenges recounted chimed with some of my own and their ongoing adaptation and the things that they struggled with I could identify with such as the value of positive feedback, the need for compartmentalisation and adapting the home as a site of PhD study. All of these interactions helped in informing the approach to my study as well as my own practice and enabled me to make sense of some of my own experiences on the PhD.

9.7 The limitations of my research

While this study provides valuable insights into the PhD student experience, several limitations are evident, and here I consider two in relation to my methodological approach: the first relates to my sample and the second to my framing.

For my study I wanted to recruit a cross section of participants that fulfilled a specific number of criteria. So, my sample needed to be diverse in terms of participant study status and background and I required individuals who would be willing to be interviewed twice over a six-month period and would be prepared to provide photographs of aspects of their PhD experience. The recruitment of such a specific sample was not necessarily that straight-forward and it might have been an easier task to only focus on certain variables such as those individuals undertaking PhD study either on a full-time or part-time basis. The requirement for my participants to provide images might have also been a disincentive in recruitment. While I ended up with eleven participants, my initial intention had been for a sample of fifteen and this might have been possible with fewer selection criteria. I also only looked to recruit social science PhD students whereas I could have recruited those undertaking the qualification in arts and humanities, since they share much that is common in their PhD study. However, the eventual wealth of data that my actual sample provided meant not having a larger group of participants did not unduly impact my exploration of the PhD experience and outweighed the limitations of the sample.

I had initially considered recruiting participants from more than one institution as there would have been a value in contrasting how participants experience PhD study in different settings. In chapter four I discussed how I had thought about recruiting participants from the university where I work but considered that this would conflict with my professional role. I also decided against recruiting

participants at other universities due to the challenges in accessing gatekeepers (Harvey, 2011). Instead, my sample was recruited from one institution and a certain level of differentiation was provided by participants coming from a range of social science departments at Central University.

In conceptualising the PhD student experience as an assemblage my study has been able to take account of the messy and interconnected nature of my participants' accounts. However, this has also meant taking a particular focus on certain aspects of the experience. For instance, my focus on exploring the molar line meant that only certain aspects of how the family, work and education might have impacted were considered, while other things such as motivations for doing a PhD or the part that their early life might have played were not. Nevertheless, I defend my choice of methodology as a means by which I explored the PhD student experience and I accept that my research questions and sample could not possibly expose all the issues connected to this. While I could have taken a quantitative or mixed method approach to the analysis of my data, my preference for this study was to adopt a qualitative approach. That said, there is need for a range of other studies against which to evaluate mine. Nonetheless, I hope I have initiated a shift in how the PhD student experience might be conceptualised, particularly with regards to longitudinal research and photo-elicitation.

9.8 An agenda for further work

As discussed, this study set out to examine specific aspects of the PhD student experience and further detailed research with specific groups could produce even more nuanced data in this area of study. While my research has deliberately focused on those undertaking the PhD qualification, in chapter eight I discussed how a number of my participants discussed having regular thoughts about not continuing with their PhD study and before being interviewed one of my potential

participants did drop out. So, research exploring the experiences of those who do not progress would be a useful contrast to my study. Similarly, it would be informative to contrast the challenging nature of my participants' experience of the PhD with those who have completed the qualification and are able to reflect in hindsight on their challenges, adaptations and resistances.

While my study explored how a range of participants experienced the PhD, an area of useful research would be on how specific groups of students are impacted, such as those with professional experience. My findings highlighted how for some of my participants their transition from postgraduate taught to the PhD was impacted by their expectations and further studies exploring transition generally would be another productive area of research to pursue.

9.9 A final word

I started this thesis by reflecting on the work of Phillida Salmon (1992) and how over the past thirty years our understanding of the PhD student experience has been enriched by a growth in research so much so that it is now much less about entering a private world of which few people have spoken. I also noted how my professional experience of those undertaking the qualification helped to initially shape the direction of this research as did my interactions with my peers when I became a PhD student. Aside from participants, my understanding of the multidimensional nature of PhD study has developed through the countless conversations I have had with other PhD students, academic staff and supervisors as well as those attending conferences where I have presented on my pilot study and my formative research ideas. As a result, I have collected a great deal of background information while immersing myself in my participants' interviews. Over the past six years I have heard many accounts by PhD students that have been heart-warming, sad, complicated and evocative of what individuals have

experienced and not all of those individuals I have spoken to were able to progress and complete the qualification. All of these interactions have helped in contributing to finding an appropriate framing and the purpose of this study was to identify an alternative way to conceptualise this lived experience.

