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Entanglements with empathy

**A critical exploration of more-than-human
ethics in a school of veterinary medicine**

MEGAN MARTHA DONALD



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School of Geographical and Earth Sciences

College of Science and Engineering

University of Glasgow

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Abstract

This thesis critically investigates the profession of veterinary medicine by utilising a more-than-human conceptual and methodological framework. Understandings of veterinary medicine – as a science and as an art – have traditionally remained under the remit of the medical sciences and have been popularised by a unrealistic imaginary. This research offers alternative ethical narratives to this framing which trouble the profession's enduring dualisms of science and emotion, and human and animal. It is these dualisms which work to limit the role of the animal in veterinary medicine whilst encouraging a culture of emotional resilience in the profession.

Taking a school of veterinary medicine within the UK as its empirical focus, this thesis specifically explores how veterinary students learn to become 'sensuous scientists' as they move through the multiple sites of the vet school: the lecture theatre, the anatomy lab, the farm and the small animal hospital. The affectively-attuned, ethnographic methodology allows for ethical tensions between humans, animals and materials to be raised in the research. 'More-than-human empathy' emerges as a key analytic within the thesis.

As a result, this research fully acknowledges the animal as an actor in their care, demonstrates how affect and emotion are formative of veterinary medicine and critically discusses the overlooked more-than-human politics inherent in veterinary practice and empathy beyond the species divide.

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Author's Declaration

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

Signature:

Printed Name: Megan Martha Donald

List of abbreviations

ANT – Actor Network Theory

AVMA - American Veterinary Medical Association

BVA – British Veterinary Association

BVEDS – British Veterinary Association Ethnicity and Diversity Society

BVLGBT+ - British Veterinary Association Lesbian, Gay, Bisexual, Transgender + Society

BVMS – Bachelor of Veterinary Medicine

CAS – Critical Animal Studies

CAT – Continuous Assessment Task

CNS – Central Nervous System

CSF – Clinical Skills Facility

DMT – Dance Movement Therapy

DOPS - Direct Observations of Procedural Skills

EMS – Extra Mural Study

EU – European Union

EVCC – European Veterinary Code of Conduct

FMD – Foot and Mouth Disease

FVE – Federation of Veterinarians of Europe

GIS – Geographical Information Systems

GP – General Practitioner

I. The first thread of empathy

It was after a challenging morning of consultations that the students and I took a breather in the staff room of the Small Animal Hospital. We hadn't eaten since breakfast and quickly inhaled the cake a client provided as a thank you to the staff for euthanising her dog with so much care. It was always the euthanasia cases which brought about gifts from clients. One student changed out of his bloodied scrubs and rubbed his forehead. Natalie, a 5th year student I was shadowing, mentioned a past case of a cat with a tricky fractured leg:

“Remember Sammy, wonder how he's getting on! He was just the best, eh?”, Natalie said.

“Oh yeah, that was such a sad one though, he was here for so long and he's so old,” another student, Marie, chipped in.

I asked to be filled in on the case of Sammy and learnt he was a geriatric cat who had fallen out of a window and sustained a rare break in his hind leg. His usual vet was unable to provide the specialist treatment to save the leg and so he was referred to the hospital to receive lengthy, expensive veterinary work which led to him being given a new, prosthetic joint.

“It's just ridiculous that we did that. He should've been euthanised, for everyone's sake. His poor owner will be up to her eyeballs in debt, and all so the cat can live another one, two years?! That's not caring for anyone,” Marie continued.

Within this conversation, Sammy divided opinion on what constituted care and for whom it was the job of the vet to feel empathy for. Natalie added:

“But if you think about it, he got back home with his owner and he can do the things he likes doing again instead of hobbling about on three legs. We'd do the same for humans.”

“Aye, and it was so cool to watch! How often do we get a chance to see that level of skill at work in the operating theatre? Maybe I can be that good some day...” another student, Neil, added.

The door to the staff room then burst open and the head nurse exclaimed:

“Right guys, that’s the road traffic accident case arrived now, we’ll be needing your help everyone.”

Tea, just brewed in mugs branded with the logos of pharmaceutical companies, was abandoned and stethoscopes were draped around necks. Time to get back into the thick of it. Sammy’s unresolved ethical dilemma would need to wait until another day.

*

At this early stage in the thesis, I should acknowledge my own involvement in the story of British veterinary medicine. I am not a vet, but the profession is part of my own story. My dad, and my grandfather, *are* both vets. I was brought up in the daily rhythms of my dad’s veterinary practice in Inverness. The story of veterinary medicine is also partly my own situated family history.

My role in the vet practice was a strange one. I hung around a lot, after school and at weekends. From a very early age, I had the run of the place – I would mostly sit in the vet’s offices upstairs, chat to the receptionists in the waiting room or go ‘into the back’ to help the nurses. We would walk the dogs in the yard and change their food and bedding together. I would go into the cattery and, when I was tall enough, peer into cages where a recalcitrant cat might be holed up. I was in the operating theatre from six years old and helped clean the amniotic fluid of newly born puppies (the best job). When my dad was on call at the weekend and felt too guilty to call up a nurse to help him, I stood in and held down dogs’ veins during client consultations so he could draw blood. I was fascinated by the complicated names of the drugs in the pharmacy, I revelled in the excitement of an emergency and I loved stealing the sweets in the staff room that were gifted by thankful clients. When I was older, I worked there as a receptionist. When my dad moved away from the practice and became a government vet who worked on farms, I trailed around with him to remote parts of the Scottish Highlands, where we tested cattle for tuberculosis and talked biosecurity (this wasn’t too long after the 2001 Foot and Mouth Disease outbreak¹).

¹ The 2001 Foot and Mouth Disease outbreak was a catastrophic animal disease outbreak that lasted for 32 weeks within the United Kingdom (UK) and involved the culling around 100,000 livestock animals every day throughout the outbreak. Additional to this loss of life and agricultural wellbeing, the outbreak cost £8 million (National Audit Office Report, 2002).

My personal position in this world gives me a unique perspective as a researcher on veterinary medicine. It is distinctly liminal: I am not trained in veterinary science, so I do not understand the underlying biochemistry and anatomy the profession is based on. I do however have my own veterinary knowledges that are marked by their embodied, 'non-scientific' basis. I am at once in the mix of it all and, unavoidably, on the outside, looking in. I am a not-quite-vet.

As a not-quite-vet and as a cultural geographer researching 'the more-than-human', I have a critical interest in how emotion and science, and human and animal, interrelate. In not understanding veterinary medicine from a scientific perspective, I have come to learn how situated emotional and affective geographies are essential in creating veterinary expertise and affecting animals' lives. This expertise, empathy and ethical complexity faced by the vets I know – personally and through research - far out-reaches the popular veterinary imaginary.

This research takes up these themes as forms of critical inquiry – originally explored in my Master of Research dissertation² - and situates them in a *UK school of veterinary medicine* as its site of study. What is it about this veterinary institution that is so important to understanding the more-than-human geographies of veterinary medicine?

First, anyone who wishes to become a vet, and legally call themselves a vet³ within the UK must attend one of these schools and undertake a Bachelor of Veterinary Medicine degree.⁴ These schools of veterinary medicine or 'vet schools' as they are commonly known, actively define the limits of an early-career vet's world.⁵ The Royal College of Veterinary Surgeons (RCVS), the statutory regulator of the profession in the UK, works closely with British vet schools so that veterinary degree programmes prepare vet students for 'the real world'. Every vet student, regardless of which of the eight British vet schools they attend, has to fulfil the same 'RCVS Day One Competences' by the time

² Entitled 'Dwelling in the wound: geographies of more-than-human empathy and expertise in a rural veterinary practice'.

³ 'Vet' is a shortened term for 'veterinary surgeon'. Throughout this thesis, I refer to this role as a 'vet', 'veterinary surgeon' and 'veterinary practitioner'. They all mean the same thing. I do not use the term 'veterinarian', which is the more common usage in the United States of America (USA) (where a 'vet' is usually a war veteran).

⁴ Each British school of veterinary medicine has their own precise wording for this degree and therefore their own acronyms. They are all the same 'basic' veterinary degree.

⁵ 'Vet student' or 'student vet' is the term I use for those studying veterinary medicine.

they graduate.⁶ The competences detail the minimum essential abilities and practical knowledge a vet is required to have on their first day of work⁷. Unlike non-vocational university courses then, a vet school degree is directly paired up with the destination ‘working’ profession.

Second, a vet school has to incorporate all facets of veterinary medicine, unlike a normal veterinary practice. Whilst a workaday vet practice might elect to specialise in pet animals, the vet school is a site where multiple aspects of veterinary medicine must be available *in the same location*.⁸ A vet school thus provides facilities for learning anatomy, pathology, clinical skills, laboratory skills and farm skills, to name only a few. Additionally, there is a larger number of species involved within a vet school. Within a vet school campus, there is likely to be dogs, cats, rabbits, cattle, sheep, horses and reptiles in relative proximity. This means that the vet school offers an extensive array of practices and human-animal relations *within the same institution*. Evidently, this needs to be investigated from a geographical perspective.

Enrolling in The Vet School

My doctoral research was carried out within one of these vet schools. As the British veterinary profession is relatively small and interlinked by only eight vet schools, I have decided to name it simply ‘the vet school’ to ensure confidentiality for participants and the institution itself.

The Vet School is based on a campus in the outskirts of a city in the UK. At any one time, there are approximately 700 undergraduate students enrolled on the Bachelor of Veterinary Medicine and Surgery degree (BVMS degree), which is delivered over five years and broken into three stages, laid out in Table 1:

⁶ These are situated in *London* (Royal Veterinary College), *Liverpool* (University of Liverpool Institute of Veterinary Science), *Cambridge* (University of Cambridge Veterinary School), *Bristol* (University of Bristol Veterinary School), *Nottingham* (University of Nottingham School of Veterinary Medicine and Science), *Surrey* (University of Surrey School of Veterinary Medicine), *Glasgow* (University of Glasgow School of Veterinary Medicine) and *Edinburgh* (The Royal (Dick) Vet School of Veterinary Studies, known as ‘the Dick Vet’).

⁷ See Appendix A for reference.

⁸ ‘Veterinary practice’ refers to the place where veterinary medicine takes place and where vets most often work. I also use the term ‘veterinary surgery’ and ‘veterinary clinic’ to mean the same thing. Within the profession, they are used interchangeably.

Phase	Year(s) of Study	Summary
Foundation	Years 1 and 2	Fundamental skills, knowledge and attitudes developed ‘Body systems approach’ taken – health and disease understood from cellular level to societal level Disease mechanisms will be understood so that they can later be applied in professional environments
Clinical	Year 3 and 4	Builds on foundation phase ‘Real life’ cases form the basis of integrated clinical training Clinical reasoning and planning developed Greater responsibility for personal learning
Professional	Year 5	No lectures – small group teaching in clinical environments on common species Centred in real veterinary work places Greater flexibility to focus own interests via ‘selectives’

Table 1 - Stages of BVMS degree

Alongside studying on the campus site (and the university farm), vet students are required to undertake 38 weeks of extra-mural study (EMS) within the five years of the BVMS degree. This involves students taking part in real, working veterinary environments such as veterinary practices, farms and abattoirs. Arrangements for EMS are usually organised by individual students. EMS is an immersive experience intended to get students comfortable handling animals and also developing their ability to apply emerging skills in the sort of hands-on situations that they will ultimately work in.

There is a mixture of formative and summative assessments throughout the BVMS degree. As well as exams and ongoing coursework, students have to complete various practical exams called OSCE (Objective Structured Clinical Examination) and DOPS (Direct Observations of Procedural Skills).⁹ The aim here is to create an education fusing theory and practice.

The vet school is thus a place made up of multiple sites, multiple species and multiple educational stages. This thesis investigates the more-than-human geographies of the vet school by moving through four of the key sites of learning – the lecture theatre, the anatomy laboratory, the farm and the Small Animal Hospital (SAH).

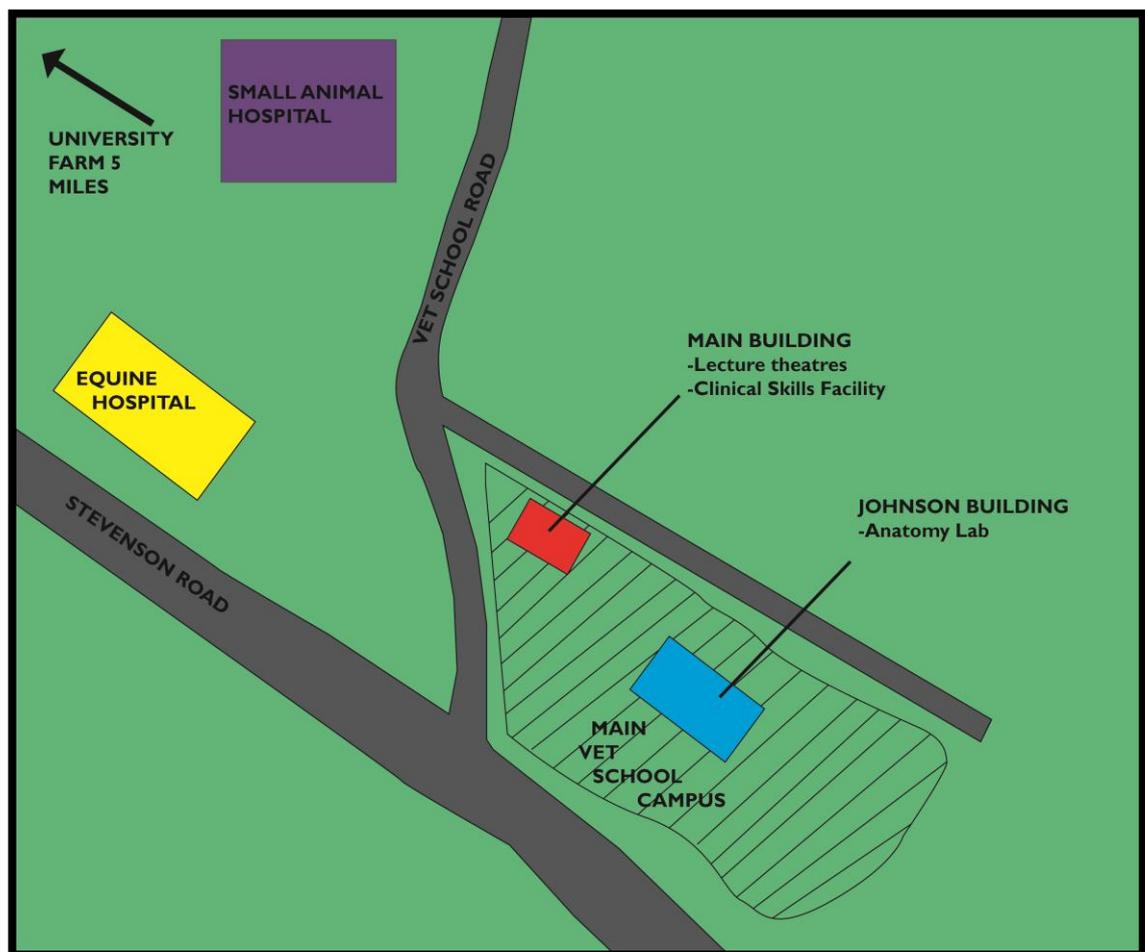


Figure 1 - Bird's eye view of vet school campus

⁹ See Glossary for information about differences between OSCE and DOPS.

Thesis objectives

- (1) To investigate how the skilled practices of student veterinary surgeons emerge in pre-clinical, field/farm and clinical settings and how these reflect changes in educational provision and professional training.
- (2) To critically explore the experiences of animals as cared-for patients, and as scientific bodies in order to better analyse the ethics of animal care and veterinary welfare in the context of veterinary education.
- (3) To critically investigate the practices and meanings of 'care', 'empathy' and 'veterinary professionalism' in the multiple sites in which veterinary students and graduated veterinary surgeons work.

These objectives are re-visited at the end of Chapter 2, the literature review of this thesis, so that the reader can better relate the theoretical concerns of this thesis to its objectives.

Four interventions for the vet school

In light of these specific objectives that structure the inquiries in this thesis, I wish to highlight four self-set commitments that guided my explorations of the vet school as a knowledge-making institution:

i. Animals need to be taken more seriously

Despite veterinary medicine being a profession that directly focuses on the medical care of animals, as patients they exist in the public veterinary imaginary largely as vulnerable subjects who only *receive* the medicine given to them by humans. Animals gain attention through the way they are a part of more complex human relationships in veterinary medicine but they are rarely, if ever, thought to be a part of the conversation about their own care. In this thesis, efforts are made to take more seriously the agency that animals have within the vet school as a 'beastly place' (Philo and Wilbert, 2001). Following contemporary debates in more-than-human geography, most notably the 'animal turn' (Buller, 2014), this thesis is oriented towards bringing the animal back into the focus of veterinary practice operating within the vet school.

ii. Affect and emotion need to be taken seriously as qualities formative of veterinary medicine

From the outset, it is my intention to draw attention to how affect and emotion are a part of veterinary education. Veterinary medicine is often referred to as both science and art – in other words, a *sensuous science* (Donald, 2018). Whilst veterinary medicine values evidence-based medicine and rational approaches to practice, the role of affect and emotion in these practices is generally underplayed. Supported by discussions in non-representational geographies and science and technology studies (STS), this thesis turns inquiries to the often overlooked, or unspoken, affective and emotional geographies that make up skilled practices within veterinary education.

iii. Ethical tensions between science and emotion, human and animal and care and harm are kept in play, not written out

This thesis is shot through with tensions. Tensions between, variously: science and emotion; human and non-human animal; care and harm. These tensions surface time and again through the work. The effect is deliberate. Ethical discussions about animals and their care can often end up being configured in dualistic terms. Care is framed either as ‘good’ or ‘bad’, often considered to be something that humans afford to other humans (Puig de la Bellacasa, 2017). Debate about animals ethics can be similarly bipolar, hinging on whether one eats animals or *not*, supports animal testing or *not*. In taking a site-based approach to the intimate relations between these tensions however, this thesis seeks to ‘stay with the trouble’ (Haraway, 2016) and, following Davies (2012), refuses to proceed as if an ethics of inquiry has been set prior to investigation. The vet school is thus opened up as a new ethical, political and more-than-human space. A space that, never being entirely stable, is full of empathetic possibility.

iv. This ethical speculation is partly a matter of experimentation

Working through the multiple sites and species of the vet school whilst considering their emergent and speculative ethics requires a more-than-human methodology. The aim here is to provide ‘alternative’ accounts of veterinary education that do not rely on medicalised data, determined by scientific protocols. This qualitative style of writing about medical practice is not without precedent. John Berger’s *A Fortunate Man* (1967) and Leslie Jamison’s *The Empathy Exams* (2013) are notable in affording humanity to medicine. Instead of verifying argument through quantitative evidence, this thesis gives impressions

of the more-than-human experiences of the vet school, developing a creative non-fiction writing combined with illustrations of practice. This is partly a matter of (necessary) experimentation.

Arguably, what this quartet of vet school interventions comes down to is one single point: *the task of this research lies in the asking of new questions of veterinary medicine education and of providing tentative answers.*

Thesis structure

Following this Introduction, **Chapter 2** entitled “**Try again, try something a bit different, be attentive’: conceptualising new ethical approaches for veterinary medicine’**, forms the literature review of this research. This chapter structures and explains how I devised a theoretical basis allowing for new ethical imaginaries to be investigated within the vet school. It is organised thematically into two main strands: *Affect, Ontology, Matter*, and, *Care, Harm, Empathy*.

In the broadest terms, *Affect, Ontology, Matter* is concerned with the matters of ‘feeling’ and theoretical debates about relational ontology within human geography. After discussing the continued pertinence of the ‘more-than-representational’ in cultural geography, this section explains the meanings and use of affect and emotion as phenomena productive of social and cultural relations. Hybrid geographies (Whatmore, 2002), and a site-based ethics are then introduced as foremost in shaping how I approach studying the vet school geographically. This direction of approach also allows me to trouble anthropocentrism, to include nonhuman animal agency, and take affect and emotion seriously within veterinary practices. I highlight how the concept of affective atmospheres is particularly useful for understanding the spaces of the vet school. The chapter’s focus then shifts to think through how recent conceptual debate enables me to critically consider new materialisms. The subtle and yet significant ethical differences between nonhuman materials and lively animals are also noted. This section situates the thesis in the realm of ontological politics and the more-than-human. *Care, Harm, Empathy* focuses more on the geographies and ethics of care that need to be considered as part of my critical re-working of a veterinary education. It begins by exploring key animal ethics debates (e.g. utilitarianism and animal rights), before discussing how these concerns relate to a feminist ethic of care, ecofeminism and critical animal geographies. Scholarship from Science and Technology Studies (STS) and medical humanities is considered, and valued

for enabling a critical stance on the conceptualisation of care and empathy. This is taken further through a consideration of STS-inflected geographies of animal care (Davies, 2012; Greenhough and Roe, 2011), which show how a relational ontology of animal care and more-than-human empathy can be made possible.

Chapter 3, entitled '**Re-framing veterinary medicine as sensuous science: a tentative more-than-human methodology**' outlines the methodological approach adopted for this study. It explains how I developed a methodology appropriate for investigating more-than-human geographies, whilst at the same time navigating the structured institution of the vet school. After describing my entry into, and positionality within, the vet school, I explain the conceptual basis of a more-than-human methodology. I discuss the issues with science-based research with animals and propose an affective attunement with animals – focusing on more-than-human relations as opposed to the presumed cognitive abilities of animals – as a central methodological approach to investigate the multispecies vet school. The chapter continues with a walk-through section, '*An institutional journey: working through, with and against the vet school*', in which I detail my practice-based multispecies ethnography of the vet school. This requires a comprehensive account of how I identified, accessed, and worked within, the four key study sites of the vet school; in the process developing materially-engaged ethical interventions with dead animals and shadowing a 5th year vet student within the Small Animal Hospital (SAH). I also explain how I carried out interviews with students and staff within the vet school and highlight some of the difficulties of talking-about-doing and researching feeling. This chapter ends with a discussion about the role of creative non-fiction writing in geography and how I developed my own writing practice which aims to evoke versions of more-than-human life in the vet school, rather than explain it away.

Having set up the theoretical concerns and the methodological approach of the research project, the main empirical chapters move into the vet school itself. **Chapters 4, 5, 6 and 7** unfold as a critical exploration of the more-than-human ethics of the vet school.

In Chapter 4, '**We begin in the lecture theatre**', I introduce the reader to the early stages of the BVMS degree. The emotional and affective geographies of the lecture theatre are shown to create an educational atmosphere separate from the 'real world' and in doing so, fix animal bodies as knowable scientific objects. These ethical and emotional boundaries within the lecture theatre are also created in relation to veterinary professionalism. The lecture theatre does not manage to fully enclose the uncertainty of

working with the more-than-human however and throughout the chapter, other ethical possibilities become evident.

In **Chapter 5, 'Underneath, the anatomy lab awaits'**, I move into a more advanced phase of study associated with a practice-led site of the BVMS degree. Unlike the dimmed lecture theatre, in the anatomy lab is bright, clinical and full of monsters. This chapter describes and explains the practice-based aspect of working with dead animal bodies and model analogues within the vet school. As I move through the anatomy theatre and work with students and specimens, I discuss how students develop distinct haptic knowledges that draw them into mutable relations with their nonhuman specimens. Focusing on this site shows that students begin to recognise that science does not have all the answers and that the veterinary reality can be one marked by ethical uncertainty. To finish, this chapter suggests that enlivening these seemingly deathly human-animal relations could be considered a site of more-than-human empathy within the vet school.

Chapter 6, 'On the university farm', shows the tension between care and harm in starker relief. The university farm is a key site within the vet school and an important stage of the BVMS degree – it is here that students learn about and adapt themselves through farm life. This chapter begins by explaining the economic-legal geographies that order and control the university farm. Following discussions with the farm's Director, I then enter the farm in company with the students, and account for the lived tensions between control and mutability that shape farm life. Whilst the farm's regulatory regime forecloses the livestock I encounter, limiting their agency and directing students towards versions of "farm professionalism", there are moments when cattle push back, showing that the ethical terrain is not set prior to their involvement. In important discussions with the farm's Director and animal welfare lecturer, I reveal how discourses around empathy in 'large animal' veterinary medicine seem to control more-than-human empathy.¹⁰

Inhabiting the same tensions, I suggest how an affective animal husbandry – one focusing on intimate and embodied caring practices *between* species – might provide a way out of dichotomous discussions in animal and care ethics on the university farm.

Chapter 7 moves '**Inside the Small Animal Hospital**' as I work alongside a 5th year BVMS student. This is the final year of the BVMS degree and the responsibilities of the SAH reflect this advanced stage of study. In this chapter, I consider what the veterinary

¹⁰ Please see the Glossary for the definition of 'large animal'.

clinic might be in terms of a site-based, more-than-human geography. Firstly I investigate how my partner-student (Natalie) and other SAH staff diagnose a sick dog. Contrary to how diagnosis is portrayed in veterinary medicine, I demonstrate how the work of diagnosis is a fluid and multispecies practice marked by ontological contingency. Thereafter, I explain the affective geographies of a class on communication skills, discussing how this activity creates a form of veterinary professionalism promoting emotional resilience, and which helps the SAH to function. Given this human-centred schema at the heart of operations in the veterinary clinic, I consider its alternative: the SAH as a facility experienced by nonhuman animals. In this speculative experiment, I assume the position of a small dog tracing its journey through the hospital's diagnostic spaces. The chapter closes by asserting that the SAH is a site promoting a particular version of veterinary professionalism - through its emotional and affective geographies - that sets limits on communication with animals, and disavows emotional excess.

To conclude the thesis I consider the merits of '**graduation in more-than-human veterinary medicine**'. Variously, I provide some final reflections on the four sites of the vet school, take stock of some of the study's limitations, and highlight what insights my research project provides, respectively, for veterinary medicine and for human geography. For veterinary medicine, I propose the thesis sets an agenda for a 'veterinary medical humanities' and a more critical approach to veterinary education. In human geography, I argue that my research contributes to the conceptual configuration of a more-than-human geography of care, and displays the productive deployment of creative non-fiction ethnographic writing. The thesis closes with a statement on what I believe encompasses a more-than-human geography for 'as well as possible worlds' (Puig de la Bellacasa, 2017).

2. 'Try again, try something a bit different, be attentive': conceptualising new ethical approaches for veterinary medicine

Introduction: a literature review in two parts

This chapter details the conceptual framework I have developed in order to give structure and direction to this research project. Social theory is fundamentally important because it draws attention to the intellectual history of key themes in my work. While this chapter does consider specific fields of conceptual thought and how they informed my research objectives, it is important to note that, at a more general level, my thesis is concerned with how the processes of theory building and the processes of doing are entangled. The aim of this thesis *as a whole* can be considered as a series of theoretical and ethical re-workings: of the animal in veterinary medicine; of affective practice in the profession; and, of anthropocentric concepts of care and empathy.

In order to stay with the central issue of ontological and ethical uncertainty, this literature review is framed through the meta-question of 'the status of the animal': how do these concepts that follow help us not necessarily to understand, but *live with* the animal? In this way, the animal is always a part of the theory-making and is not an add-on to more legitimate, human-centred conceptual histories. This approach means that the animal is not just deployed as a philosophical device through which we re-confirm our human exceptionalism (Buller, 2014). (I find it easy to work for hours, passively aware of my cat asleep on the sofa, until I see her ribcage expand and deflate and I realise she has been doing this all the time, of her own capabilities. This observation, I should add, is not offered as a metaphor.)

In terms of its organisational structure, this chapter is arranged thematically, as opposed to being ordered via subject-specific areas. The fields of literature reviewed include parts of human geography (especially cultural geography), but also I reach into the multiple interdisciplinary traditions of: affect studies; feminist geography/studies; STS (Science and Technology Studies), medical anthropology/humanities and animal ethics. These subject areas come together and are structured into two central themes within the chapter – *Affect, Ontology, Matter, and, Care, Harm, Empathy*.

Affect, Ontology, Matter situates this conceptual framework in debates on the non-representational, relational ontology and materiality. It begins with an overview of the recent histories of non-representational and emotional geographies and how 'feeling' – encompassing a sensorium of emotion and affect – came to be centrally positioned in contemporary cultural geography. Doing so positions this research within a disciplinary history of geographical theory and explains the heritage of ideas that have come to frame the thesis.

A more explanatory discussion follows on the meanings of relational ontology, affect and materialism, from within geography and beyond. How have these terms changed the conceptual landscape of geography, the subject matter of research and the possible modes of enquiry? Here, I focus on new languages and praxis in geography including site-based ethics, object-based ontology and affective atmospheres.

Discussion is then drawn into thinking about how the development of non- and more-than-representational geographies and 'affect studies' is co-produced with new ethical, political and creative approaches to materialism and more-than-human geography.

Care, Harm, Empathy develops the second strand of conceptual enquiry within this research project. This theme takes up the issue of how 'the animal' and 'care' have been woven together, drawing upon different theoretical and ethical approaches. First, I consider the development of the animal rights movement and the explain early seminal theories of Peter Singer and Tom Regan, before bringing in the concept of 'zoopolis' as a way of talking about animal rights, interests and citizenships.

A different approach to animal care is introduced through the emergence of a feminist ethic of care (Gilligan, 1982; Tronto 1993) and associated ecofeminist thought. Both understandings of what it means to be animal and the notion of care are argued critically and radically but more along the lines of feminist critiques of care. The focus shifts from how ideas developed in ecofeminism to adaptation in human geography, specifically through critical animal geographies and vegan geographies.

The chapter then draws the two themes together. I explain how the concepts of care and more-than-representational theories can be bridged through the critical analyses of caring and medical practices. This final section is concerned with medical caring practices, professions and structures of care of relevance to the research project, namely: medicine

and medical/health research, and how they have been researched in the social sciences and arts and humanities. It is here that science, care and emotion are most clearly brought into correspondence. STS approaches are considered with a focus on the work of Bruno Latour, Donna Haraway and Anne-Marie Mol, and how the latter researched medical practice from a relational ontology approach (Mol, 2002). Before my concluding remarks, this section takes its natural route to how animal care practices have been researched in human geography through essential reference of Gail Davies, Beth Greenhough and Emma Roe. Within this fusion of experimental more-than-human ethics, affectively-engaged sensibility and analytical understanding of cultures of care, my research finds a suitable fit.

Affect, Ontology, Matter

On context and positionality: is cultural geography in a 'post non-rep' landscape?

Reflecting on a decade and more of disciplinary activity, Lorimer (2015) considers whether non-representational geography still retains its initial paradigm-challenging buzz. The language of this sub-discipline is by nature urgent and effervescent, but it must be noted that the early work in non-representational geography began around the year 2000 (Thrift and Dewsbury, 2000). Eighteen years having passed, is cultural geography now a 'post non-rep' intellectual landscape where the key tenets of the theoretical approach are mainstreamed and taken for granted?

My own observation is that, rather than suggesting we have necessarily consumed non-representational theory (NRT) whole or in favour of something better, NRT can be reflected upon and its influence can be appreciated in far flung corners of academia. While my own geographical heritage is, partly, derived from non-representational cultural geographies, it does not feel accurate to write about this diverse theoretical field of concern as if the contemporary situation is the same as in 2000, as though NRT is something brand new. A reflective mood cast over these histories is more appropriate and timely, as is a better acknowledgement that the world-creating properties of 'the non-representational' did not just come into being when it was given a language of 'pipes and cables' (Thrift, 2004) in the Anglophone academy.

Non-representational geography has stayed with me because it has opened up the new literatures and conceptual worlds of affect studies, more-than-human debates and creative methodologies that went some way towards defining this research project. I try to move on, but I still come back to Lorimer's much quoted and ever relevant problematic: how can "shared experiences, everyday routines, fleeting encounters, precognitive triggers..." be meaningfully dealt with (2005: 84)?

It is this quote – which blends the emotional and affective instead of setting them against one another – which perhaps guides this chapter most. This statement on disciplinary context and positionality is my way into the exercise of reviewing consequent literatures.

Concepts with and for 'feeling'

The humanistic basis of emotional and affective geographies

Theoretical interest in 'feelings' – the intangible relations which form our social, cultural and political lives – arguably begins in contemporary human geography during the 1970s, with the rise of humanistic geography. By adapting the phenomenological theories of Husserl and Merleau-Ponty (Wylie, 2007) human geography began exploring alternatives to the positivism of earlier spatial science. Humanistic geography challenged the ontological divides of subject and object through the concept of place-based subjectivity - when one's perception of space and place cannot be contained within definable categories or within one's own mind (Seamon, 1980). This experiential human geography, concerned with how feelings, perceptions and values shaped our geographies can be attributed in part to Anne Buttimer, who noted how:

"To the enthusiast for scientific rigor, 'lived experience' may appear as a phantom on the horizon, still resistant to conquest; a presence nonetheless which threatens to complicate if not divert the charted course of objective science" (Buttimer, 1976: 278).

Then still emergent, Buttimer's approach was vital because it made the case for embodied, lived experience, as a way of acknowledging the complexity of geography, and for how it brought a new spatial language into the discipline. 'Place' is of particular importance to humanistic and phenomenological geography. As a phenomena, place is shaped by agencies, sensed through the perceptions of body and mind, as opposed to being a co-ordinate on a map (Tuan, 1974). 'Space' too is created through human-centred experience instead of being the inert 'natural' backdrop against which humans operate.

This early theoretical heritage in phenomenology provides human geography with the means to ask questions about emotions, affect and intangible yet entirely productive spatial relations. While I do not make extended use of humanistic geography on the basis that it focuses on anthropocentric perceptive abilities and centres agency in humans, undoubtedly it created conditions fertile for the emergence of emotional and non-representational geographies.

I want to be careful to avoid suggesting that emotional and non-representational geographies have entirely differing beginnings, conceptual bases and trajectories. It is too simple to suggest that emotional geographies preceded non-representational geographies, or that the former is concerned with 'emotion' and the latter with 'affect'. In this thesis I use both terms. There are however, different genealogies that need to be acknowledged when referring to these recent developments in geographical theory.

Emotional geographies have a distinctive origin-point in feminist critical analysis where serious consideration of emotion is figured as a political act, following a long history of its condemnation and dismissal. Rejected as feminine, unimportant, subjective, of the body, private and irrational, emotion has commonly been ignored in public life, in politics and in geography. In a ground-breaking commentary, Anderson and Smith (2001) turn this situation on its head, asserting that emotion is in fact always tied up with power and politics, and thus by drawing attention to emotion, it is possible to challenge unequal, patriarchal power relations. Emotions are to be taken seriously: they are not histrionic, they do not exist in theory-free space and they are creative of specific power geometries (Tolia-Kelly, 2006). What is particularly important about a feminist geographical understanding of emotion is the latter point: that there exists a spatial division of power in relation to emotion. This is a view advanced by many geographers as the key purpose of emotional geography (Tolia-Kelly, 2006; Parr, Philo and Burns, 2005) with pioneering research by, for example, Valentine and Skelton (2003) on negotiating gay and lesbian spaces and Tolia-Kelly (2004; 2006) on emotional landscapes and postcolonial identities.

Non-representational geographies developed within this 'emotional turn' and are linked to the 'crisis of representation' occurring within geography, its cognate subjects, and a wider milieu of cultural theory. Non-representational geographies, as suggested by the name, are concerned with how geographical phenomena exist beyond their social and cultural representation, and question the legitimacy of a focus on the symbolic aspects of culture as a whole. Central to early debates on non-representational theory, Thrift and

Dewsbury (2000), argued that human geography had over determined a discursive approach and a search for meaning: “Human agency and identity became a cipher for the operation of a relatively fixed set of power relations operating via performed social codes and categories...” (Wylie, 2007: 163). Here it should be noted that by adopting *nonrepresentational* theory as a label, the intention was not necessarily one of transcending representation. Rather it is about how standard, ‘representational’ techniques such as writing and visual methods can be creatively manipulated to create ‘more-than-representational geographies’ (Lorimer, 2005). Specific aspects of this argument are revisited in the thesis’ Methodology chapter.

My understanding of the ‘more-than-representational’ and why I consider it so useful, is because it helps adjoin the conceptual histories of emotional and non-representational geographies to a wider ‘emotional turn’ in social research. Having sketched the background to these concepts, I will continue by considering how the non- and more-than-representational (and its wider, multi-disciplinary influences and philosophies) have changed cultural geography, and how these developments are of particular consequence for this research project.¹¹

Affect and relational ontology

Understanding non and more-than-representational theory hinges on the conceptualisation of *relational ontology*. The characterisation of relational ontology involves a greater consideration of how beings are ontologically created through intangible relations such as affect, as a way to challenge the epistemological and representational focus on structures of knowing. A key stimulus to this new ontological understanding has been the philosophy of Gilles Deleuze, in particular his ideas on movement and the creative tension between ‘things’. As Thrift and Dewsbury state: “he wants to show or create the kind of space of movement that is prior to the representation of static objects” (2000: 417). This is where the language of non-representational theory seems to gain its urgency – the aim is to interrogate the nature of being and how we come to act upon one another, exceeding a realm of representation. In this way, non-representational theory is always grasping for something which cannot necessarily be seen and which is always mobile. It is a mood, or mode, expressed well by John Wylie:

¹¹ Throughout this chapter I use the terms ‘non-representational’ and ‘more-than-representational’ interchangeably, although I am always aware of the development of each of these terms.

“And so you run and grope to catch it, but you can’t catch it, because it will flutter and skitter away, almost on purpose, as if alive, such that when and if eventually you do catch it, it still remains, even in your hands, something essentially lost and out of reach.” (Wylie, 2009: 281).

The thing in question in this quote could be imagined to be *affect*. Like emotion, affect as a term of feeling is ambiguous and often used interchangeably with emotion (Horton and Kraftl, 2014). Some would claim this lack of distinction is problematic and that affect is conceivably different from emotion (Thien, 2005). Anderson (2006) explains that emotion is separate from affect in the way that emotion is the cognized, named and arguably objectified recognition of pre/non-conscious affect. Pile (2010: 13) emphasises the importance of this point: “Splitting, or not splitting, thought from affect is the central fault-line that distinguishes emotional and affectual geographies”. However, Anderson (2006) also adds that there is never a linear relationship between affect and emotion - emotion is not the precise representation of some deeper, pre-cognitive affect. Most importantly to the understanding of relational ontology, affect is never subjective and no one body produces it. Affect occurs only in relation to other bodies. Drawing again from Deleuze and his re-working of Spinozan ethics, *bodies are always affected and affecting*: “Affect is again...in constant variation, not so much a state as the ongoing “passage from one state to another” (Deleuze, 1988: 49).

It becomes difficult to pinpoint – spatially and temporally – how things come into being and how geographies arise through relations. McCormack (2003) attempts to figure out how this attention to the relational shifts geographical praxis when he writes about Dance Movement Therapy (DMT) as ‘an event in geographical ethics’. By taking part in DMT – a dance practice focusing on performing bodily movement to allow for ‘better’ expression of feeling - McCormack comes to the realisation that practicing DMT and then trying to conceptualise it so that it could be made theoretically relevant changed the practice in itself:

“It seemed that while...it was movement that was the important thing, the sense of this movement disappeared when one tried to capture it through meaningful reflection.