This research is an attempt to address the 'narrow imaginings of doctoral subjectivity' (Burford & Hook, 2019, p. 1344) by exploring the PhD student experience with a diverse group of participants. The interviews and photo-elicitation detailed in this thesis are testimony to the complexity of PhD study and how the lives of those who undertake it are more particular and nuanced than is sometimes imagined by institutions and in the literature.

Rather than the imagery of a linear pathway that presupposes a continuous movement with clear start and end points, conceptualising my participants experience as an assemblage has taken account of the interconnectedness of their PhD experiences. Their PhD assemblages incorporated the entanglement of their personal lives, ongoing adaptations, resistances, social networks, spaces, fears and desires, with each element within their assemblage having the capacity to affect and be affected and to alter the course of events. Their progression as PhD students did not signify a change of state from unknowing to knowing, but rather a process of always becoming, constantly unfolding within an assemblage:

This is how it should be done: Lodge yourself on a stratum, experiment with the opportunities it offers, find an advantageous place on it, find potential movements of deterritorialization, possible lines of flight, experience them, produce flow conjunctions here and there, try out continuums of intensities segment by segment, have a small plot of new land at all times.

(Deleuze & Guattari, 1987, p.161)

Afterword

In this thesis I have drawn on a number of Deleuze & Guattari concepts to create a more nuanced understanding of the PhD student experience and one that considers its less than linear and more evolving nature. However, methodologically drawing on their philosophical approach has resulted in a number of tensions for me as the researcher and in relation to my reflexivity and in this final section I will address these.

In chapter three I discussed the complexity of working with a Deleuzian philosophical approach and from early on there were limits for my study in how far I applied his work empirically. Massumi notes the complex nature of *A Thousand Plateaus* (Deleuze & Guattari (1987) since it was ‘conceived as an open system’ (p. xiv) where concepts and how one might go about doing Deleuzian empirical research is not a settled matter. St. Pierre (1997) notes how their concepts lead to other concepts and as a result the researcher is recommended to work with ‘nomadic thinking’ in applying a Deleuzian approach empirically to their research practices. Having an understanding of the open-ended nature of Deleuze’s philosophical approach meant that at times I found it stifling both in understanding the complexity of the concepts but also in how far my empirical practice should be informed by his work. However, through a gradual process of reading the works of Deleuze & Guattari and how others had interpreted them, I began to develop an understanding of the concepts I could use to explore my data. Drawing on how others had done this was immensely informative, nevertheless, in this reading what also seemed to be clear was how researchers, while using the concepts, did not necessarily apply a ‘full’ Deleuzian approach to their analysis and interpretation of the data that they had collected (Taylor et al, 2011; Guerin, 2013 and Fullagar et al, 2017). In reflecting on this, what this seemed to suggest was how challenging it

might be for other researchers in applying this next level to their own empirical practice and given this complexity, how for me as a researcher new to this approach it might be sensible to also follow this more selective approach.

In chapter four I discussed how I had used thematic analysis to explore my data and through a process of coding I had identified a set of initial codes that were then merged into higher level themes through which I began to make sense of my data. However, this type of coding process runs counter to Deleuzian empirical practice, with MacLure (2013) noting how this type of approach cuts into the flows of difference and makes everything explicable but, ignores what does not fit. For MacLure (2013) social science researchers should not rush to make a 'quick judgement' (p. 16) and should instead spend time sitting with their data. Deleuze & Guattari (2015) argue that coding imposes an arborescent, hierarchical structure of fixed relations between bodies that does not allow for things to deviate. In coding my interviews, I was tidying up the messiness of the data and identifying commonalities through the creation of themes in my desire for order and to make sense of participants' experience. However, in contrast, Deleuzian theory concerns itself with the messiness and diversity of experience.

So, rather than creating an arborescent thematic coding structure, a more Deleuzian approach that I could have used was one that Taylor & Harris-Evans (2018) applied to their interview data. Here they attempted a data analysis process based on using a rhizomatic structure. This meant staying with the multiplicity and 'lived specificities' of students' experiences by presenting large chunks of interview transcripts – thereby refusing to 'break apart' students' individuals' experiences and discussing the assemblages shown through the transcripts: 'doing rhizomic data analysis... meant attending to fragments, parts and bits and refusing to impose themes, patterns or systems on these' (p. 1257).