So I stopped trying” (2003: 493).

Instead of translating movement into a coded explanation of the affective practices of DMT, McCormack reverts to a thick description of the shared movements with others, so that *ethical negotiations can be considered in the event*, without the pressure of

representing them. For him, affect moves through tactile experience with others but it is impossible to pinpoint exactly when and how this occurs. He continues:

“...what I needed to do was to become responsive to different surfaces of attention rather than seeking to go behind or beyond them, that the intensity of such attention could be as important as depth of insight, and that what one folded into an encounter with DMT was as important as what one found out” (2003: 493).

Affect is thus a form of feeling that is held afloat through interacting bodies – their movements, touches and emotional reflections, both non-verbal and verbal (Paterson, 2007). The work of Massumi (2002) is central to the development of affective geographies, in particular, his conceptualisation of embodied intensity. Massumi is concerned with the interrelation between autonomic sensation and conscious thought or what he calls the ‘expression-event’:

“Nothing is prefigured in the event. It is the collapse of structured distinction into intensity, of rules into paradox. It is the suspension of the invariance that’s makes happy happy, sad sad, function function, meaning mean” (Massumi, 2002: 27).

This new attention can give the effect of our relations being free-floating and nebulous, and indeed there has been some critique that non-representational geographies are apolitical because they seem to bypass social structures (Sharp, 2009). Affect has been shown to be malleable and ‘sticky’ however (Ahmed, 2004). It can be manoeuvred for certain political ends and, crucially, can weave relations of power. Again, it is Massumi (2002) who offers an essential perspective on affective politics when he states the importance of affect theory in relation to ‘postmodern power after ideology’:

“It (ideology) is now one mode of power in a larger field that is not defined, overall, by ideology. This makes it all the more pressing to connect ideology to its real condition of *emergence*” (2002: 42) (emphasis own).

Furthermore, it is illustrative to consider his reflections on how a fear of terrorism beyond the physical acts of terrorism is affectively mobilised through what he calls ‘the political ontology of threat’ (2010):

“As the series proliferate, the distinction between the series of actual attacks and the series of threat-events blurs...The terrorist series includes

torpedoing buildings with airplanes, air missile attacks, subway bombs, suicide car attacks, roadside bombings, liquid explosives disguised as toiletries, tennis-shoe bombs, “dirty bombs” (never actually observed), anthrax in the mail, other un-named bioterrorist weapons, booby-trapped mailboxes, Coke cans rigged to explode, bottles in public places... The list is long and ever-extending. The mass affective production of felt threat-production engulfs the (f)actuality of the comparatively small number of incidents where danger materialized. They blend together in a shared atmosphere of fear (2010: 61).

This is important as Massumi’s point about threat and the physical realisation of the terrorist attacks means that when terrorist attacks do in fact happen, it is difficult to implicate responsibility as the affective capacity of fear spreads through time and space, thus making it difficult, or indeed impossible to locate any particular moment where fear ‘turned into’ an act of terrorism. It is Massumi’s political slant on affective geographies that provides a vital rebuttal to the criticism that affect theory is uncritical, and which has been crucial in the development of political ontologies in human geography (Anderson and Adey, 2011; O’Grady, 2019). This relational way of understanding affect and politics has been imagined in the case of hope (Anderson, 2006), shame (Probyn, 2010), happiness (Ahmed, 2010) and cruel optimism (Berlant, 2011). This optimism becomes cruel when its affects resonate through social and cultural structures, but are never materially realised, in a similar vein to Massumi’s account of threat.

Hybrid geographies and site-based ethics

Having explained the philosophical basis for relational ontology and the role that affect plays therein, I now turn to a consideration of how this relational (or networked) approach more clearly enlivened geographical research and praxis. Sarah Whatmore’s (2002) concept of ‘*hybrid geographies*’ is amongst the most important explorations of how relational ontology and non-representational theories impact upon geography. Melding together non-representational theory, science and technology studies (STS) and actor network theory (ANT), and literatures on corporeality based in phenomenology and feminist studies, hybrid geographies:

“takes a radical tack on social agency manoeuvring between two theoretical commitments. The first is to the de-centering of social agency apprehending it as a ‘precarious achievement’ spun between social actors rather than a manifestation of unitary intent (Law, 1994: 101). The second is to its decoupling from the subject/object binary such that the material and the social intertwine and interact in all manner of promiscuous combinations” (2002: 4). (emphasis own)

While a troubling of the Cartesian division of subject/object has its roots in phenomenology, what is of particular note is the way Whatmore extends intersubjectivity beyond human relations. This ethical task is made possible through the ‘de-centering of social agency’, whereby agency is no longer resides in the rational, human self but is extended into new ethical planes. Whatmore argues that some feminist and ecofeminist approaches to relational ethics are based on:

“‘embodying’ or ‘enlarging’ the company of ethical subjects are often thwarted by a residual humanism that condemns them to trafficking between (human)/society and (non-human)/nature as pre-constituted domains of categorically different kinds of being” (2002: 165).

This is then a call for a *radical* re-thinking of what it means to ethically relate to one another and with other things beyond notions of human difference, leading to new concepts of more-than-human being. Praxis in geography thus moves away from place and space being socially constructed through human meaning and relations, to these terms being constituted by socio-material practices:

‘The spatial vernacular of such geographies is fluid, not flat, unsettling the co-ordinates of distance and proximity; local and global; inside and outside. This is not to ignore the potent affects of territorializations of various kinds, just the reverse. It is a pre-requisite for attending more closely to the labours of division that (re)iterate their performance and the host of socio-material practices – such as property, sovereignty and identity – in which they inhere” (2002: 6).

This move draws attention away from hierarchical ways of understanding spatial and temporal relations, towards a language of hybridity. Additionally, the conceptual orthodoxies associated with scale come into question through Marston *et al*'s (2005) proposal of a ‘flat ontology’. Marston *et al* (2005) state that the concepts of scale, be that hierarchical scale or “models that integrate vertical and horizontal understandings of socio-spatial processes” (2005: 420) do not suffice when taking relational ethics seriously in human geography, hence the term ‘flat’ ontology. As an alternative, Marston *et al* (2005) propose, and Woodward *et al* (2010) develop, the term *site*. Neither just a physical co-ordinate (the local) nor ‘wider’ global processes, a site is a spatial-ontological tension simultaneously producing and being produced by socio-material processes. Sites thus arise “only in so far as we can follow interactive practices through their localized connections’ (Marston *et al*, 2005: 425). Importantly, sites are also oriented by “localized

and non-localized *emergent events* of differential relations actualized as temporary – often mobile – ‘sites’ in which the ‘social’ unfolds” (2005: 423) (emphasis own).

To ground these philosophical claims it is important to remember that a site-based ontology and ethics is situated in the political and in practice:

“...site ontology does not endeavour to reduce all relations to physics, but rather to open the processes and hangings-together of every site to the socio-ethical questions of work. Recalling Spinoza’s famous notion, if the ‘ethics’ of a body is a question of ‘what can it do?’, the politics of site ontology explores how the variations and degrees of labour constitute its composition” (Woodward *et al*, 2010: 274).

The notion of the site is central to this thesis and is the primary spatial configuration that is used throughout. Sites are used to organise the empirical chapters where the fabric of the vet school (lecture theatre, practical classrooms, farm and hospital) is not just comprised of physical spaces, nor solely its social construction, but a means to understand the more-than-human, site-based practices of veterinary education. Sites are thus not to be conflated with places. Moreover, sites can also be found as bodies and diseases. In sum, I use sites as a more-than-human mode of investigation into veterinary practice – they are always considered as a point of ethical conversation and reconfiguration.

This is appropriate because site is inherently more-than-human, relational and suitable for explorations of how veterinary medical practice comes into being via multiple actors, materials, and affective and emotional processes. It prompts me to consider how veterinary medicine – usually defined by its scientific objectivism or anthropomorphic emotionality – might resist such ontological and epistemological fixity and offer possibilities for challenging existing power relations.

Affective atmospheres

As a part of discussions about ‘site’ as a means of geographical investigation, the concepts discussed here have led to further, more critical formulations of ‘atmosphere’.

Atmospheres, as a crucial aspect of site-based ontology, have been imagined primarily as a way of conceptualising how affect and emotion might hang in the air, creating and influencing a sense of collectivity (Anderson and Ash, 2015). Anderson (2009) in particular discusses how ‘affective atmospheres’ have the potential to destabilise

subjectivities while also helping us to explore intensities of what might also be called 'aura, mood or ambience' (2009: 79). Although both a product and producer of affect and emotion, atmosphere better attends to the power of collective feeling to push back, as when Anderson wonders: "How does an atmosphere 'envelope' and 'press' upon life? How, put differently, to attend to the collective affects 'in which we live'?" (2009: 77).

The force-full nature of atmospheres offers a link into Shaw and Meehan's (2013) adaptation of object-oriented philosophy whereby objects are "brimming with affect, productive of difference and generative of power" (2013: 220). How then might atmospheres – as trans-human affective entities – generate more-than-human practices and knowledge in veterinary education? Certain affective sensibilities are key to understanding veterinary medicine, the likes of: hope and faith in medical treatments; the learned intuition of 'knowing what's wrong' with an animal patient; the existential melancholia of failure as well as the more animal-relevant anxiety of being in the care of unknown people, places, and machines, and the tactile sense of trust between human carer and animal. Although some of these affective qualities that arise from/with atmosphere may seem anthropocentric (such as sensing failure), an atmosphere always:

“... disrupts the dichotomy between individual and environment, biology and technology. Both subject and object exist in shifting halos of more-than-human force relations. An atmosphere can therefore be understood as the space of an objective discharge — an existential envelope in which the organic is mediated, transferred, and extended by the inorganic” (Shaw, 2016: 698).

Understanding atmosphere as a geographical concept thus requires attunement to the rhythms of becoming and a form of tactility, not just with surfaces of bodies (although the body is always central in these discussions) but with the textures of movement, absence and presence. McCormack's (2013) conceptualisation of rhythm and refrain are similar here, although there is perhaps a greater focus placed on moving bodies and choreography. The absence and presence inherent in atmosphere therefore complicates time as well as providing a way of grasping the spatialities of affect and emotion, as is well evoked by Kathleen Stewart (2011: 31):

“The more-than representation, the more-than what we know, stretches out into nether lands and then snaps back to the register of sensory phenomena and compositional leaps. It catches attention, sets off lines and habits, spreads into an ecology of paths that matter by means of the things that happen”.

Atmosphere is evidently ephemeral, difficult to theorize and difficult to write about. Much of the debate on affective atmospheres centres on methodological issues – in naming something an atmosphere, does it necessarily become a backdrop for social relations or an object of analysis? As Anderson and Ash (2015) point out this tension is not unique to atmosphere but is an issue in wider non/more-than-representational methodology. The different ways in which atmosphere (and other affective ‘things’) have been methodologically engaged with is discussed within the Methodology chapter of this thesis.

Many questions remain to be asked of affective atmospheres – can they be used with any level of confidence when so much ambiguity issues from the concept? How many different terms will we come up with to describe that which we feel in body and mind, which feels *important and generative*, and yet continues to escape us theoretically and methodologically? Nonetheless, what seems of importance is how atmosphere provides the opportunity to go beyond the sometimes overly individualised and machinic arguments about affect whilst also challenging the human-centred and representative understandings of emotion. I acknowledge atmosphere’s nature in this thesis – one moment it’s there, the next it’s gone – by recognising that my use of the term is a creative exploration and not necessarily an ‘answer’ to my research questions. This speculative ethical mode is central to the thesis.

Aside from explaining why these theories – widely described here as ‘non-representational’ but evidently inclusive of wider debates on ‘feeling’ – are useful for investigating to this project, I have demonstrated how they invoke the meta-question of ‘the animal’. Despite this, there are some key issues related specifically to animals and materiality requiring fuller explanation.

Returning to hybrid geographies: cyborgs, materiality and animals

Animals and the non/more-than-human

While I have already considered how Whatmore (2002) extends agency into the nonhuman and how this has led to site-based ethics and new, more-than-representational modes of inquiry, more needs to be done on what this ‘nonhuman’ might actually encapsulate. Who are the ‘subjects’, so-called, of these concepts? To do so, requires further engagement with Whatmore’s geographical take on Donna Haraway’s notions of hybridity and the ‘cyborg’.

Alongside opening up geographical research to that which affects us prior to representation, hybridity destabilises the differences between human and animal, providing space to ‘bring the animals back in’ (Philo and Wilbert, 2001). Hybridity does not mean to say that animals and humans are the same but rather as beings they are co-productive and enabled through the ontological tensions between sameness and difference. This hybrid being is a ‘cyborg’ which: “articulates a political vision which appreciates the unstable and porous bodies between human, animal and machine and the multiple modalities of subjugation that such an appreciation brings into view” (Whatmore, 2002: 159).

The cyborg thus allows us to respect our co-mingling relations and gives us ethical tools to challenge an enduring ontological separation between the human and the animal. The questions arising from this challenge are multiple: what are the socio-material practices that make up ‘the animal’ or ‘the human’ in a specific site? How do these practices offer alternative narratives to what tends to be considered ‘human’ or ‘animal’? This contrasts with a concern articulated in earlier versions of animal geography with the social construction of animals *by* humans. Before explaining the aims of current animal geography and why it is important to focus specifically on the lives of animals in research, it is necessary to consider another form of nonhuman agency, and the return to materialism in human geography.

Vibrant matter

The political act of extending nonhuman agency does not just apply to those we consider ‘living’, breathing animals but to supposedly inanimate ‘objects’.¹² In a framing where there is no discernible division between subject/object, this makes sense. Such a move to re-enlivening nonhuman matter within greater networks or assemblages is termed ‘new materiality’ and is captured in Jane Bennett’s (2010) choice of term ‘vibrant materialism’. For Bennett, nonhuman things affect and are affected by wider more-than-human structures and nonhuman things, and so demand re-configuration as vital actants:

“By ‘vitality’ I mean the capacity of things – edibles, commodities, storms, metals – not only to impede or block the will and designs of humans but also to act as quasi agents or forces with trajectories, propensities, or tendencies of their own” (2010: viii).

¹² I am not referring here to Shaw and Meehan’s (2013) concept of ‘object’ but the more conventional meaning of an object as an inanimate thing.

Where Bennett becomes most radical is in her conceptualisation of ‘thing-power’, the uncanny ability of an object to assert its agency and demonstrate its more-than-human capacity to affect.¹³ When she comes across a collection of rubbish in the street, Bennett is struck by the strange vitality of the objects that ceased to be inert through their relation to each other and to her: “This composite of glass, skin cells, glue, words, laws, metals, and human emotions has become an actant” (2010: 9).

Bennet (2010) is pivotal to a wider turn towards ‘new materialism’ in cultural theory. New materialism has been adopted and adapted in human geography, particularly discussions relating to more-than-human geography (Krupar, 2012) and historical geographies (DeSilvey 2007), although it is also fair to say there has been, in parallel, a broader ‘rematerialising’ of the discipline (Anderson and Wylie, 2009). Far from being a purely abstract endeavour then - replete with inconceivable trans-human monsters - the more-than-human is as preoccupied by the material interactions with tangible things, as ‘intangible’ affects and atmospheres. Dixon (2008; 2016) and Dixon and Ruddick’s work (2013) on monstrous geographies and feminist material geopolitics is relevant here, for the way it analyses how ‘monstrous’ beings are made through material practices of biotechnology and art. For Dixon, materially engaged monstrous geographies are both full of existential possibility and horror, both mundane and wonderful. This a sensibility and approach I enlist during my investigations into veterinary practices, and which resonates particularly in Chapter Five.

On skilled practices

Having detailed these new materialisms, it is now timely to explain more about the *practice-based geographies of (more-than-human) skill*: with veterinary medicine so frequently described as both an art and a science, it is essential to consider how these two seemingly opposed skills intertwine in practice.

Central to understanding skill from a more-than-human perspective is Ingold’s (2000) critique of false dualisms between ‘art’ and ‘technology’ in Western worlds:

“The source of the problem, in my view, lies not in the concept of art, nor in that of technology, but in the dichotomy between them. It is this, along with the idea that art floats in an ethereal realm of symbolic meaning, above the physical world over which technology seeks control, that is tainted by its

¹³ This form of agency is not the same as ‘subjectivity’.

association with modernity. The idea would have made no sense to the craftsmen of ancient Greece or Rome. They new what they meant by *tekne* or *ars*, and it was a matter neither of mechanical functioning nor of symbolic expression, but of skilled practice” (Ingold, 2000: 351).

It is thus Ingold’s aim to ground art as sets of practical doings whilst drawing attention to the aesthetic qualities of technology under the concept of skill. Ingold does through his ‘ecological approach’ to skill which better acknowledges how skill is formed phenomenologically, through “... the total field of relations constituted by the presence of an organism-person, indissolubly body and mind, in a richly structured environment” (Ingold, 2000: 353). As such, Ingold re-materialises skill and provides it with a vital, proto-more-than-human angle highly relevant to critically evaluating the science and art of veterinary medicine. Veterinary skill can, following Ingold, be conceived as hands-on experienced engagement with materials, an aesthetic ‘feel’ that brings together perception and action and ‘generates the form’ of a more-than-human medicine.

Grasseni (2007) invokes and builds upon Ingold’s notion of embodied skill and ‘taskscape’ with a distinctly animal focus. A place-based and historically developed study of cattle breeding is carried out by Grasseni, who traces how breeding skills come to light through ‘skilled visions’. Like Ingold, she blends technologies (such as artificial insemination and high-tech milking parlours) with an observational art of aesthetically understanding cattle bodies to form this concept:

“Whilst the traditional skills of animal husbandry were conveyed through domestic apprenticeship, the application of biotechnology and of mechanisation within current farming practices also entails a redefinition of breeding skills” (Grasseni, 2007: 48).

Skilled visions are thus characterised by a learned observational ability to comprehend animal bodies with visual and tactile intimacy, as well as an awareness of how this skill upholds particular taskscape such as animal husbandry. Of particular relevance to veterinary education on farms is Grasseni’s phrase ‘education of attention’. On the topic of cattle breeding again: “Learning to be a breeder implies an education of attention that starts at an early age, a veritable apprenticeship in skilled vision” (Grasseni, 2007: 60). This outlines one such way in which veterinary students might learn to become practically able vets, whose skills imbue distinct place-based histories of animal practice.

Associated with skill, and tied into the objectives of this thesis, are the cultural geographies of education and learning. In their editorial on this subject, Mills and Kraftl

(2016) note how geographies of education are developing but are: “overshadowed by social and political-economic research on spaces and sites of education” (2016: 19). Pre-dating this, Kenway and Youndell (2011) discuss how emotion too is left out of studies on education: “Education is almost always positioned as rational – as as social and epistemic endeavour, as an abstract process, as a set of reasoned and logical practices, and as a series of formal spaces the production and use of which is as ‘uncontaminated’ by emotion as possible” (2011: 132).

As such, increased focus has been on more-than-representational, cultural geographies of learning that look at “what is actually happening within these spaces: be that engagements with nature, landscape, material objects, digital data or other bodies” (Milla and Kraftl, 2016: 20). These perspectives are important to my research as they look beyond how students manage to know more about a subject and instead interrogate the doings of learning, and of the circulation of emotion and affect in learning spaces. Most relevant here is Finn’s (2016) application of affective atmospheres in data-heavy, evidence-based education. Finn considers the individual and collective affective impact of data-driven progress in schools and how atmospheres produce ‘progress’ through socio-material practices with data. The outcome is an understanding of education which is less easily measured yet just as vital as quantitative data about student progress, and that this process of quantification in itself produces collective feeling in educational spaces. This work on geographies of learning is highly relevant to veterinary education as students must learn a respect and understanding of evidence-based medicine whilst developing the embodied skill to ‘read’ atmospheres in vet-client-animal relations.

On the distinct liveliness of animals

After extended consideration of the ontological challenges of representation, taking in debate on a fuller appreciation of human subjectivity to new materialisms, monstrous geographies and embodied skill, it may seem timely to leave ‘the animal’ behind in the name of the more-than-human. Philo (2005) however offers a different yet essential critique of Whatmore’s *Hybrid Geographies* (2002). Acknowledging Whatmore’s theoretical re-framing of ethical relations, such that the more-than-human is conceptually enlivened, Philo contends that the liveliness of animals – as different species and not just as part of a wider more-than-human assemblage – is somewhat lacking:

“And yet, might it not be that the animals—in detail, up close, face-to-face, as it were —still remain somewhat shadowy presences? They are animating the stories being told, but in their individuality—as different species, even as individuals—they stay in the margins more than is the case for humans in, say, the qualitative and cultural turns of the discipline over recent decades” (Philo, 2005: 829).

Philo speculates if the worlds that Whatmore portrays could have been shot through with more evidence of animal agency, based upon ethnographic engagement with animals, potentially the sort of ‘dwelt animal geography’ (Johnston, 2008) indebted to the ecological anthropology of Tim Ingold (2000). Here lies the case for a sustained focus on animal agency within a more-than-human framework, which is seen in the evocative work of Jones with cattle (2013) and Lorimer with seals (2010) and reindeer (2006). Here emerges a focus on the lives of animals that does not negate the non-representational project. Animals continue to be under-represented in social and political structures and their sentience is never quite taken for granted, as seen in the political debates about animal welfare laws within the United Kingdom (UK) (BBC News, 2018). Animals thus require lively representation, not least because this focus on dynamic becoming is central to the more-than-representational project, but to issue a reminder that animals are breathing, hairy, slimy, smelly creatures capable of *feeling*.

There is however a risk of anthropomorphism in animal advocacy as animals do not speak the same verbal languages as humans. The issues that nonrepresentational geographers have with social constructionist approaches are similar to those in animal and more-than-human geographies – there is always mistranslation and the presumption that logical structures of knowledge are more legitimate than affective and emotions relations. The challenge then is to be aware of this wavering line between representation and evocation of animals’ lives, and to work with it. This central tension between the political recognition and advocacy of animals, and the problems of anthropomorphism and representation is dealt with in greater detail in the section to follow, and the thesis *Methodology*.

This section has explained how ‘feeling’ is now treated with due seriousness within social research, and has detailed the various ways in which geographers and others have conceptualised this within non- and more-than-representational traditions. Through relational ontology, hybrid geographies and a new focus on site-based ethics, the more-than-human has become a central way to understand how our worlds are made up. Consequently, it is no longer humans alone who make decisions about what happens (as if

it ever was). Research now investigates how non-humans might affectively 'act back' in fields of relations comprised of sites, atmospheres and objects. Forms of difference cannot, and should not, be entirely erased, and it remains strategically important to focus on tactile relations with animals as part of the more-than-human project.

Having established how more-than-human worlds are created and theorized, and how this opens up new discussions about nonhuman animals, affect and emotion, it is now appropriate to turn to the chapter's second field of literature – Care, Harm, Empathy – concerned with how to better *care* for these individuals, networks and worlds.

Care, Harm, Empathy

The messy moral terrain of animal ethics and animal rights

To begin discussing care, harm and empathy with animals and in more-than-human worlds, it is essential to critically interrogate the ethical bases for animals' status in society and the various defences made of their 'rights'. It seems strange to be separating animals from society having just explained why this dualism is unhelpful, but it is important to look at how animals have been figured in specifically human structures of democracy, law and public discourse. Together, these are the primary means through which animals have been treated seriously in debates about their care by, and with, humans.

Focusing discussion in this way situates it within Western liberal democracies, where hierarchies of living rank humans foremost and animals beneath. There are societies and cosmologies that do not separate human and animal ontologies, and where there has never been need for a 'posthuman turn' (Sundberg, 2013). Thus, it is necessary to avoid any sense that Cartesian dualisms are universal and that the more-than-human and non-representational project is the only philosophical means to challenge this binary. Moreover I am not dismissing indigenous cosmologies where nature and culture are fused, but instead acknowledging the situated-ness of my research – at a vet school in the UK, a place and profession centred by Anglo-speaking political philosophies. This necessitates a review of philosophical thought on animal ethics.

There are many questions raised by contemporary animal ethics: how should 'we' care for animals? What *is* an animal? Are some animals more worthy of care than others? Can they feel pain? Are they rational? Are they sentient? What *is* sentience? Should we kill

them to consume them? Should we kill them to lessen their suffering? How should we kill them? Should we confine them in zoos or in homes, as pets? Should we experiment on them? Should we ‘just’ let them run free? This list only touches on the ethical question of the animal’s status. There are also very divergent answers and emotional responses: disgust at animal exploitation and its link to global capitalism (“end industrial farming and vivisection now”), ambivalence (“I should be vegan, I suppose”), cultural relativism (“halal meat is barbaric”/ “halal is fine because it’s based on religious belief”), bewilderment (“why am I being asked to care about lobsters?”). Again, the list is far from exhaustive. These are matters of morality that wrack me personally too, alongside the ethical questions I ask of veterinary medicine and geography, which make up this research project.

Despite these questions always having been present in Western philosophies, animal ethics began to be taken more seriously in Western philosophy and popular culture following the work of Singer (1975) and Regan (1984), and the rise of the animal rights movement (Garner, 2005). At the heart of these ethical approaches is a critical consideration of animal care and harm, and the human moral obligation towards other nonhuman species. For Singer, species status alone is not a reason for treating some beings differently or less than others. He describes this as the now well-known term *speciesism*: “... the idea that it is justifiable to give preference to being simply on the grounds that they are members of the species *Homo sapiens*” (Singer, 2006: 3). In *Animal Liberation* (1975), Singer provided a philosophical argument to raise the moral status of animals so that their ethical consideration, and therefore their care, was important in itself and not only in relation to human structures. Stating that animals have moral status equivalent to humans however is not the same as saying all animals have the same rights as humans. Singer instead presented a *utilitarian approach to animal ethics*. This means that animals and humans may have equivalent moral status but do not necessarily have the same interests. Utilitarianism is thus related to an equal consideration of interests and this does not always mean that animals and human always need to get treated the same way. Sometimes, this approach to ethics is called the ‘greatest good to the greatest number’:

“The basic principle of equality does not require equal or identical *treatment*; it requires equal *consideration*. Equal consideration for different beings may lead to different treatments and different rights” (Singer, 1975: 3).

The question then becomes: is the harm of a few enough to justify the benefits for the many? As an example, Singer considers factory farming as unethical, where large numbers

of animals suffer and die to meet additional needs of humans. However he would support some forms of vivisection. Utilitarianism could therefore be understood to be a scalar approach to animal ethics involving imagined objectivity from an ethical dilemma and some amount of ontological comparison - albeit not on species lines - in the way it makes one perceive other's interests. This is not to say Peter Singer is not radical in his thinking or that utilitarianism is wrong *per se*.

Regan (1975) proposes a *stronger animal rights view* whereby individual animals are worthy of care in and of themselves. They are morally equivalent and their moral rights cannot be challenged even if this may benefit the many. This is more than an equal consideration of interests as helpfully illustrated by Garner (2005):

“For example, we would still be treating humans and animals as equals if we were prepared to experiment on them both, an outcome which would not be acceptable for a rights-based theory, but which might... be justified by a utilitarian approach to animal ethics (2005: 18).

The rights-based take on animal ethics means that all use of animals by humans is morally wrong “since the utilization of nonhuman animals for purposes of fashion, research, entertainment, or gustatory delight harms them in the process of treating them as our resources” (Regan, 2004; xviii). It is this radical animal rights-based approach to ethics that helped advance animal rights as a social justice movement focusing on animal advocacy and activism (Regan, 2004). In a more contemporary setting, rights-based animal ethics can be seen in veganism and intersectional approaches to animal rights. These positions are considered in a later section on ecofeminism.

For Singer and Regan both, the moral stance of animals is dependent on their sentience, namely the capacity to feel pain and suffer. For Singer in particular, it is the ability to rationalise that sentience which matters. This is where, personally, I draw out my own critique with this argument, and question its incorporation into more-than-human ethics, where agency is relational and attributed to organisms that might lack this sentience. Promoting this cognitive and physiological understanding of sentience is to imply that sentience is borne of and resides in one individual. Additionally, it supports the idea that one's sentience is measurable and therefore comparable (De Waal, 2010). Donaldson and Kymlicka (2011) raise similar concerns and add that the radical rights-based approach has done little to change the political position of animals in society. They do not disagree with the inviolable rights of animals but rather Donaldson and Kymlicka (2011) want to: “offer

an account of animal rights that seeks to combine universal negative rights and *positive relational rights*, and that does so by locating animals within a more explicitly political framework” (2011: 10). This more differentiated, citizenship-based and geographically-sensitive notion of animal rights is termed ‘zoopolis’, first discussed by geographer Jennifer Wolch (2002). Of critical importance is how the zoopolis considers how human-animal relations are co-dependent and that caring practices between species are more complicated than just the human exploitation of animals.

These philosophical debates in animal ethics can be understood as a distinctly intellectual exercise – no-one *in practice* perfectly embodies one ethical stance in relation to animals, and none of these stances definitively answers the question of ‘the animal’. Indeed, these forms of animal ethics – even Donaldson and Kymlicka’s nuanced tactics – can feel disembodied, guilty simultaneously of oversimplifying and philosophically overcomplicating human-animal relations. While some of these debates have entered veterinary medicine and education under the guise of veterinary ethics (Bachelor, Creed and McKeegan, 2015; Sandoe, Corr and Palmer, 2016) – and despite the UK having a highly developed veterinary ethical framework influenced by animal ethics – I argue that UK veterinary ethics still fails to attend fully to the animal and to more-than-human realities (Donald, 2018). In making this statement, it is not my intention to dismiss these approaches to animal ethics, and it is not the aim of this thesis to assess which category of ethical framework best ‘fits’ veterinary medicine. They do however offer an ethical terrain to work from, and have better equipped me with the means to interrogate what ‘care’, ‘harm’ and ‘empathy’ might mean in veterinary medicine and education.

The feminist ethic of care, ecofeminism and critical animal geographies

Aside from the obvious relevance of animal ethics in creating a theoretical framework for care, harm and empathy in more-than-human geography, the notion of a *feminist ethic of care* is also necessary and helpful. The term encapsulates critical inquiries surrounding the nature of care, obligation, responsibility and justice from a feminist perspective. A feminist ethic of care recognises the historical connections between care and women, and challenges enduring divisions whereby the masculine is associated with activity in public life and liberal rights, and the feminine is associated with caring for the private home and family obligation. Carol Gilligan (1982) first emphasised that a feminist ethic of care is concerned with how care should be conceptualised through a focus on relational

compassion, as opposed a defence of moral rights in the public sphere. Following Gilligan's conception of a feminist ethic of care, care is not something that is granted to someone through their rights as such but is enacted through an attention to others and a "morality of responsibility" (Donovan and Adams, 2007: 2). Gilligan is not interested in seeking equality in the same terms as those who defend liberal democracy but instead wants to open up care as a social contribution everyone has an obligation to deal with. There are however, many interpretations of a feminist ethic of care. Joan Tronto (1993) critiques and expands upon Gilligan's notion by stating the democratic rights need not be set up in opposition to a sense of responsible compassion and that an ethic of care is always dependent on context. Additionally, debates on a feminist ethic of care constantly grapple with the notions of 'femininity', 'woman' and how these things should be claimed in relation to care.

A feminist ethic of care, and matters of care more generally, have a long history in human geography. In particular, feminist geographers have been pivotal in problematising the spatially bounded nature of care and in highlighting the politics of care (Staeheli and Brown, 2003). Questions configured through this research agenda are: Where does care take place? How are bodies and scales incorporated into care? How does neoliberalism interact with the welfare state? Thinking about the relations of care and responsibility at multiple scales and through power-geometries has arguably become one of the defining characteristics of contemporary UK geography (Massey, 2004; Raghuram, Madge and Noxolo, 2009). Here however, I wish to focus on how the concept of a feminist ethic of care is brought into discussions with animals, via intersectional ecofeminism and how latterly this has informed debates in critical animal geographies and vegan geographies.

Scholar-activist Lisa Kemmerer (2011), drawing on ecofeminist arguments, states that any consideration of a feminist ethic of care needs to challenge all forms of structural oppression to create an "intersectional analysis of injustice" (2011: 6). This involves looking beyond gender inequality on the basis that it is, historically and in the present, the same capital-centric, patriarchal processes and structures subjugating animals and women (and indeed all marginalised beings). To separate out the sexism inherent in unequal caring practices and concepts of care from the interrelating issues of speciesism and racism is to ingrain an ethnocentric feminism concerned mostly with privileged, non-racialised women (Harper, 2010). Enacting a feminist ethic of care in this way therefore necessitates a focus on the lives of animals, a point put powerfully by Kemmerer (2011):

“Women who prefer not to recognize a cow as an objectified female resemble early feminists who focus exclusively on white, middle class women” (2011: 20).

Like early advocates of a feminist ethic of care, this ecofeminist approach questions the autonomous rights-based principles of fairness and reconfigures animal care around compassion and connection, although I would argue that the meanings and practice of these terms is not engaged with critically enough. Donovan and Adams (2007) add that whilst Singer and Regan have done much to enliven the animal rights movement, their conceptualisation of animal rights denies the formative importance of emotion in compassionate human-animal relations. Any feminist ethic of care approach to animal ethics must then raise the status of multi-species emotion whilst aiming to dismantle the structures oppressing all marginalised bodies. These principles lead to a radical political approach whereby all use and consumption of animals is judged to be exploitative as it harms not only the individual animal but results in the endurance of unequal and violent structures of power; an important distinction from the earlier animal rights movement.

Scholar-activist movements have developed on this basis under the broad sub-discipline of critical animal studies (CAS) and most relevantly, critical animal geographies (Matsuoka and Sorenson, 2018; Collard and Gillespie, 2015). Critical animal geographies configures these ethical and political questions around matters of space and place, for example how practices of commodified animal exploitation are deliberately set away from human sight (Collard and Gillespie, 2015); how veganism might subvert spaces dominated by animal consumption (White, 2015) and how gender and race intertwine with situated animal subjugation (Gillespie, 2014; Harper, 2011).¹⁴ The aim is to liberate animals through critical research, and through activism such as veganism and transgressing “private, out-of-sight and hidden spaces of animal abuse” through nonviolent direct action (White, 2015: 29). Associated with this politics is the burgeoning field of vegan geographies that aims to work out some of the ambiguities surrounding critical vegan praxis.

What these debates lend to my theoretical framework is not only an essential knowledge of key animal ethics debates, but also an awareness of just how *different* understandings of care and harm can be. There are contrasting arguments forming the basis of our duties to

¹⁴ Veganism is a term that is defined in many different ways. It can be briefly encapsulated as a way of living whereby one refuses to consume animal products, be that via edible food products, clothing or any other product or process. The intention is to end the exploitation of animals (Vegan Society, 2018).

animals, and then different arguments in relation to how we should treat and live with animals. They are all theories that are challenging to work into more-than-human geographies and the context of veterinary medicine education. There is plenty in veterinary medicine which might constitute 'harm', for example farming, euthanasia and use of animals in teaching. And there are aspects of critical animal studies which might not fit with more-than-human approaches, such as the dominance of political analysis over socio-cultural understandings of human-animal relations and steadfast understandings of what constitutes liberation and exploitation.

The work done in critical animal studies/geographies from the perspective of a feminist ethic of care brings in a language of multi-species *empathy* as a legitimate way of understanding human-animal relations, and as a way to challenge intersectional injustices. This is not to say I 'oppose' rights-based or utilitarian approaches but that I support those concepts of animal ethics that do not place sentience, agency and interest in one individual. In this sense, Donaldson and Kymlicka's (2011) communitarian understanding of a more-than-human society is also pertinent. This section of the theoretical framework demands that I critically consider how 'care' and 'empathy' are created in veterinary medicine and education, and to question where the animal is situated in these practices. Whilst animal ethics and veterinary ethics are incorporated into veterinary medicine to a degree, there is little critical involvement of notions of empathy and a feminist ethic-of-care. This is not surprising – veterinary medicine is a medical science which formally favours cognitive defences of sentience – and is a notable theoretical oversight given the claim that veterinary medicine is also about compassionate, multi-species care.

The role of STS and medical humanities in medical and caring practices

Having explained the suitability of non/more-than-representational theories and the basis of a more-than-human geography, as well as concepts of care, harm and empathy within animal and feminist ethics, it is now appropriate to consider how these are enacted in practices of care and more specifically (veterinary) medical care. In short, the context of veterinary medicine needs to be brought into critical focus. Veterinary medicine is frequently referred to as a science *and* an art formed through evidence-based science and less easily evidenced care, practical skill and intuitive knowledge. It is, arguably, a caring profession where science and emotion come together. What does it mean to call

veterinary medicine a 'science', and what is the nature of this 'science' in relation to emotions and animals?

These questions around the matter of science, care and ethics necessitate an exploration of Science and Technology Studies (STS). This conceptual territory is not entirely divorced from my earlier consideration of non-representational and hybrid geographies; STS is integral to these debates and is a resultant discipline in itself (Law, 2008; Whatmore, 2002). All of these poststructural concepts work to destabilise and trouble socio-material boundaries (human/animal, nature/culture, masculine/feminine for example), but it is STS which offers a particular focus on how science is created as 'objective' and 'rational', and how analysis of the practices of technoscience might disrupt the notion of natural 'fact'.

Work by Bruno Latour and Donna Haraway is central to my understanding of STS and why it is crucial to draw STS into a theoretical framework for affective veterinary care. The move to approach science as a set of things done, as opposed to as a set of objective facts, has been developed most thoroughly by Latour, who initiated Actor Network Theory (ANT) as an intellectual project along with John Law and Michel Callon (Law, 2008). ANT is founded on a relational ontology aimed at dissolving the division between subject and object, a dualism that underpins the legitimacy of scientific fact. What is so radical about ANT – and what ties it so closely to hybrid geographies - is its commitment to understanding more-than-human worlds. By dispensing with modernity's dichotomies, Latour (1993) contends that all 'things' are capable of acting through their connections and relations to other things. Actors are part of a ceaselessly dynamic, living network. It is a network with no exact beginning or end, and only a set of relations in flux, coming together and dissipating. ANT, and in fact the wider STS project, is characterised by the tension between stability and contingency (Law and Mol, 2001; Shaw and Meehan, 2013). While there are evident similarities between ANT, hybrid geographies, object-oriented philosophy and vibrant materialism, they all work with and against each other to problematize the nature of non-human agency and poststructural concepts of space.

By taking up the problem of what constitutes the status of scientific fact, Latour (1987) becomes the ethnographer (or 'the dissenter') by going into the laboratory and studying in close detail what goes on to produce 'science'. He brings up the role of the 'black box' which he refers to as a word: "...used by cyberneticians whenever a piece of machinery or a set of commands is too complex. In its place they draw a little line about which they

need to know nothing but its input and output” (1987: 3). It is Latour’s aim, led by ANT, to open this black box by asking the scientist (‘the professor’) making factual claims to demonstrate their practice, experiments and manipulation of instruments.

In the midst of the laboratory, where science is meant to be at its most self-evident, Latour (1987) feels tense. Once one questions anthropocentric agency and objective fact, human dominance begins to crack: “Just at the time when we feel comforted in our belief and start to be fully convinced by our own eyes watching the image, we suddenly feel uneasy because of the fragility of the whole set up” (Latour, 1987: 66).