By creating themes, I had also created broad categories with which to represent the PhD student experience, even if individuals might differ in how they responded to life before the qualification or the doing of the qualification. Again, this notion of representation runs counter to Deleuzian thinking and instead of focusing on the forms of difference, my coding fixed on representing forms of commonality. Arguably, in doing this I was effectively taking little account of my participants own assemblages of objects, bodies and affective states that were always in a temporary stable state. Whereas in my coding I had created fixed categories of representation by highlighting, for example PhD workspaces, a lack of communities of belonging and instances of supervisory relationships.

MacLure (2013) notes how aspects of participants' accounts can be lost or overlooked by applying coding, such as affect and bodily matters as these things 'can resist translation into codes' (p. 173). Affect is a fundamental part of any assemblage of experience perceived through a Deleuzian lens and can be thought about as the material change that comes about as a result of feeling before it has been categorised into emotion. For Deleuze, affect is a bodily phenomenon, constituting a material change in the world and involves changes in the body that occur when our bodies are responsive to experience, not only the ways in which bodies respond to events but also how they prepare themselves for actions. In my interviews there were moments of emotional intensity with participants becoming tearful about the relationship costs of undertaking a PhD at the expense of spending time with their families. Or, when I asked participants about whether they had ever considered the idea of giving up their research and how this brought some interviews to a halt with individuals needing to consider this thought and then not being able to carry on discussing their experience. MacLure (2013) refers to these as moments of 'disconcertion' (p. 172) and how by ignoring these matters

researchers 'reveal the routine machinations of representation in education and research' (p. 173).

It is only now in reflecting on my methodological approach that I consider how I might have analysed my data in a way that is more in keeping with Deleuzian thinking and the reasons I did not do this. In wanting to remain open to experimenting with what this data analysis might have looked like, there was also a tension for me in wanting the conventions of the familiar and as a novice researcher with little to guide a more Deleuzian approach, I would have felt uncomfortable in attempting to take this more post-qualitative approach to make sense of my data. I understood how to use thematic analysis and there are articles and training I could draw on to enable me to do this and as a novice researcher this felt a more achievable approach. In this I was guided by Seidman's (2013) advice to new researchers to find my own way and to listen to my own inner sense regarding preferred research methods.

Crucially, there are also numerous criticisms that can be levelled at research conducted from a Deleuzian perspective. For example, Sakr (2021) notes how there is an obvious lack of generalisability in the research generated through a Deleuzian lens. With its consistent and emphatic emphasis on heterogeneity, there can be no attempt to draw out apparent commonalities in how, for example, individual students might experience aspects of the PhD qualification. Would a research study then risk remaining messy and incoherent to the reader if a starting point was that every PhD student experience is different and that no single experience can ever be established. Also, if we only ever engage with complex and confusing assemblages of experience how can our understanding of the experience further develop so that interventions can be put in place to further support PhD students?

From a personal viewpoint, having noted how MacLure (2013) suggests that adopting a Deleuzian approach to coding and analysis should be a 'languorous pleasure' (p. 20) there were also practical considerations in devoting the time necessary to do this that would have been challenging. While Gale (2018) states how in undertaking a Deleuzian methodology there should be a 'madness' and a 'coming off the rails' (p.1 - 2) for the researcher as they grapple with the complexity of doing this and dealing with how messy the reporting becomes.

Having mentioned how the notion of representation is problematic in Deleuzian research, it is still possible to find this in research undertaken that follows this empirical approach. For example, the Taylor & Harris Evans (2018) study of the assemblage of undergraduate transition still provides a representation made up of the discursive, material and bodily elements of their participants' experience. This is also a relatively fixed assemblage that does not capture the ways in which elements move in and out with connections constantly emerging and others dying out (Barad, 2007).

In my thesis I discussed my reflexivity in relation to my subjectivities of being both a PhD student working with other PhD students as well as someone who professionally works with these types of students in my role as a Student Experience Manager and how occupying these various positions impacted on my role as a researcher. The result being that for me there was no absolute transition from being a practitioner to becoming a researcher (MacLure, 1996) and in this last section I will address this more.