It is clear that this is partly down to how Latour (1987) queries the relationship between the Professor and his/her instruments of science. The dissenter is learning about the experiment from what they see the instrument do and by listening to how the Professor speaks for the instrument. In essence, the science understood by the dissenter is formed through an *intersubjective, multi-sensual experience of the experiment*. On the other hand, the Professor “...behaves as if he or she were the mouthpiece of what is inscribed on the window of the instrument” (Latour, 1987: 71). What is revealed in this scenario is the falseness of the objectivity assumed in science, which has been made possible by Latour’s (1987) enduring questions and relational philosophy. Latour imbued STS with radical posthuman possibilities through his philosophical overhaul of scientific practice.

Haraway (1997) takes a similar socio-materialist approach to understanding science but does so from a more specifically feminist perspective. Like Latour’s putative ‘Professor’, Haraway develops the instructive figure of the ‘modest witness’ as a means to understand the gendered norms by which the scientist emerges in Western, Anglocentric accounts of science. By providing a historical analysis of the experiments carried out by proto-chemist Robert Boyle in the seventeenth century, Haraway explains how Boyle was embodied as ‘modest witness’. This scientist, like all ‘proper’ scientists, was modest because his experiments allowed him to seem as if he was merely observing reality and reporting it back to others for the sake of human progress. What Haraway (1997) argues is that this formulation of modesty and of reality is gendered. It seemed as if modest witnesses lay themselves and the facts bare for others to see, but science, as we have already seen through Latour (1987), involves much underlying, physical, banal work for the experiment to be performed ‘correctly’. Modesty here is “the specifically modern, European, masculine, scientific form of modesty” (Haraway, 1997: 23). Women could occasionally

watch experiments in the seventeenth century, but they could not *witness* as their modesty was related to the body and in particular, covering it up.

What I take from Latour and Haraway is that claims of science and scientific method should never be perceived as self-evident. Method should not be imagined as some totalising entity, nor should it be fixed in dualistic relationships with emotion, femininity and animal. Furthermore, Latour and Haraway both force thinking to go beyond the notion that science is socially constructed, pointing out that a relational understanding of science should investigate material practices, and open out who, ontologically, can be considered an actor in science.

STS has therefore become important to more social and cultural understandings of medical practice as it provides a way of working through the tensions that embody medicine: science and care. Ethnographers have entered into hospitals, clinics and medical schools – any site where medicine takes place – to investigate the practical creation of medicine. Of particular influence to site-based, STS-informed medical research is the work of Annemarie Mol. In *The Body Multiple: ontology in medical practice* (2002), Mol investigates the multiple sites where the disease *atherosclerosis* is made and enabled. Central to understanding this work is her critique of ‘perspectivalism’ in health research – whereby one listens only to multiple accounts of illness to build up perspectives of a disease. Mol believes this leaves something out of social science accounts of illness and disease. By only collecting spoken perspectives of what people have to say about illness, other modes of social experience are left out: “It may seem that studying “perspectives” is a way of finally attending to “disease itself”. But it isn’t. By entering the realm of meaning, the body’s physical reality is still left out. It is yet again an unmarked category” (Mol, 2002: 11).

Mol does not discount spoken accounts of illness but also wishes to attend to the bodily enactment of disease; that is to say she approaches disease as a relational ontology. Illness is usually considered to be the socially relevant outcome of an objective, physiological disease but Mol takes issue with this by stating that ‘disease’ is not a self-evident medical fact, but is produced by site-based corporeal-material practices:

“If I use the word disease here, this is not to locate my text on the *disease* side of the disease/illness distinction, but to breach it. To make it plain that I will attend to physicalities even if I am not a medical doctor. To underline that

it can be done. That there are ways of ethnographically talking about bodies” (Mol, 2002: 27).

Mol moves through a hospital, exploring how atherosclerosis is enacted in different sites and shows that the disease can, ontologically, become a different object in each site. For example, atherosclerosis is enacted in the clinic when a patient complains of a certain list of symptoms following a certain clinical history. In the pathology lab, atherosclerosis is found in the biopsy of a blood vessel. Sometimes these objects of disease overlap and sometimes they are different, such as when a biopsy does not show atherosclerosis, yet the patient complains of its symptoms. What it is that causes these differences/similarities are the material practices happening in each site and the questions being asked of the disease. Those people involved (doctors, pathologists, surgeons, patients) then make different claims about what the disease is, and so the enacted disease is always political and never taken-for-granted. Mol’s work therefore challenges the idea that it is the doctor or medical professional who is the sole expert of disease, radically changing what medicine is in the process. These political questions open up debates about ‘patient-centred’ medicine, which aims to realign power imbalances where the patient is rendered a passive receiver of medicine, and the doctor is the decision-maker about disease. Perhaps what should be learnt from Mol more generally is that medicine is formed through a science that is never a soulless practice, and a version of care which is not always based on selfless compassion. They are mutually co-constituted through medical practice.

Medical humanities and the problem with ‘popular empathy’

Research related to these social, cultural, political and historical understandings of medicine now often occurs within the emerging field of medical humanities (Atkinson *et al*, 2015). It is in this interdisciplinary field, as well as in a feminist ethic-of-care and in site-based ethics that discussions about empathy (within medical practice) emerge. In questioning what incorporates and defines ‘care’, empathy has been one of the terms enabling critical re-engagement among medical humanities scholars and medical practitioners who wish to improve patient-centred care and develop more ‘empathetic’ medical curricula (Shapiro, 2008).

The theoretical and practical basis of empathy is constantly in question however. By critiquing ‘popular empathy’ – the intellectual extension of oneself into another so that one can understand their perspective – Rossiter (2012) states there is a risk of erasing

difference through ‘a (presumed) knowledge of the other’ (2012: 5). The same point is emphasised by Berlant (2011) who adds that this conceptualisation of empathy is based in the notion of the rational, autonomous self. Halpern (2003) notes empathy in medical practice should be based upon emotional relationality as opposed to being a form of ‘detached cognition’, and should resist professionalization (such as measurement and examination of empathetic qualities). These critiques of empathy seek to push the term beyond the banal understanding of ‘putting yourself in another’s shoes’ and call for a more relational understanding of empathy. They are worked out in relation to human medicine but such a focus on emotion and the more-than verbal and more-than-rational aspects of emotion makes them appropriate for an exploration into *more-than-human empathy*. Whilst empathy is sometimes mentioned in veterinary medicine curricula, the term is not critically questioned and is focused upon human to human empathy. The possibilities of a more-than-human empathy within veterinary medicine education therefore need to be investigated.

It is necessary at this stage, in order to enrich the notion of more-than-human empathy, to bring in Maria Puig de la Bellacasa (2017; 2011; 2010). The work of Puig de la Bellacasa has built a contemporary understanding of care within STS that brings together a feminist ethic of care and Latourian politics, setting the stage for a more critical approach to empathy beyond species boundaries.

Puig de la Bellacasa (2011) does this by confronting two issues within Latour’s research into the staging of technoscientific assemblages. Firstly, Puig de la Bellacasa questions Latour’s ‘matters of concern’ and his critique of social constructivism. Latour’s matters of concern relate to the attention afforded to the multiple parts of an assemblage, for example, an argument between an environmentalist and a car driver about the ecological impacts of driving. Latour presents each of these stand points as matters of concern that *all need to be considered* in order to avoid objectifying the driver and the risk of falling into an easy social constructivist explanation of the argument. What Puig de la Bellacasa does is to highlight how:

“This dialogue thus also exhibits mistrust regarding minoritarian and radical ways of politicizing things that tend to focus on exposing relations of power and exclusion – here the angry environmentalist” (2011: 91).

By drawing on a feminist ethic of care to support this critique, she continues:

“In any case, these are voices required to support a feminist vision of care that engages with persistent forms of exclusion, power and domination in science and technology. To promote care in our world we cannot throw out critical standpoints with the bathwater of corrosive critique” (2011: 91).

This ties into Puig de la Bellacasa’s second issue with matters of concern: that this term misses out the overlooked labours of caring and the ‘neglected things’ of technoscientific assemblages. To counter this, Puig de la Bellacasa proposes ‘*matters of care*’ instead, on the basis that there is something imbued in the term care that is missing in concern. Care, as a verb, draws attention to how care is an embodied, everyday practice. Leaning on Tronto (1993), Puig de la Bellacasa inflects an essential feminist slant to care in STS – that care is frequently devalued and requires exposure in order to challenge inequalities:

“Turning a thing into a matter of care doesn’t need to be about technology dominating humans or about ready-made explanations for blaming oppressive powers, but rather how a sociotechnical assemblage can reinforce asymmetrical relations that devalue caring” (2011: 94).

This includes involving those voices which are less easily perceptible and so extends matters of care to include non-humans. Key to this ethics of care is that it is not a fixed theory but ‘has to be constantly rethought, contested and enriched’ (2011: 96). Puig de la Bellacasa (2017) develops this speculative ethics by thinking through the notion of ‘care for as well as possible worlds’. This undetermined and non-linear understanding of care – it is ‘good’ and ‘bad’, ‘easy’ and ‘difficult’ – means it can be used to imagine how assemblages of care might look like:

“The speculative then connects to a feminist tradition for which this mode of thought about the possible is about provoking political and ethical imagination in the present” (2017: 7).

What we can aim for then is not a care that cures or that sets out to be virtuous, but that uses ethical speculation to wonder how we might create more liveable worlds beyond the divides of nature/culture and human/animal, whilst also recognising enduring social and cultural inequalities. Puig de la Bellacasa thus develops a tentative more-than-human ethics for an Anthropocene trying to face off ecological destruction, a “modest attempt to share the burden of stratified worlds” (2011: 94).

Puig de la Bellacasa's work is central to this thesis as it brings together key arguments in STS with a feminist ethic of care, interrogating and improving on both in the process. This approach has underpinned the structure of this thesis' conceptual framework (the first part dealing with ontological geopolitics and the latter more explicitly on care) because of this ethical and political vision. It challenges the basis of veterinary medicine as both a science and a caring practice, and asks me to more critically investigate the how care and harm might waver in veterinary medicine.

In light of this, matters of care and a speculative ethics are a vital aspect of 'more-than-human empathy'. Like care, empathy is a term imbued with affective resonance different to that of concern – the suggestion that it requires a being-with/within another in order to care is an evocative and useful one. If, as I propose, empathy is considered not as a cognitive function nor benign emotional statement, but configured through shared corporeal vulnerabilities, then empathy should be thought of as distinctly more-than-human. More-than-human empathy moves away from the subjective notion of empathy as recognising the vulnerability of another human and opens it up to a wider assemblage inclusive of nonhuman others and technologies. In this way, more-than-human empathy can be thought of as *one way into* the matters of care and so builds upon the work of Puig de la Bellacasa. Like care, this idea of more-than-human empathy is not hard and fast theory but an experiment in caring which relies on a speculative, elusive ethics.

Shaping response-able routes for a more-than-human veterinary medicine

The broad school of geographies on animal health and welfare, animal care and animal disease

While empathy may not be the lens through which animal care is often considered, critical STS approaches have taken hold in scientific and caring practices that involve animals. There is now a large body of work by geographers combining debates about more-than-human geographies and STS to create a conceptual landscape that can interrogate human-animal relations and care together. This work includes Craddock and Hinchliffe (2015) on the biopolitics of interdisciplinarity in human and animal health (One Health¹⁵), Gorman (2017a; In Press) on multi-species therapeutic landscapes, Miele

¹⁵ One Health is a global health agenda described by Craddock and Hinchliffe (2015) as: "a generalised and flexible term that captures the will to address the complexities and interrelations that exist between human, animal and ecological health" (2015: 1).

(2016a; 2016b) on animal welfare science and food and Enticott (2017) on veterinary epidemiology practices. Although it is possible to say all this work has ‘the animal’ in common, each leans upon its own conceptual framework, methodology and empirical setting. For example, while Enticott (2017) is concerned with veterinary medicine and geography, his research is based upon human-centred enactments of animal disease and does not fully consider animal or more-than-human ethics. This is not a criticism *per se*, but it does note how each author has subtly different research aims despite being based on the ‘same’ topic. I consider the limits of some contemporary animal geography at greater length in the Methodology chapter. As I contend, it is through methodology (and its link to site-based ethics) that debates about animal-centred research should be focused. These differences matter as they help me to draw out what might be missing in more-than-human geographies of animal health/welfare and allows me to better figure out my own theoretical stance, aims and research design.

Where my theoretical framework finds much purchase in the more-than-human geographies of animal care, welfare and science is in the work of Gail Davies, Beth Greenhough and Emma Roe, who most effectively incorporate geographies of affect/emotion, site-based ethics and *lively* non-representational methodologies. It is therefore here that the former discussions in this chapter become more clearly woven together. I will explain the centrality of this work to my own research, before detailing the research objectives which result from this chapter on critical theoretical review.

Somatic sensibilities and response-ability for more-than-human care

Davies’ work critically explores the ethical relations between science and care, and human and animal. Specifically focusing on laboratory animal research and its ethical protocols, Davies (2012) suggests that the, so-called, ‘tick-box ethics’ of the “3Rs principle” – to reduce, replace and refine the use of animals in research – does not always succeed *in practice*. She shows that the ethical protocol of reducing and replacing the use of experimental mice did not fulfil its aim of reducing animal suffering: “The consequence in the particular case is that science can never proceed as if the ontological, epistemic, and ethical issues have been settled prior to the point of experimentation” (Davies, 2012: 632). As Enticott (2012) contends, care theory and practice are indeed in constant tension. In his example of working within veterinary regulation of animal health, veterinary protocols work best when they are necessarily negotiated in practice and can never be rolled out to the same effect in every site.

This practice-based working-out of care and science is also covered by Mol, Moser and Pols (2010) who suggest that ‘good’ care is made up of “persistent tinkering in a world full of complex ambivalence and shifting tensions” (2010: 14). It is an approach seen in other animal and veterinary contexts such as in Law’s (2010) investigation of heterogeneous practices of caring and killing during the 2001 Foot and Mouth Disease (FMD) outbreak and Harber’s (2010) re-imagining of familial relations with farm animals.

With dominant understandings of animal care and science under necessary ethical critique, how can researchers move away from care as narrowly procedural towards care as a site of ethical engagement with the more-than-human? Greenhough and Roe (2011; 2010) address the question through the notion of ‘somatic sensibilities’, presented as a form of interspecies response-ability brought about through the shared experience of living in a vulnerable body. Unlike rights-based and utilitarian approaches that emphasise moral justice, and unlike critical animal geographies, whereby an ethic of care demands the *particular* response of animal liberation, ‘somatic sensibilities’ originates with the phenomenological, corporal ethics of Acampora (2006). Somatic sensibilities better acknowledge the primacy of our inter-woven fleshy realities and how human-animal relations are made through tensions between bodily sameness and difference – with neither state erasing the other. As Greenhough and Roe (2011) state:

“This in turn places new kinds of obligations on the experimenter to develop their competency in sensing the ways in which they and their sentient subjects react to the experimental environment – what Haraway (2008) might term *response-abilities*” (2011: 57).

For Haraway (2008), ‘response-ability’ describes the capacity to respond to another’s suffering, a form of site-based affective attunement to the more-than-verbal. It is easy to see how this stance can generate debate in non/more-than-representational and hybrid geographies: how bodies come together and how they enact one another is the site of ethical investigation and bodily politics. This sensibility is also vividly evoked by Despret (2004) and Despret and Meuret (2016), who crucially note these relations are created “reciprocally yet not symmetrically” (2016: 51).

Their intention is therefore not to erase difference between humans and animals, but to open up a way of investigating *where* and *how* different bodies come together to create the more-than-human. This alternative reformulation of formal ethical codes is a political project involving, variously: challenging the processes by which humans order species and

define levels of suffering; greater human attunement to the emotional sensibilities of nonhuman animals; and, taking seriously nonhuman animals' ability to contest their position and by more generally investigating scientific practices. By looking at the emergent geographies of animals-in-the-making, we are better able to grasp the tensions between science and emotion, and human and animal, in order to see how ethics are made *in situ* – in the lecture theatre, anatomy lab or farm for example. These issues have been raised by Bellingan *et al* (2016) as engagements with 'cultures of care' in multidisciplinary animal welfare. Cultures of care here refer to how animal care regulation should incorporate a notion of care that is networked and attends to the different cultural and social contexts in which it occurs, particularly at emergent international scales of animal care regulation. Davies *et al* (2018) continue by emphasising the importance of linking this sensibility to analysis of ethical codes and guidelines:

“We welcome this growing attentiveness to the liveliness of guidelines and handbooks, cultures of care, and licensing practices, which are as central to the imaginative politics of animal research and use as trans-species relations” (Davies *et al* (2018: 13).

A conclusion, a beginning

It is from this perspective on matters and cultures of care that I contend it is important to focus on the veterinary school as a place of emergent more-than-human culture. Vet schools are, after all, the places where humans are taught and tested on their abilities to care for animals under the profession of veterinary medicine. What makes up the vet school in question in this thesis? What educational structures, curricula, physical architectures and materials try to define it? Additionally, Greenhough and Roe (2011; 2010) direct my approach in this investigation through working with the site-based practices making up this more-than-human culture. Following discussions on affect, atmosphere and emotion in relation to animal research and nonrepresentational geography more generally, the affective qualities of the practices will be given particular attention. My first research objective is thus:

1. To investigate how the skilled practices of student veterinary surgeons emerge in pre-clinical, field/farm and clinical settings and how these reflect changes in educational provision and professional training.

This framework, in taking ‘the animal’ as its overarching question, frames my inquiries about the creative ontologies of animals-in-the-making within the vet school. Informed by histories of animal ethics, site-based ethics and STS approaches, I formulate this second objective:

2. To critically explore the experiences of animals as cared-for patients, and as scientific bodies in order to better analyse the ethics of animal care and veterinary welfare in the context of veterinary education.

Compelled by former engagements with the concepts of care and empathy, I configure my final objective to critically explore these, particularly in relation to how professionalism is tied into this:

3. To critically investigate the practices and meanings of ‘care’, ‘empathy’ and ‘veterinary professionalism’ in the multiple sites in which veterinary students and graduated veterinary surgeons work.

By stating that I am conceptualising new ethical imaginaries for veterinary medicine, I do acknowledge that the profession is already creative, attuned and tinkered with and that human-animal relations are entwined. What this framework does however is set up the terms through which this can be more fully investigated, appreciated and challenged, as well as worked into the futures of veterinary medicine and geography.

3. Re-framing veterinary medicine as sensuous science: a tentative more-than-human methodology

Introduction

Making a plan for researching and writing within the veterinary profession was always going to be a challenge. Like most creatively-informed, critical social science, this methodology (and I) developed through a deep-seated sense of being neither one thing nor the other: neither fully vet student nor research student, neither inside nor outside of the vet school institution. With research themes that are never 'scientific' enough to pass in the veterinary world, this methodology is characterised by a nervy, affectively attuned sensibility.

Overall, this chapter lays out and justifies the methodology I have employed to explore the objectives central to this research. Namely, this involves: investigating the skilled practices of vet students in the multiple sites of the vet school and the more-than-human ethics which are brought to life here; critically exploring the experiences of animals as cared-for patients, and as scientific bodies in order to better analyse the ethics of animal care and welfare in the context of veterinary education; and, to critically and creatively investigate the meanings of more-than-human empathy in these same sites.

Whilst I have the experience to know that a methodology-in-principle is oftentimes very different to the methodology-in-practice, it remains that there were unavoidable stumbling blocks and things I could not control throughout the whole process. Instead of framing these issues as setbacks, they became something to address and then work with. This methodology thus represents a learning curve in my research practice which I believe improved the work in itself whilst proving that the research process is indeed never entirely logical or linear.