In my role as a researcher working with PhD students and having a professional understanding of the issues they could face, having this background highlighted the differences of how I experienced the PhD in comparison to my participants. Having worked in the higher education sector, I carried a set of professional experiences

that meant my expectations of PhD study could be markedly different to my participants. This also meant I had a fairly autonomous disposition in relation to my PhD study and this has served me well through some of the challenges that I have experienced in the qualification. This professional positioning meant I am also part of the wider contemporary assemblage of higher education that is impacted by policy and within a global market of PhD students. Inevitably this positioning impacted on how I constructed my research and the aspects I wanted to focus on. For instance, I was aware that despite funding being provided to create training and social opportunities for PhD students, I knew from my own experience that these could be quite poorly attended by certain cohorts of students and wanting to explore this further with my diverse group of participants seemed a sensible approach.

Having a professional understanding of the PhD experience meant that there was an element of asking questions to ascertain particular sorts of information. In turn this impacted on the coding of certain elements of the data that I had more personal awareness of that led to emphasising these aspects, such as workspaces and supervisory relations and not others. Having this professional experience meant that bracketing myself out of the collection and analysis of the data was not always possible and this meant that certain aspects were emphasised of my participants' PhD experience and not others that a researcher not working in higher education might have done.

Just as with my participants, there were times of Deleuzian affect and 'moments of disconcertion' (MacLure, 2013, p. 173) that impacted on me as the researcher and my own assemblage of PhD study. For instance, listening to participants imagining that they would have dedicated study spaces or a closer working relationship with their supervisor caused an affective reaction in me, even if I didn't react during the interviews. At times such as this I was required to bracket myself out of this process

and just listen to participants discuss what their expectations of PhD study were before starting. So, there were instances of the PhD experience that I did not pursue further due to the reaction that I felt in response to some of my participants' unrealistic expectations of PhD study. Similarly, as someone working with PhD students hearing students saying that they just wanted to pass and were not aiming for perfection seemed a sensible and pragmatic approach to submitting their work. These comments also impacted on me as a PhD student, and it was impossible to bracket myself out of aspects of PhD study where participants experiences provided forms of guidance that could impact on my own writing practice.

In summary, adopting a Deleuzian approach to my research came with a set of tensions that impacted on my how I undertook my study. That said, my use of Deleuzoguattarian concepts has enabled my study to make a contribution to the field of work around the PhD student experience and opened the possibility of different kinds of methodological work in the future.

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Appendix B

First round interview questions

1. Photo task

'Tell me about your photo/s and what they show'

2. Educational background

What was your educational history before the PhD?

Were there key mentors/significant others during this time?

What did you do before the PhD?

Why did you undertake a PhD?

3. Expectations and perceptions of PhD study

What were your expectations, perceptions of PhD study?

What did you know about doing a PhD?

So far, how has 'reality' compared to your expectations?

4. PhD student development

How do you think being a PhD student compares to your earlier studies?

Do you think you are a good PhD student? (And what would that mean to you?)

How is your development as a PhD student recognised and if so by whom and in what ways? Has this recognition changed over time?

Where do you do your PhD study? What connection do you have with your department and the institution generally?

5. General progress

What have the challenges been so far in your PhD and what has helped you to adapt?

Are there any people either within or outside the institution who have helped?

Anything else you would like to add?

Appendix C

Second round interview questions

1. Since the last interview how have things been going, what has gone well and what have the challenges been?
2. Do you feel you have developed as a PhD student since our last interview? If so, in what ways?

In the first interview we briefly discussed what your expectations of PhD study might have been before you started.

3. How have your expectations of PhD study changed from before you started?
4. Specifically, what expectations did you have about your supervisory relationship - and have these been fulfilled?
5. Knowing what now know, would you still have done the PhD? What might have helped in enabling you to have a more informed view of PhD study?

Appendix D

Data Protection Registration Number

Ethics Application Form

Anyone conducting research under the auspices of the Institute of Education (staff, students or visitors) where the research involves human participants or the use of data collected from human participants, is required to gain ethical approval before starting. This includes preliminary and pilot studies. Please answer all relevant questions in simple terms that can be understood by a lay person and note that your form may be returned if incomplete.

Registering your study with the UCL Data Protection Officer as part of the UCL Research Ethics Review Process

If you are proposing to collect personal data i.e. data from which a living individual can be identified **you must be registered with the UCL Data Protection Office before you submit your ethics application for review**. To do this, email the complete ethics form to data-protection@ucl.ac.uk. Once your registration number is received, add it to the form* and submit it to your supervisor for approval.

If the Data Protection Office advises you to make changes to the way in which you propose to collect and store the data this should be reflected in your ethics application form.

Section 1 Project details										
a.	Project title	<i>Desired in theory, but troubling in practice</i> The challenges, adaptations and resistances in the social science PhD student experience.								
b.	Student name and ID number (e.g. ABC12345678)	Hugh Kilmister 18164097								
c.	*UCL Data Protection Registration Number	Z6364106/2019/03/198 Date issued: 28/03/19								
c.	Supervisor/Personal Tutor	Professor Martin Oliver								
d.	Department	Culture, Communication & Media								
e.	Course category (Tick one)	<table border="0"> <tr> <td>PhD</td> <td><input checked="" type="checkbox"/></td> <td>EdD</td> <td><input type="checkbox"/></td> </tr> <tr> <td>DEdPsy</td> <td><input type="checkbox"/></td> <td></td> <td></td> </tr> </table>	PhD	<input checked="" type="checkbox"/>	EdD	<input type="checkbox"/>	DEdPsy	<input type="checkbox"/>		
PhD	<input checked="" type="checkbox"/>	EdD	<input type="checkbox"/>							
DEdPsy	<input type="checkbox"/>									
f.	If applicable , state who the funder is and if funding has been confirmed.									
g.	Intended research start date	21 st January 2019								
h.	Intended research end date	31 st December 2022								
i.	Country fieldwork will be conducted in <i>If research to be conducted abroad please check www.fco.gov.uk and submit a completed travel risk assessment form (see guidelines). If the FCO advice is against travel this will be required before ethical approval can be granted: http://ioe-net.inst.ioe.ac.uk/about/profservices/international/Pages/default.aspx</i>	United Kingdom								
j.	Has this project been considered by another (external) Research Ethics Committee?									
	Yes <input type="checkbox"/>	External Committee Name:								

May 2018

Desired in theory, but troubling in practice**The challenges, adaptations and resistances in the social science PhD student experience.**

Start date: April 2019 End date: December 2022

Information sheet for PhD student participants**Invitation**

My name is Hugh Kilmister and I would like to invite you to participate in my research study which forms part of my PhD research. My research is self-funded.

You should only participate if you want to; choosing not to take part will not disadvantage you in any way. Before you decide whether you want to take part, it is important for you to understand why the research is being done and what your participation will involve. Please take time to read the following information carefully and discuss it with others if you wish. Ask me if there is anything that is not clear or if you would like more information.

What is the purpose of my study?

The aim of my study is to contribute to our understanding of the part challenges, adaptations and resistances play in the development of social science PhD students.

The intention is that the data produced will inform our understanding of the contemporary PhD student experience and to identify any implications there might be for supervisors and institutions in supporting PhD students.

Why have I been invited to take part?

You have been invited to take part because you are a PhD student, and your experiences of the qualification are critical in contributing to our understanding of the experience. I have invited a diverse range of 15 doctoral students at different stages of the qualification to take part in this study.

What will happen to me if I take part?

If you decide to take part, you will be given this information sheet to keep and you will be asked to sign a consent form.

This is a two-stage research process. Firstly, you will be asked to photograph your PhD experience and secondly you will be interviewed twice about your experience. I will discuss the interview procedure with you and arrange to interview you in a private place (for confidentiality reasons) or at a suitable venue in a local public site if you prefer.

The photograph task will involve taking a small number of photos (no more than three) of the spaces that best represent the key sites of the doing of your PhD study as well as images that capture the public doing of your research. The first interview will involve asking you to reflect on your photos as well as on your background and expectations in undertaking PhD study and any challenges you have faced. The second interview will reflect on their last six months of study and your ongoing development. Each interview should take no more than 75 minutes to complete

and will be based on an interview topic guide, but it is designed to be flexible so as to meet your needs.

The interviews will be recorded, subject to your permission. All recordings of data on audio-equipment will be deleted after they have been transcribed. I will send you the transcription of your interview for any amendments that you should wish to make. Even if you have decided to take part, you are still free to stop your participation at any time during the interview and to have your research data withdrawn without giving any reason up to 31st December 2020.