Section Two begins through a narrative opening into the vet school which details how I gained access to the school and how I was granted permission to carry out fieldwork here. This is where and when I begin to critically question how this *qualitative* research is positioned within the largely *quantitative* veterinary medicine profession and what role participants and I might play.

In *Section Three*, I explain the conceptual background to this methodology by explaining the limitations of science-focused animal research and how the sub-discipline of animal geography attempted to challenge these issues methodologically. Through bringing in a discussion on non/more-than-representational methodology and the role of affect in human-animal relations, I explain what embodies a creatively and ethically attuned more-than-human methodology. This essential stage provides the theoretical justification for the remainder of this chapter.

Section Four is the main body of this methodology as it details my journey through the vet school as an educational institution – what I did during fieldwork and how I did it. With a methodological map (Figure 4) serving as a visual guide, I explain how I carried out a multi-species, multi-sited ethnography within the vet school and tied it into timeline of an academic year. Each site is worked through and the ethical issues and concerns about positionality are woven in. As well as this ethnographic focus, I completed interviews with students and staff which are engaged in the latter part of this section.

In *Section Five*, I explain the part that interpretation and writing play in giving academic rigour to this methodology. Importantly, I justify creative non-fictional writing as a technique to bring out the ethical and affective tensions that lie at the heart of this more-than-human methodology. A key aspect of this writing practice is the notion of writing *with* and *for* more-than-human empathy – how research can be written full of empathy and also evoke empathy in the reader. Tied into this, I draw attention to the illustrations that appear throughout the thesis and how they add to my objective of showing veterinary education as a sensuous science. This section ends the chapter with a concluding statement on the meaning of a ‘tentative more-than-human methodology’.

‘So, what’s your hypothesis?’: Finding my way into the vet school

Room Noir

It was with a naïve confidence that I set up my initial meeting with the vet school. Following introductory email correspondence between myself, my supervisors and a vet school staff member, I was able to set up a meeting with the Head of Learning and Teaching in the vet school.

This was not a simple process as I had no real previous connection to the school and therefore was getting in touch out of the blue. Formality and professional politeness were key to convincing the key gatekeepers of the robustness of my research proposal: university headed notepaper, and a clear statement of aims and explanation of ethics were rightfully necessary. The initial contact was made through my co-supervisor Hayden, whose status as Professor might have provided leverage when those on the other side of the email were making daily decisions about which emails to read and which to dismiss or leave for another day. Primary contact was thus made through a form of institutional exchange, where being taken seriously depended to a degree on academic seniority.

Much critical social science involves a conscious de-centring of one's academic agency in order to challenge the power structures between the data-seeking researcher and vulnerable participant. In this case however and at the scale of the institution, it was my background in the University and the support of my experienced supervisors which partly opened the door to participants and helped convince gatekeepers of my ability to carry out research within the vet school. Scale is important in this discussion of power relations – whilst as a representative of cultural geography entering the scientifically-informed vet school I was subject to their decisions, as I moved through the vet school and worked through smaller-scale encounters, the affective movements of power became more complicated and multi-linear.

It was an unusually humid day when my co-supervisor Ian and I met Stewart, the Head of Teaching and Learning in the foyer of the main building in the vet school. Stewart told us to sit in Room Noir and wait for him to return, as he had something to do first. *Room Noir?*

I hoped that this vaguely camp introduction to the vet school (all other rooms were numerically named so why *Room Noir?*) would set the tone of the meeting but the room was occupied by two ordinary faux-leather couches, facing each other in order to foster friendly discussion. My legs stuck to the couch because I was wearing a skirt, something which felt instantly unprofessional as soon as I entered the building. I was concerned this might act against me when Stewart returned and I made a case for allowing me access to the vet school.

Defending qualitative methods

Within the vet school and within veterinary medicine more widely, there has been a recent push for ‘evidence-based’ research (RCVS Knowledge, 2018). Evidence in this case is considered to be quantitative so that it is possible to demonstrate reliability and replicability, and usually, research is within the veterinary sub-disciplines of epidemiology, clinical practice and animal behaviour. Whilst there has been an increase in qualitative methods (surveys and interviews) in veterinary medicine, this research is analysed within a quantitative framework where rigour is demonstrated by strict coding of qualitative data (Magalhães-Sant’Ana, 2014). Running alongside this is a new focus on mental health in veterinary medicine, resulting in conversations being started around terms of ‘compassion fatigue’, ‘depression’ and ‘burnout’. Again, this is made important through positivist research strategies. I was therefore wary of the themes of my proposed research: ‘emotion’, ‘senses’ and ‘multispecies experience’ would not find an easy fit with what Stewart believed to be evidence-based research. Therefore, I emphasised how I had experience of working with these themes previously within veterinary medicine¹⁶ and re-stated I had received approval from my own College’s Research Ethics Review Panel. At this early stage of research, methodology is apprehensive and it is difficult, if not over-confident to state what fieldwork will certainly entail. Ethical relations are constantly being reworked *in situ*, despite the formality of College-level ethical clearance. Carefully balancing this unease with Stewart’s expectation of good, rational research, I reiterated that I wished to carry out a multi-sited, multi-species ethnography within the vet school (by attending the various classes within the BVMS degree) and by holding interviews with students from a range of years across the degree programme, alongside relevant members of academic staff. I gave Stewart my research information sheet and consent form to consult.¹⁷ Ian backed me up by reinforcing that what I was planning was valid social science methodology.

Conditional upon my commitment to follow health and safety regulations, inform class teachers of my researcher-status, and follow my proposed formal ethics, Stewart formally granted me access to the vet school via his role as a senior member of staff. His permission seemed final but also vague due to the sense that Stewart was not wholly engaged in my research plan. One of Stewart’s questions proved tricky however:

¹⁶ Previous research for my Masters of Research (MRes) degree was based on an ethnography in a veterinary practice. Please see the Introduction chapter for further detail.

¹⁷ Information Sheets and Consent Forms can be found in Appendix B.

“So, what’s your hypothesis?”, he asked.

I was unsure how to answer. Should I try to formulate a hypothesis on the spot, so as to convince him of my research credibility? Or do I declare that as I am taking an iterative, heuristic approach, I do not have a distinct hypothesis as in scientific research?

“I don’t really have a one, as such”, I replied.

This qualitative methodological approach to investigating what is considered ‘science’ and ‘medicine’ has primarily been developed through the discipline of Science and Technology Studies (STS) since the late 1960s (Law, 2008). The work of Latour (1987), Mol and Law (2004; 2001) and Mol (2002), to identify a few of the most influential contributors, has helped carve out vital ontological debates in STS, such that this philosophical approach to science is no longer considered radical in progressive social science. To approach a question of science without a hypothesis and to instead inquire as to how medical practice or scientific method is enacted practically and discursively is considered an appropriate, justifiable research design. It is according to this scholarly precept that I wished to position in my research, at least in part.

I defended my lack of hypothesis to Stewart using this history, not defiantly but with what felt like a reasonable degree of assurance. It seemed important at this early stage to maintain the defence that the social, the animal and the emotional/affective are valid *in and of themselves*. Stewart was content that this might be the status quo in my own discipline but said little about its relevance to veterinary medicine. The initial meeting with Stewart did not reflect the view of all experienced vets I encountered during fieldwork, but it was formative and set me against the methodological grain of the vet school as a place of research and of education. Whilst I was granted physical freedom within the vet school, I felt constrained by the sceptical atmosphere surrounding qualitative, animal-centred research. The best option then, in order to maintain research integrity, was to continue with positioning my methodological approach as central to veterinary medicine, and not as an emotional salve to coat the real, rational science. It is as a consequence of this resolution that my methodology is structured around working *through, with and against* the vet school (as seen in Section 4). Before detailing the methodology as it emerged in practice however, the next section explains the conceptual basis of a more-than-representational, animal-focussed methodology in contemporary human geography.

Concepts for a more-than-human methodology

Confronting the scientism of animal research

In order to develop an appropriate methodology for the geographical investigation of emotion, affect and animality in veterinary medicine education, it is first important to acknowledge and deconstruct the pre-existing scientific methodologies through which animals and veterinary medicine are most commonly studied.

As a result of Western ontological hierarchies, animals have long been studied as organisms with a status that is distinct from humans, and beneath them on a hierarchy of life, justifying their positioning as a scientific object of study (Collard and Gillespie, 2015). In terms of specific disciplines, animals have been investigated most influentially through the field of *ethology*, the study of animal behaviour through observational methods in the field which: “is above all, seen as a branch of biology or physics, in short as *a science of control*” (Lestel, Brunois and Gaunet, 2006: 165). The traditional ethologist is a scientist with a specific set of skills including the learned ability to recognise animals’ behaviour and read it as a form of communication that can be understood by humans. Ethology, to some extent, thus played a part in the rationalisation of animals’ lives and provided quantitative evidence of sentience. The discipline has been broadened, however, to include more holistic understandings of animal sentience such as Lorimer’s (2010) phenomenological interpretation of the lives of seals.

Like ethology, the disciplines of *animal behaviour science* and *animal welfare* seek to understand the animal via scientific method through debates around consciousness, pain and stress: to what degree are animals conscious? How can we as humans speak on the same terms? How do animals suffer? For scientists, these are not so much ethical questions but are lacunae which one day might be solved through rigorous research (Buller, 2015; 2014). Similar questions relating to the nature of animals, disease and environment (and not purely physiological disease) are also consistently raised in veterinary medicine, such as in Monreal-Powlowsky *et al*’s (2017) paper ‘Daily salivary cortisol levels in response to stress factors in captive common bottlenose dolphins (*Tursiops truncatus*): a potential welfare indicator’. Levels of cortisol, the primary stress hormone, are commonly used as indicators for measuring stress within mammalian animal research, meaning that stress is considered as a physiological impact and not a matter of affective experience.

Quantitative evidence-based veterinary medicine and wider animal research is of course necessary for vets who deal with complex biochemistry on a daily basis and need to, for example, create precise dosages of drugs. However, on the point of methodological critique, if research about animals is concerned *only* with measurement of certain behaviours, physiological reactions and with proving a hypothesis, then the parameters of what animals could be and are capable of, are *already set in advance*. The result of this is that animals continue to be knowable objects and humans can retain their ontological exceptionalism.

Scientifically-informed animal methodology continues to rely on the tenets of scientific method: sustained observation and recording of behaviour and physiology in a mechanical fashion; replicability through different populations; objectivity of the scientist from the subject; hypotheses testing and lack of bias (Lestel, 2006). The enactment of scientific animal methodology can be seen in the practices of the UK Corncrake Census, where geographer Jamie Lorimer (2008) carried out an ethnography with field scientists investigating populations of the rare corncrake in north-west Scotland. A schematic project was set up to render the corncrake less elusive through the “practices of surveillance, counting and representation” (2008: 380). Spatially, this scientific attitude towards animal methodology results in animal populations as being perceived as a mosaic, where certain species live in certain places and individual animals are overlooked. The linking of science and animal lives thus limits and depoliticises animal agency and invalidates expression beyond categorised behaviours and physiological outcomes, whilst cementing quantitative methodology as the dominant way of approaching the study of animal lives.

Contemporary qualitative animal methodologies: some existing challenges

Whilst the scientific approach to animal methodology remains central to animal research, there is a well-developed strain of work which utilises a qualitative methodological framework. Occurring primarily within the social sciences, arts and humanities and outside the academy, the study of animals and humans via an experiential, societal and creative focus has always been ongoing. It is vital to note here that this dichotomous set up of qualitative versus quantitative is a Western construction which, if so coarsely defined, erases societies and cosmologies where animal and human lives have never been perceived as ontologically separate (Sundberg, 2013). By discussing contemporary animal

methodologies in human geography as I do here, I am cautious to not state that these apply to all forms of human-animal relations on a global scale; this discussion is always based within the specific site of the research – a UK vet school - which remains framed by Western, quantitative science. Additionally, I will not focus here on the history of methodologies involving animals but will detail how they are being worked out contemporaneously. More detail about theories and histories of human-animal relations (as they are very broadly termed) and their role in geographic thought has been provided appropriately in Chapter Two (ie. Literature Review).

This methodology is thus concerned with what is considered the third wave of animal geography and its associated methodological issues (Urbanik, 2012). If the first wave relates to understanding where animals fit into anthropocentric constructs of space (forms of biogeography) and second wave animal geography relates to interpretations of animals within verbal discourse, then third wave animal geography is characterised by the methodological struggles which result from a now fully accepted posthuman framework (Buller, 2015). The conceptual works of Haraway (2008), Barad (2003), Ingold (2000) and Philo and Wilbert (2001) have now influenced a vast body of animal geography which focuses on the more-than-representational and more-than-human aspects of our collective worlds. Key geographical texts include Lorimer's (2006) creative approach to writing the collective memories of reindeer and their herders, Jones' (2013) discussion about animality in rural landscapes and Patchett's (2008) inventive re-working of the histories of tiger taxidermy. Despite these particular examples and a well-developed conceptual base for third wave animal geography, methodology lags behind theory (Buller, 2015; Hodgetts and Lorimer, 2015).

Buller (2015) highlights the 'triple radical challenge' for contemporary animal geographers wishing to develop appropriate methodology. First, is the point that animals should be approached as "embodied individuals living their lives entangled with humans and their own wider environment" (Taylor, 2012: 40). Second, that animals are not made relevant purely through their human representation. Third, Buller states the importance of breaking down the dichotomy between natural and social sciences in order to "establish a set of concepts and methodologies that addresses what matters for both human and non-human animal subjects..." (Buller, 2015: 3). I would add, following Collard and Gillespie (2015), that tensions between species sameness and difference, consent and exploitation, and care and harm be written into any methodology involving non-human others. A

contemporary non-anthropocentric methodology must therefore work beyond the species divide and aim to evoke a sense of animality without claiming to be representative of animal experience. Animals should be taken to be participants in research and not used as devices to discuss what defines humanity.

What kind of methods would this methodology involve then? How might it be enacted? In order to explain how contemporary animal methodologies play out in practice, it is necessary to consider a set of parallel discussions about non-representational geography and associated methodological approaches: those debates regarding representation, affect and vibrant materialism also lie at the heart of current issues in animal-focused methodology.

Methodologies after the ‘affective turn’

Non-representational geography is not something new. Ten years on from Lorimer’s (2005) call for a more nuanced ‘*more-than-representational*’ geography, he notes that the radical, urgent claims inherent in non-representational theories are entering their third decade and questions whether geographers advancing a ‘non-rep’ agenda can continue to argue for its “now-ness” (Lorimer, 2015: 177). This section will thus not focus on the historiography of ‘non-rep’ but will take certain aspects of it for granted, so that methodological implications can be discussed fully. A more detailed engagement with non/more-than-representational geography is undertaken in the Literature Review.

Here, I aim to draw attention to the following points about how this philosophical position conceives our worlds. Firstly, non-representational geography is based on the notion that experience can never fully be represented - things come into being through their vital relations on complex spatial and temporal scales, not only through their discourses. Secondly, there is believed to be no objective reality and a disbelief in enduring Cartesian dualisms. Most relevantly to methodology, non-representational geography can be considered to be part of a wider ‘affective turn’, detailed by Lorimer (2015) as:

“An increasingly multidisciplinary cluster, affect studies enlist skills and interests from across the social sciences and creative arts. Certain sorts of themes have bobbed to the surface. In no particular order, we might treat the following list as exemplary: hope, anxiety, care, desperation, joy, wonder, enchantment, dread, attraction, security, health, intelligence, and mobility” (Lorimer, 2015: 181).

It is here that we can see the clear connections between non-representational geography, contemporary animal geography and this thesis as a whole – they are united under the key concerns of the ‘affective turn’ and specifically with care, empathy, atmosphere and science-as-practice.

Methodology after the affective turn owes much to the notion that ethics and events are always being worked out in practice. As Anderson (2006) states: “There is not, first, an ‘event’ and then, second, an affective ‘effect’ of such an ‘event’” (2006: 736). This means that an affective methodology has to challenge traditionally representative methods in social science such as the ‘gold standard’ interview (McCoyd and Kerson, 2006) followed by a defined practice of coding. If we are interested in moods and ambiguity in geography, then methodologies which primarily seek to organise reality end up shaping it into something else altogether. As McCormack (2015) states:

“We are not saying here that you cannot or should not talk to people or take photographs, but that these ways of doing things are generative preludes and supportive supplements to the inventive devising of something else...something that will be as distinctive to the problems as it is being drawn out” (2015: 96).

The same issues relating to representation and reliance on anthropocentric discourse (such as verbal and visual texts) apply to animal-focussed methodologies, not least because one can never relate to nonhuman others in these terms. If one wishes to involve animals as participants in research and challenge the scientism inherent in animal research, then carrying out interviews with humans *about* animals alone will not suffice. Hodgetts and Lorimer (2015) contend that:

“Furthermore, the bias towards ethnographic methodologies involving participant observation of humans in their interactions with nonhumans; interviews with human subjects about their experiences with nonhumans; discourse analysis of human representations and mobilizations of nonhumans; and the like – leads to the retention of a bias towards human sensings of nonhumans” (2014: 287).

How then can we involve animals in a way that challenges anthropocentrism and anthropomorphism when we cannot simply abandon representational methods? Again, we can work this through debates on non-representational methodologies.

In a similar vein as McCormack (2015), Vannini (2015b) suggests that there are no methods distinct to the affective turn, and that what makes a methodology *more-than-*

representational is the *style* in which research is carried out as a whole. Representation, of course, cannot be escaped. Ethnography, interviewing, photography and GIS for example remain within the geographer's repertoire – the point is to acknowledge that these methods are fluid, blurring the lines between event and outcome, researcher and participant, and body and world. Ingold characterises this methodological approach as a mood of possibility and attunement with otherness:

“This is not exactly a theory, nor is it a method or technique as this is commonly understood... It is a means, rather, of carrying on and of being carried – that is, of living a life with others – humans and non-humans all – that is cognizant of the past, finely attuned to the conditions of the present, and speculatively open to the possibilities of the future” (Ingold, 2015: vii).

Vannini (2015a) attempts to delineate more specifically how a nonrepresentational methodology works through the example of ethnography, and draws upon its qualities of performance, vitality, materiality and intercorporeality. What marks out this style of ethnography is how emotion and affect are not separated off as something which gets in the way of 'real' research, meaning the above qualities can come to the fore and offer something which is beyond representation. In essence, a methodology formed through these properties allows the researcher to “evoke rather than just report” (Vannini, 2015a: 318).

The tools to evoke tensions, atmospheres and create speculative moods in more-than-representational research partly come through a move towards interdisciplinarity. It has been the involvement of creative and artistic practices in particular which has allowed researchers to invigorate, not report upon, research by “...taking dedicated risks, in exercising passion...” (Vannini, 2015a: 319). Far from a methodology which places the researcher inside a rational body, separate from the emotional participant, it is recognised that these groups feel together to create contingent research. Recognising vitality within an ethnography focussed on the more-than-representational for example means the researcher attunes themselves and highlights the excessive and unplannable nature of qualitative research – we must make do with what we can and welcome our relative lack of control.

Associated with Bennett's (2010) 'vibrant materialism', a vitalist ethnography would pay attention to the overlooked and critically consider the potential of things to have their own agency and temporal resonance within the wider network of things. Vitality then,

brings materialism to the fore in ethnography, where objects normally seen as inert and inconsequential are brought to life through inventive incorporation into research. This can be seen in Olden's (2016b) narrative journey through a waste water treatment facility: as the story progresses, various objects of waste are brought alive by Olden's attention to their role in the processes of the water treatment. By association, the notion of intercorporeality can be enlivened within ethnography to draw attention to the relations between interactive bodies and their ability to affect and be affected through sensuous ways beyond verbal communication. It is here – at the juncture between different bodies – that more-than representational geography and animal-focused research meld to form the circumstances for *more-than-human methodologies*.

The work of Vinciane Despret is central to this development of more-than-human methodology and demonstrates that it is the mode of inquiry and not necessarily the deployment of novel methods, which better involves nonhuman others. Through multiple writings (most notably 'The body we care for: figures of anthro-zoo-genesis' (2004) and a set of translated works in an edition of the journal *Angelaki* (2015), Despret re-formulates the research questions usually asked of animals and thus turns anthropocentrism on its head:

“The essential and pressing duplicity of this question transforms all research into ethical, aesthetic and ethological research: “who am I, how does my gaze work so that you appear to me as you are?” at the same time as “who are you so that I see you thus?” The first without the second pulls us back to a sterile constructivism; the second without the first to a dogmatic realism” (Despret, 2015: 38).

Although a largely philosophical endeavour, Despret's writing brings to life those animals she thinks with to create lively, tactile individuals without overt anthropomorphism. Such work is associated with the development of environmental humanities and geohumanities, where more-than-human methodologies are taken down an ecological route. Tsing (2015), van Dooren (2014) and van Dooren and Rose (2016) lay out multiple relational worlds through an engagement with more-than-human bodies, matter and ecological possibility.

More-than-human methodologies then, are about a re-working of research questions towards a speculative ethics, and about fostering a creative line of enquiry than about developing new methods. There is a risk however, that this form of research becomes removed from the fleshy realities of animal lives through pondering on philosophy and

that relations between different bodies – human and nonhuman – become idealised. It becomes all too easy to get whisked away by the alluring science fictions of more-than-human geography.

In an attempt to face up to these critiques of abstraction, more-than-human methodologies should be ready to become involved with nonhuman bodies in an embodied, tactile way when appropriate. Often this work is practical, messy, shitty even. Whilst always keeping ethics in mind, the work of both Patchett (2012) and Straughan (2015) separately enliven dead animal bodies through personally working with the practices of taxidermy. Additionally, Geiger and Hovorka (2015) carry out sustained multispecies ethnography in order to re-imagine donkey welfare assessment as an ‘exploration of donkeying’. Influenced by more critical, ontology-focussed forms of ethology such as that of von Uexküll (Buchanan, 2008), these contemporary animal methodologies are often deeply embedded within the particular sites, landscapes and places where nonhuman others dwell (Lorimer, 2010; Garlick 2017; Olden, 2016a).

The struggle of representation and the challenge of interpreting ‘data’ remains however – no matter how contingent methodology may be, it still must be written up and made into something communicable. This is a vital, sometimes overlooked aspect of methodology and one which is tied closely to more-than-human methodology in particular. The issues of interpretation, ‘writing up’ and creativity are central tensions within this thesis as a whole and are detailed in Section Five of this chapter, entitled ‘writing a methodology for more-than-human empathy’.

This outline of the conceptual development and contemporary basis of more-than-human methodology has been inserted at this point for a number of reasons. First, to make it clear why research involving animals is predominantly framed through science and how the development of qualitative methodologies in animal research offers a vital challenge to ontological assumptions about human-animal relations. This also explains why approaching research within the vet school qualitatively constitutes a radical reframing of what veterinary medicine is and might yet be. Second, this section discusses the crucial links between non-representational geographies and animal-focussed methodologies and how the united philosophical stance of relational ontology opens up space for more contingent, affectively aware methodologies. Finally, and on a practical note, this discussion provides guidance as to what methods and methodologies might be appropriate for this research. As shown, it is not so much about inventing new methods

to escape the complexities of human-animal communication and representation but rather, that more-than-human methodologies are based upon a speculative re-working of existing qualitative methods. This is a methodology that is, first and foremost, open to ethical imagination and sensuous science, as will be shown in the next section which details the journey through the methodology as it happened in practice and in place. The methodology of this thesis and more-than-human methodology as a whole can be succinctly characterised by the following statement from Ingold (2015): “It is in the realm of the explicit, not the tacit, that silence reigns” (2015: ix).

An institutional journey: Working through, with and against the vet school

Getting acquainted with the BVMS curriculum

It was following the meeting with Stewart that I began a period of ethnographically-focussed fieldwork running from September to April, the same time frame as one whole academic year in the vet school. Specifically, it was late September that the new first year students arrived on campus to begin their veterinary degree as members of ‘BVMS 1’. I decided that this would provide me with the perfect opportunity to enter the practical workings of the vet school – first year students would be apprehensive during their early classes and so I imagined I would fit right in. After all, I had to start somewhere.

In order to understand more about the vet school’s operation – alongside the clear intention of ‘answering’ my research questions – I had to work *through* the vet school by practically learning about the BVMS curriculum and its physical, spatial layout. This research is concerned with the BVMS degree in particular and so my first methodological aim was to find out how to gain a broad experiential understanding of each of the years which made up the degree: from 1st year to 5th year.

Aside from an awareness that the BVMS degree is made up of five years of study, I knew little about the degree structure in the beginning. As such, my position as a new and unknowing body in the spaces of the vet school mimicked that of a first-year student. Our enquiries were similar: how exactly did new students navigate the vet school practically and understand where to be and what to learn? As part of our discussions, Stewart had given me access to the BVMS degree virtual learning environment (VLE) and, through

tinkering within this online space, I learnt that it was here that one gains all the information one needs to begin the BVMS degree at the vet school.

The VLE and the vet school website provided me with the practical framework for approaching my fieldwork. Firstly, an explanation of the BVMS degree structure showed me how the degree was divided into three phases – Foundation (Years One and Two), Clinical (Years Three and Four) and Professional (Year Five) – as seen in Table I in the Introduction.

Once a new student had located their phase and then their year group on the VLE, they access the content relating to information about dates and times for classes, alongside uploaded lecture and class content. In my position as a ‘new student’, this is how I gained access to the details about what classes were on, where, for every year of the BVMS degree. This provided me with the base-level knowledge I needed about the spatial and temporal workings of the vet school, and diverse opportunities to dip my toes in the water.

From these tentative digital beginnings, this methodology developed into the story of the interwoven institutional journeys made as I became more embedded into the BVMS curriculum and those undergraduate students who move from first to fifth year. For ease, I have created ‘*Mapping methodologies: an institutional journey through the vet school*’ (Figure 4 on next page) which works as a visual, practical and conceptual companion to be referred to throughout the remainder of this chapter. This methodology can thus be widely characterised as a multi-sited, multi-species ethnography that starts in the central lecture theatres of the vet school and then branches out into wider spaces of the vet school, namely: the anatomy laboratory, clinical skills facilities, equine centre, university hospital and farm. Importantly, this approach is reflected in the structuring of the empirical chapters, which are based in the lecture theatre, the anatomy lab and clinical skills facility, the farm and the Small Animal Hospital respectively.

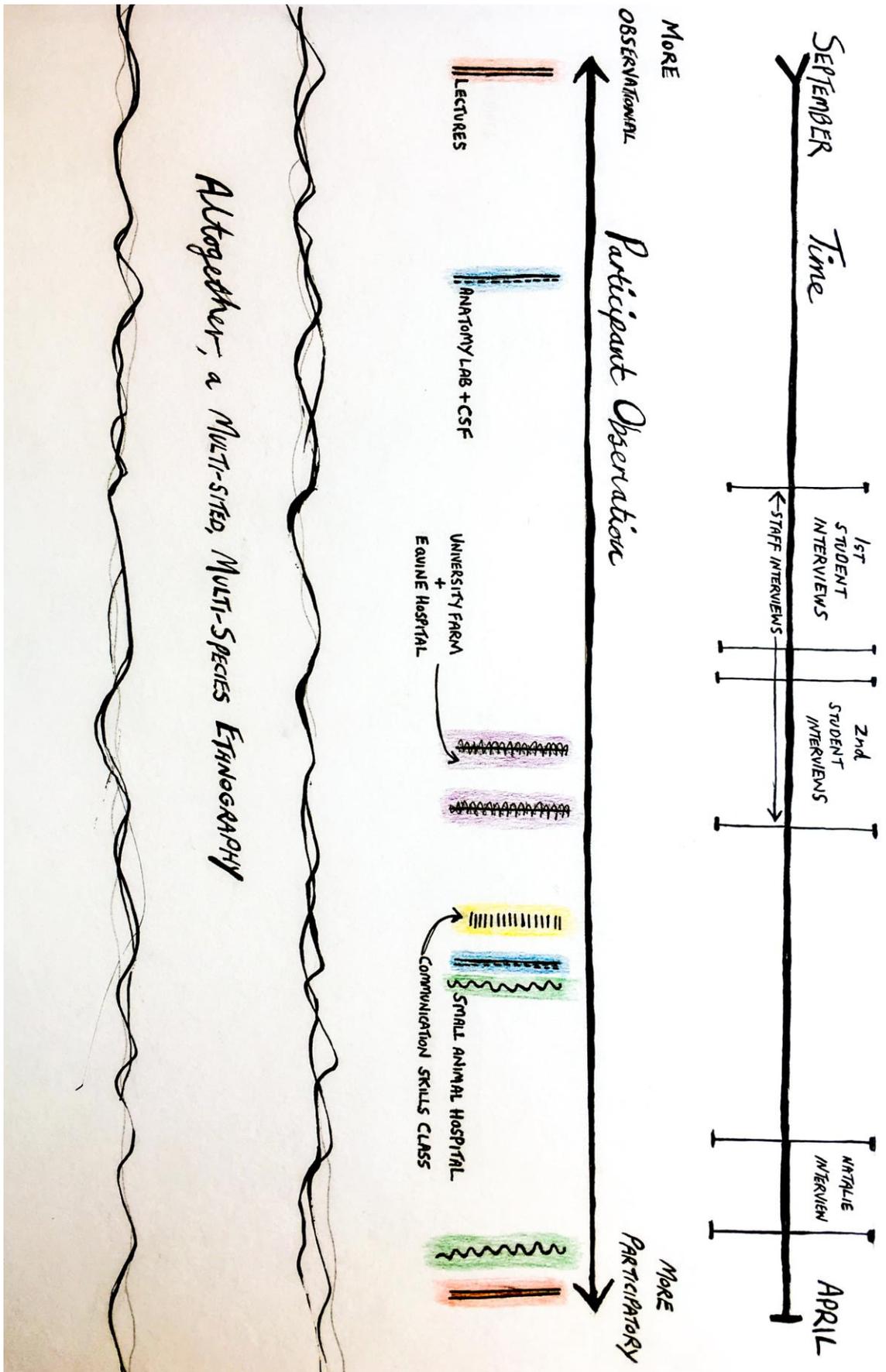


Figure 2 - Mapping methodologies: an institutional journey through the vet school (Colours demarcate start and end of time spent in each site)

My own involvement as a researcher begins with more detached observations in first year lectures and, as if the methodology were a BVMS degree happening in fast forward, ends with the participatory clinical work within the hospital. Whilst this movement from first year spaces to fifth year spaces was intentioned in order to 'represent' the curriculum rigorously, it was also organic and reflected the letting-up of my constant anxieties during fieldwork (Cook and Crang, 2007). Additionally, I carried out two sets of interviews with students and one set of interviews with selected staff, as well as including hand-drawn illustration throughout. In doing so, it was possible to gain understanding of the practices and more-than-human ethics of veterinary education. Even this however does not explain what *actually happened* and so the following sub-sections detail how in particular a more-than-human methodology was crafted, how challenges/limitations arose and how they were confronted.

Attending lectures: “Excuse me, are you heading to the first year lecture right now?”

In order to develop the multi-sited and multi-species ethnography I had planned for, I began by attending lectures, namely those in BVMS I. Whilst in lectures, I noted how others behaved: students used their laptops to download the appropriate PowerPoint slides for the class and would add their own notes as the lecture progressed. Some drew quick, scribbly diagrams on notepads. I learnt to do the same – drawing upon my own experiences as an undergraduate student - but instead of focussing on the complicated biological content, I wrote down observations about how animals were discursively constructed, how the lecture was performed and engaged with and how particular atmospheres arose. Although still being practice-based, this aspect of the methodology was also tied into a brief period of discursive engagement of lecture and module content, with the VLE acting as an archive.

As far as creating a more-than-human methodology, the first lesson learned was how learning about animals did not necessarily mean learning with animals. None were present, or visible, in the lecture theatre and so I had to consider their configuration in the discourses of lecture material. It was not the hands-on, multi-species ethnography I had hoped for, but it provided two initial findings: firstly, that animal presence in the vet school is highly controlled, with clear divisions drawn between spaces where animals were meant to be and where they were not. Much of veterinary medicine education involves working in these 'non-animal' spaces, in front of screens or at desks. Secondly, in

understanding how animal bodies are discursively made through lectures and lecture materials, it was possible to state how animals are formally positioned in ethical structures of the vet school and how practical, later-stage veterinary education might differ from this.

I adhered to my College-approved ethical clearance. Gaining consent for participant observation in large groups (as an aspect of ethnography) is notably tricky (Wiles *et al*, 2007). My first approach was to introduce myself to the lecture theatre by asking the lecturer for some time to briefly explain my role and ethical approach to the whole class. I highlighted that I was interested in observing how veterinary education takes place practically and that I was *not* interested in individuals' personal information or identifiable characteristics – all my research would be anonymous and confidential. This was met with silence (as is the nature of the lecture theatre!) and I would take my seat to watch the lecture.

Along with this, I set out information sheets and consent forms at the front of the class, pinned information sheets to all available noticeboards in the main building and, with the help of vet school administrative staff, sent out an email to all BVMS students, detailing my research and highlighting how I would conclude any period of participant observation if someone informed me that they felt uncomfortable. What helped with the process of consent is that observation is a central educational technique in veterinary pedagogy – vet students themselves observe others working in order to learn the profession and are taught frequently about the notion of confidentiality in this context. Whilst no-one formally signed a consent form for lecture theatre participant observation (despite my offer), I believe it was fair to think that students were tacitly, and passively, accepting of my role as an observer and occasional small-talker within the lecture theatres. Aside from a few more obviously outgoing students who asked what I was up to when I sat next to them, the majority of students ignored my presence.

As such, I did struggle with my positionality and felt my method was too observational and detached. A good social science researcher should be, well, sociable, or so I believed. Much of the time I was afraid, rendered a little paranoid and mute. For many of the lectures, I did not understand the content at all. Sometimes, I would have fleeting memories of Higher Chemistry only for this to quickly be surpassed by far more advanced science. I did have a background in veterinary medicine, but this was through my own family history and the veterinary medicine I knew was not complex cell biology.

As such, it felt like a double failure: I was neither an archetypal ethnographer nor an informed veterinary scientist.

On reflection, these feelings bring up some key points about more-than-human methodology and practising ethnography more widely. If one is to take seriously the notion of more-than-human worlds, that is, not 'just' the relational involvement of nonhuman animals but all the vibrant materialisms at play, then 'the social' need to conceptualise beyond what we think of as sociable behaviour. I will expand on this realisation in the following sub-section but for now believe it is important to note that my limited verbal engagement in the lecture theatre allowed for a closer focus on how geographies are constructed without active involvement in spoken conversation. Far from resulting in detachment from the social, remaining quiet requires a level of vulnerability which leads to an acknowledgement of the relational tensions between the bodies that make up a space: it is a distinctly more-than-human praxis. Just because 'not much is happening' in the lecture theatre does not mean the hum of social relations goes away. This also challenges the common emotional demands put on ethnographers such as the ability to 'role play' or get participants to 'open up' (Cook and Crang, 2007).

The line representing the spectrum from 'observation' to 'participation' on the methodological map (Figure 4) is thus partly false when it is acknowledged that I am *always* participating in the co-constituted worlds of the vet school by virtue of being in a part of that spatial assemblage. However, this is not to say that subjectivity dissolves, structural differences can be bypassed, and that hands-on involvement is not important, as will be highlighted in the following sub-section.

Overall, from March to September of one academic year, I carried out participant observation in lectures covering a wide variety of topics from first, second and third year. As the fourth and fifth years of study are centred more on clinical work, and because fifth year students have personalised timetables, this made it difficult to find lectures to attend for these advanced phases of the degree programme. This gap was filled via more participant observation at other sites within the vet school, as is discussed in the next section.

Where are all the animals? Practice-based multi-species ethnography in the vet school

After a few weeks of attending lectures, gaining essential experience and yet being frustrated by the lack of animal presence, I began extending my participant observation to the other educational locations of the BVMS degree. Relating to the methodology map (Figure 4), this is signified by the locations from the centre to the right hand of the map¹⁸ and by the movement of time from the middle to the latter stages of the fieldwork period (October to April). Access was gained through a combination of utilising the VLE, asking for help from other students and contacting the relevant member of staff via email.

Ethical interventions with ‘dead’ animal bodies

I first accessed a BVMS 3 anaesthetics practical, held in the ‘Clinical Skills Facility (CSF) by asking a student called Rebecca if she could help me find the location of the room. My ‘royal blue scrubs’, part of the required personal protective equipment (PPE) lay in my bag in anticipation of hands-on activities. After a lecture, Rebecca and I walked across a concourse that connected the main building to another unknown building and went down a flight of stairs into the basement where we got changed. Many of the locations would not be possible to find were it not for the embedded, sustained and situated nature of the ethnography. It was during this time, where I attended more practical classes, that I saw the same students again and again and I began to feel less out of place despite circuitous journeys across campus.

I was still on the search for the animals of the vet school however. My first non-human encounter in this first class was in the Clinical Skills Facility. They were notable for being dead. This was also the case in the Anatomy Lab. Whilst I had the opportunity to engage in more tactile, sensuous forms of veterinary knowledge-making, my ethnography seemed distinctly un-lively. Influenced by the material approaches of Patchett (2008; 2012) and Straughan (2015), and Dixon’s feminist geopolitics of touch (2016), I worked through this by consciously involving the dead matter laid out on the tables in these locations. Sometimes pickled body parts, sometimes whole canine cadavers, the dead animal bodies were made active through creative ethical interventions I held with students. These were practical classes and I could not remain as observant as I did in the lecture theatres.

¹⁸ These are specifically: Anatomy Lab, Clinical Skills Facility (CSF), University Farm, Communication Skills Class, Equine Hospital and Small Animal Hospital.

Classes in the Anatomy Lab and CSF regularly involved students working at various 'stations' - tables containing a specimen and a task that they had to do to that specimen. This included: dissecting and labelling parts of a sheep's brain, carrying out a dummy-hysterectomy on a canine cadaver, applying a nerve block to a disembodied horse's hoof. Sometimes, these stations focussed on utilising certain instrumental skills such as using suturing equipment or dental instruments on animal specimens. Other times, there were no animal specimens used at all, but instead specially crafted models were involved, such as the famed Intubation Cat¹⁹, a comedic soft toy with plastic windpipe that students would insert intubation tubes into.

I would walk around these stations, just as the students did, and watch what was going on at each table. I would introduce myself as a researcher looking into the use of tactility and animal ethics in veterinary medicine which, unlike in lectures, spawned fascinating conversations about motor memory and hand-eye coordination. Creative ethical interventions arose when I asked the students oblique questions about what they were doing. Whilst tutors patrolled the class quizzing students on procedure and anatomy, I asked them how it felt to touch something and challenged them on their descriptions.

"You say the brain feels surprisingly firm, not squishy? How does that make you feel, is it weird? Or totally normal?", I would say, as an example.

My aim was to re-frame the questions being asked of the specimens, in order to enliven their affective qualities, despite being dead and 'inanimate'. Unlike in the interviews I held with students (considered later in this chapter), this line of ethical questioning combined with the tactile involvement with animal matter, seemed to bring issues of empathy more clearly to the fore.