Will anyone know I have been involved?

The data that you provide in your interviews will be regarded as strictly confidential and will be held securely until the research is finished in 2022. All data for analysis will be anonymised. In reporting on the research findings, I will not reveal the names of any participants or the organisation where you study. At all times there will be no possibility of you as an individual being linked with the data.

Rather than just changing your name to protect your identity I will also change some of your key characteristics when I come to describe you as a participant. In reporting my research findings, I will not reveal your name and there is no possibility of you being linked with your data.

Could there be problems for me if I take part?

Given the personal nature of this research, that asks you to reflect on and discuss your PhD experience, there is a risk that being involved in this research project might be potentially upsetting. If you feel uncomfortable during the course of the interviews you are entitled to stop at any point and be aware that any difficult subjects that you might discuss will be handled carefully.

If you are affected by your involvement in this research project, support is available at the University's Counselling Service.

What will happen to the results of the research?

Following the submission of my research I will produce a final report summarising the main findings, which will be sent to participants. I also plan to disseminate the research findings through publication and conferences within the UK.

The UK Data Protection Act 1998 will apply to all information gathered within the interviews and held on password-locked computer files and locked cabinets. No data will be accessed by anyone other than me; and anonymity of the material will be protected by using false names. No data will be able to be linked back to any individual taking part in this study.

Do I have to take part?

It is entirely up to you whether or not you choose to take part. I hope that if you do choose to be involved then you will find it a valuable experience. Remember that your participation is voluntary, and you do not have to take part. There will be no negative repercussions if you decide you do not wish to take part and if you have any questions about your participation and withdrawal you should let me know.

Data Protection Privacy Notice

The data controller for this project will be University College London (UCL). The UCL Data Protection Office provides oversight of UCL activities involving the processing of personal data and can be contacted at data-protection@ucl.ac.uk. UCL's Data Protection Officer can also be contacted at data-protection@ucl.ac.uk. Further information on how UCL uses participant information can be found here:

<https://www.ucl.ac.uk/legal-services/privacy/ucl-general-research-participant-privacynotice>

The legal basis that would be used to process your personal data will be [performance of a task in the public interest.] The legal basis used to process special category personal data will be for scientific and historical research or statistical purposes/explicit consent.

Your personal data will be processed so long as it is required for the research project.

If we are able to anonymise or pseudonymise the personal data you provide we will undertake this and will endeavour to minimise the processing of personal data wherever possible. If you are concerned about how your personal data is being processed, or if you would like to contact us about your rights, please contact UCL in the first instance at data-protection@ucl.ac.uk

Contact for further information

If you have any questions or require more information about this study, please contact me using the following contact details:

Hugh Kilmister

This project has been reviewed and approved by the Research Ethics Committee.
Thank you very much for taking the time to read this information sheet.

Desired in theory, but troubling in practice

The challenges, adaptations and resistances in the social science PhD student experience.

Consent Form

If you are happy to participate in this study, please complete this consent form and return to Hugh Kilmister in person.

	Yes	No
I have read and understood the information leaflet about the research.	<input type="checkbox"/>	<input type="checkbox"/>
I understand that if any of my words are used in reports or presentations they will not be attributed to me.	<input type="checkbox"/>	<input type="checkbox"/>
I understand that I can withdraw from the project at any time, and that if I choose to do this, any data I have contributed will not be used.	<input type="checkbox"/>	<input type="checkbox"/>
I understand that I can contact Hugh Kilmister at any time and request for my data to be removed from the project database.	<input type="checkbox"/>	<input type="checkbox"/>
I understand that the results will be shared in research publications and/or presentations.	<input type="checkbox"/>	<input type="checkbox"/>
I agree for the data I provide to be archived at the UK Data Service. I understand that other authenticated researchers will have access to this data only if they agree to preserve the confidentiality of the information as requested in this form.	<input type="checkbox"/>	<input type="checkbox"/>
I understand that other genuine researchers may use my words in publications, reports, web pages, and other research outputs, only if they agree to preserve the confidentiality of the information as requested in this form.	<input type="checkbox"/>	<input type="checkbox"/>

Name.....
 Signature.....
 Date.....