Aside from remarking upon the atmospheres that arose, this methodology provoked new atmospheres to form and alternate modes of more-than-human possibility to open up. Some students suggested that I get involved with the touching, indicating that it was essential for me to 'feel for myself'. Surreptitiously, since strictly speaking I wasn't meant to be touching, I slipped on the latex gloves and probed the brains like any other vet

¹⁹ During my time at the vet school, someone had stolen Intubation Cat and somehow photographed it in various locations throughout the UK. Intubation Cat had its own Facebook page and, for a while, there was a heightened mystery about who was playing this prank. I never found out what actually happened to Intubation Cat or whether they were returned to the vet school.

student would. A strange connection resulted, a moment of enchanting participation that was truly multi-species. This type of participant observation was some of the most productive through my time at the vet school.

It maybe goes without saying that students and staff were bemused by this mode of enquiry. In asking these questions, my presence subverted the spaces of the anatomy lab and CSF in the way they distracted the aim of the class from fulfilling intended learning outcomes towards ontological uncertainty. Each class had an associated worksheet to be filled out, which I utilised as a type of field diary with scribbled notes and diagrams.²⁰ This meant that I ‘fitted in’ – most of the time my behaviour mimicking that of a student. At other times I was mistaken as a class demonstrator. I felt embarrassed when I had to declare I could not help and worried I was wasting their time. There were classes when my approach in these spaces fell completely flat and I was stared at and whispered about. Cautious of consenting practices, I would take this as a cue to leave.

Working with real, living animals: beastly tales of containment and agency

Involving the animals of the vet school required entry into new spaces, beyond those of the lecture theatres, anatomy lab and CSF, all of which were contained within close proximity on campus. Although one might imagine a vet school to be full of live animals, the reality in this vet school is that living animals are contained to specific locations which are visited by students. In terms of ownership, the vet school keeps its own stock of beef and dairy cattle, sheep and horses at the University Farm and the Equine Hospital. The school does not own any live cats or dogs²¹. There are some ‘small furrries’ such as rabbits and guinea pigs, and a small reptile house within the CSF complex, although I was unable to access the facility as students don’t regularly come into contact with these creatures.

My ability to access the lives of animals resident within the vet school was thus framed by the BVMS curriculum. Although conscious of Hodgetts and Lorimer’s (2015) critique that involving animals in research tends to fall into this anthropocentric trap whereby animals are always placed as part of a wider human structure, I ought to reassert that one objective of this thesis is to consider how animal bodies are made via the different geographies of the vet school and so the curriculum forms one of these controlling

²⁰ Please see Appendices C and D for examples of these annotated worksheets (and field notebooks).

²¹ Sometimes staff who have pet dogs, and who take them to work, allow them to be used in dog handling classes.

structures. To offer balance, another research question is to investigate how animals manage to demonstrate their own agency and resist their human orderings. This is why the methodological approach is better described as ‘more-than-human’ as opposed to ‘purely animal’, where the focus is on how different bodies “induce and are induced, affect and are affected” (Despret, 2004: 114).

The majority of live animal presence within fieldwork occurred during time spent at the University Farm, located a 20-minute drive from campus. Having noted the dates on which students would be visiting the farm from the online timetables, I contacted the farm manager and farm director via email to ask if I would be able to attend these visits. It was during this correspondence and the time spent on the farm that I felt most comfortable. I was relatively experienced with working on farms, especially in a veterinary context, having spent much time during my childhood accompanying my dad on his rounds. I had the skills and codes of behaviour already – I knew how to dress, how to follow biosecurity, how to talk daily farm life. As I drove up the driveway to the University Farm, I felt at ease in my role as a researcher: in the farm, everyone mucks in and assigned roles are less clear than in the anatomy lab.

My farm experience also meant I was more able to easily exist with cattle and could sense changes in their behaviour. This relative comfort allowed me to focus more on the affective-material relations between the cattle and other bodies in the space, including students, staff and their environment. Here, I was influenced by the work of Temple Grandin (2006), who carefully acknowledges the sensibilities of cattle as they move through their structured worlds, as a form of becoming-with-cattle.

Upon arriving at the farm and introducing myself to staff, I was put into a group alongside other students, as if I were taking part in the class/visit. It is important, for the sake of safety, that human movement is under control in farm environments. Despite an *esprit de corps* where ‘everyone mucks in’, there is also a clear division between who is in charge and who must follow what they are told to do. In this case then, it was more crucial for me to adhere to what I was being told to do as part of a group, than it was to act as an individual researcher seeking written consent.

The classes/visits I attended (all BVMS 1) involved touring different areas of the farm, mostly in order to learn about the lifecycles of dairy and beef cattle, and how to gauge animals’ condition and welfare. Each group visited each part of the farm at a different time

in order to not stress the cattle – classes were made up of about 30 people. I took part in the classes as all the other students did, by observing the cattle, approaching them and feeling their bodies. So that the cattle were recognised as actors in their own right, I paid particular attention to how individual cows acted out against the herd, such as through loud vocalisation or licking students in curiosity. This made it possible to understand more about how the cattle are made docile by the farming structures and educational practices, but also how they retain a sense of freedom and affective, empathic connection to other animals.

These visits were made challenging however, due to the conflicting ethical approaches in relation to the role of the vet in farming. As the institutional journey through the vet school progressed, this formed a space-time where I felt I was sometimes working against the vet school. Unease was not only felt as an internal ethical struggle within myself but was something demonstrated by students. Teaching on the farm was, understandably, very much in favour of animal farming and the aim was to point out the vital role the vet plays in helping to manage animal health and welfare. Students, especially those with little or no farm experience, registered discomfort when certain farming practices were discussed in place, such as when a conversation about the immediate removal of calves from their mothers occurred as we observed those calves alone in their own pens. The subject was quickly changed however, meaning there was little ethical space to consider the possibility for a large animal veterinary medicine to exist outside of farming.²² Although I emphasised my knowledge of farming to staff when I asked to attend the farm visits, I remain ambiguous about farming practices and the concept of animal farming as a whole. My research is not completely 'in line' with vegan geographies but it does remain somewhat influenced by the notions of animal slavery and justice. The thesis instead 'stays with the trouble' of the university farm, rather than concluding that it is right or wrong for the sake of the animals (Haraway, 2016).

I did not draw particular attention to my personal ethical stance for fear that participants would view me as being unnecessarily judgemental or, worse still, labelled problematically as an 'animal rights activist'. When I did come to mention animal ethics and empathy in more detail in the interview with the farm director, it was not mocked but instead framed as an academic question – unlike other farms, the university farm is still an academic space run by farmer-academics and so critical approaches are tolerated, to some degree.

²² For a definition of 'large animal', please see the Glossary.

Although I had spent a small amount of time in the Equine Hospital (2 half-day classes) and accessed these classes in a similar way to the farm, this activity does not feature so heavily in the thesis. This is because the equine hospital was difficult to access – it was not possible to walk into like the main building of the vet school or farm as its central purpose is as a clinical practice visited by paying clients. Equine medicine is a specialism within veterinary medicine due to the particular positioning of horses within the profession. Holding neither the status of pet or farm animal, horses are generally understood by vet students to be a difficult subject. This is not only because of their complex, delicate bodies but because it involves working within wider equine cultures that are noted for their challenging relationships between horse owners and vets. Therefore, any involvement of horses specifically in this thesis would need greater participation in the equine worlds beyond the vet school – something that unfortunately was beyond the remit of this project.

Shadowing Natalie in the Small Animal Hospital (SAH)

Through varying degrees of participant observation in lectures, and practical classes in the anatomy lab, CSF, university farm and equine hospital, I had managed to work with students from BVMS 1-4 and involve animals either through interacting with our own living bodies or through creative ethical intervention with dead animals/animal matter. However, an essential part of the BVMS degree occurs outside the vet school classrooms and organised site visits. Throughout all years, students take part in mandatory Extra-Mural Studies (EMS) during their breaks between semesters, whereby they work in ‘real-life’ veterinary practices and farms in order to translate their knowledge and practical skills into a clinical context. EMS is one of the pillars of this practically-situated profession – there is no point in knowing the veterinary theory if one cannot navigate a full day in a working veterinary practice. Although I was unable to carry out participant observation of students during their EMS, I did raise the topic of EMS specifically in the second round of interviews I held with selected students. Explained in greater detail in the following section, for now, I want to note how I extended the multi-species ethnography into another work-based space within the BVMS curriculum – the Small Animal Hospital (SAH).

Gaining access to the SAH was central to the development of the research project as it allowed me to participate with hard-to-reach fifth year students, giving me an

understanding of the realities of the Professional Stage of the BVMS degree and provided experience of working within a specialist clinical environment.

I was able to shadow 5th year student Natalie during her time at the SAH, having first contacted a small animal clinician I'd previously met during an anatomy class and emailed a collection of fifth year students working within the SAH during a two week block from mid-March to start of April. Natalie was the only one to reply to my email outlining my research aims, and explaining my interest in shadowing students within the SAH in order to learn more about practical learning and working within a fast-paced clinical space. As there were limited set lectures during fifth year in which I could 'bump into' any students and ask them personally to get involved, this was my only recruitment route. Natalie was friendly, expressing an interest in my research and keenness to help out. I believe again it was the atmosphere of 'mucking in' in the vet school combined with structural acceptance of the benefit of observation during clinical work that made it possible for Natalie and me to set up this period of research - within the SAH, students spend much of their time watching and helping out with more senior clinicians and so Natalie's role was not dissimilar to my own as multi-species ethnographer. In a way, I was carrying out participant observation of Natalie's participant observation. Chapter Seven covers in close detail this period of time spent at the SAH. Here I want to deal specifically with issues of positionality and participation.

Part of the reason why this stage of ethnography worked so well is because Natalie and I could relate to one another on account of our similar backgrounds. We are the same age, from the same area of the UK, share the same hobbies and a sense of humour. Whilst previous stages of fieldwork had felt somewhat isolated because of my unfamiliarity with spaces and practices, within the SAH, with Natalie, the ethnography took on a peculiar nostalgic aspect. During my time at my father's veterinary practice (both 'hanging around' and working as a receptionist), I learnt the rhythms of veterinary clinical work such that they have influenced my understanding of the profession and my relations to animals, care and empathy. Natalie and I could both relate to this sense of homeliness: knowing how to behave in a clinic, how it feels to have a useful task to do and the sense of collegiality that comes from understanding some veterinary jargon and gallows humour. The two weeks I spent with Natalie and other staff and students in the SAH were the most 'participatory' of the ethnography, if you count participating as the touchy-feely work that evidently creates new, co-produced realities for humans and animals alike. We shared the

satisfaction of well thought out diagnosis as well as the bodily exhaustion of demand-led, client-facing work with no time for a lunch break.

There is, of course, a risk of glorifying or romanticising this period – there were limits and challenges alongside the camaraderie and physical closeness to animals that I longed for. The SAH was especially frantic with people, animals and equipment moving in multiple directions at all times meaning it was not possible to explain to everyone my position as a researcher, not a student. I was commonly mistaken for a student as we wore the same coloured scrubs uniform. Sometimes this led to confusion and frustration from staff who might have thought I was a student not pulling their weight. Additionally, there were times where I was asked to do things by staff:

“Can you pass me a silver bandage?”, a nurse asked me as she was in the middle of adjusting the breathing tube of dog in the intensive care kennel.

I flustered in moments like this. Do I declare that I am not a student and go into the awkward and long story about how I am actually a researcher who is observing Natalie and that I’m not technically allowed to touch anything? Or do I root around in the nearby drawer to find something that could be a silver bandage and helpfully pass it to the nurse? What if it’s the wrong bandage? What if the dog stops breathing?

I decided to find a bandage, any bandage and it was fine. The SAH is an emergency hospital and working within it – or even moving through its spaces whilst dressed in scrubs – requires pragmatism. Part of what it means to be a student vet is the ability to confront ethical dilemmas and make a decision, quickly, lest you upset the flow of clinical practice. This does not mean that matters of consent fall by the wayside, but that consent depends on the individual in need at that particular site. There were many times when that individual was an animal patient and staff and students pushed aside human constructs of verbal consent and dignity to enact animal-centred care.

Whilst I was participating and observing everything that went on as I shadowed Natalie, I asked her to talk me through how she did things, and how she felt doing them, in a similar way to the creative ethical interventions carried out in the anatomy lab and CSF:

“How exactly do you insert that needle?”

“How do you think the dog feels?”

“How did you figure out how to read that ultrasound scan?”

These sorts of question had to be carefully spaced throughout the day so as not to create annoyance or any distraction from the immediate tasks at hand. Often though, these questions branched out into much deeper ethical discussions between Natalie and I or within the wider student group, as we ate lunch or stroked one of the canine inpatients in a quieter moment. Such moments can be seen as a *thinking with*, as opposed to a thinking about animals and about veterinary medicine as a sensuous science. When learning veterinary medicine is so often focussed around objective biochemical or physiological knowledge and about providing clear outcomes, this methodology was about providing a space for speculating what might exist in the spaces in-between science and emotion, and human and animal.

Interviewing: on the difficulty of talking about doing and feeling

Interviews with BVMS students

As part of this multi-sited, multi-species ethnography, I carried out interviews with students and staff within the vet school. The inclusion of interviews as a method within a methodology I consider to be more-than-human raises a paradox – how to evoke the non-representational whilst recognising that what people say about the themes of this research are still important. What exactly are the aims of doing interviews with humans when the methodological objective is to challenge anthropocentrism and verbal representation? Perhaps it is easiest to explain this by stating what I did *not* intend the interviews to do.

First, the data gained through interviews would not be used to provide direct evidence for participant observation data – the words spoken in interviews are not more ‘real’ than what could be witnessed in and lived through during practice-based fieldwork. As will be discussed in the following section on writing, words are a practice as much as the non-verbal communications that come from touch. This is not to say that these interviews are necessarily carried out and analysed as they would through ethnomethodology or conversation analysis, both of which constitute a distinct analytical tradition in social research. Second, although those individuals involved in the student interviews were selected from different levels of the BVMS degree, the primary aim of the

interviews is not to seek quantitative representation of each year group. Eight interviews with five different students were carried out altogether.

In order to recruit students into interviews, I went through the student-run 'peer-support service'. Posters advertising this service appeared across campus and featured the names of those students involved, along with their photos, a short biography and email address. The posters stated that these student representatives could be contacted should a student feel stressed, worried or lonely in relation to the BVMS degree. In essence, these students were positioned as friendly souls who, by 'being in the same position', could understand the situated stresses of being a vet student.²³ As I did not know many students personally – there were hundreds of students who fluctuated in attendance – this method of recruitment was judged the most appropriate.

There were implications arising from recruitment through the peer-support network. Contributing students are particularly involved in the workings of vet school life, volunteering their time to care for others, and as representatives of other vet school bodies, such as the vet student association. As such, these are students with a relatively public profile and who perhaps are already more socially available and adept in talking about emotions and empathy in the degree.

In order to make sure these participants could feel comfortable during interviews, I suggested that they take place within the vet school. I was told by Rebecca there were meeting rooms that could be booked out and so these rooms provided the privacy and confidentiality that was necessary. Only one interview was held elsewhere (in a café), according to preference. All interviews were recorded with a Dictaphone, lasted between 45-60 minutes and were transcribed.

Carrying out these interviews gave me insights into the geographies of affect and emotion in a way that contrasted with participant observation. Interviewees and I were all within a similar age bracket and interview content was often chatty and conversational.

Two sets of student interviews were carried out with the *first* set aiming to initiate an open conversation about experiences of learning in the vet school, how each person felt in the

²³ There is a lot of critical work to be done in order to understand the role and practices of peer-support services in veterinary medicine education but unfortunately, this is not an aim of this thesis and so is beyond its remit.

multiple spaces of the vet school and what ‘empathy for animals’ might mean in veterinary medicine. These interviews were semi-structured and brought up topics otherwise infrequently discussed in daily vet school life. Instead of asking for direct answers, I intended for the interviews to be a form of ethical enquiry about the lives of those who inhabit the vet school, an aim which did not always go to plan. This mode of thinking and conversing was often met with surprise from students more used to providing correct answers to clear questions. For example, the question: “Do you feel there is such a thing as animal empathy, or empathy for animals in the vet school?” often elicited frowns of confusion and long pauses before speaking. Some students relished this emotional task of ‘using the other side of their brain’ and provided articulate reflections on animal-focussed care. Others worried they did not know the answer and struggled to find the right words. I would reply by emphasising that there is no right answer to these questions and that I was just interested in what they felt.

It was these moments that were the most revealing in the student interviews – the gaps in conversation and the muddled use of language that arose from the difficulty of trying to verbally explain emotional relations with animal others. Whilst I may be equipped with a bank of phrases to evoke the more-than-representational, learned through a specialised disciplinary community, this was not the case for those taking part in student interviews. This is not to say, of course, that they do not feel these things or that they do not exist but that language practices differ. In line with a familiar critique of emotional geographies, it remains that bringing up an ‘emotional’ topic does not necessarily enliven emotional, affective content in interviews – sometimes it may close down conversation or force affective realities into nameable, anthropocentric emotions. As is demonstrated throughout the thesis, emotion, affect and animality are framed in different ways throughout the vet school and the struggles to talk about emotion and empathy, particularly in relation to animals, signifies one of these.

The *second set of interviews* (with three out of four of the original student interviewees) specifically covered the topic of Extra-Mural Studies (EMS), a form of work experience placement carried out between university semesters. It involves students working on farms or within veterinary practices in their free time and are usually organised by on a student-by-student basis.²⁴ Students travel all over the UK and beyond to carry out EMS for weeks at a time and so it was not possible for me to shadow anyone during their

²⁴ Please see Glossary for more information about EMS.

travels. These interviews therefore were an attempt to gain an insight into the experience of carrying out EMS.

Having learned that asking questions about how a student feels was not always the best way of accessing this information, I structured these interviews as a narrative. This involved me prompting participants to 'tell me a story about a particular EMS placement that was memorable'. The approach was well received, as students responded with their favourite tales and relationships experienced: unlike when talking about empathy in a perhaps more abstract way as in the first interviews, here, human-animal relations gained more of an affective resonance. Often students would spend time talking through the multiple ways in which they felt for animal patients or how they overcame ethical difficulty, stress and loneliness.

This narrative technique did depend in part on the students desire to weave a story and so required some amount of effort. Whilst I was interested in the banal details of how something was done, this was often overlooked as being unimportant or obvious by the student. Statements from participants like: 'I helped with the morning consultations' often needed more prompting. How did they move, what did they say, how did they feel? I would ask in response.

There are also some geographical limits to the EMS interviews. Whilst I was able to find and work with some wordy feeling on the themes of this research and find some useful stories, the locations within these interviews are not evoked enough to be considered sites which form part of the wider vet school educational landscape; to be clear, these interviews are not place-based oral histories. As a result, engagement with EMS as a stage within the BVMS degree is somewhat limited and it would be inaccurate to claim these interviews as wholly representative of the EMS experience.

Alongside these interviews, one interview was held with Natalie after our time spent in the Small Animal Hospital. Together we discussed the topics and cases that came up during participant observation, and I had intended the interview would provide some 'breathing space' for these thoughts and feelings to develop. I was wrong however to think that this interview would concretise what we got up to in the SAH. Compared to the 'data' gained during the time we spent talking-while-doing (recorded in notes and drawings in my fieldwork diary), the interview data is more one-dimensional, less rhythmic. Whilst it provides a transcribed 'record of events', it does not necessarily lend

the research insights beyond what was experienced and noted down during participant observation. This does not necessarily represent a failure in the interview but rather demonstrates the unavoidable formality of interviewing. During participant observation, Natalie and I spoke openly as co-workers as opposed to the interview situation where I was afforded greater control as the interviewer. Furthermore, there was something about talking-while-doing *in place* which better knitted together the discursive and the practical aspects of veterinary education.

I have found it a challenge to think through and work with the epistemological and ontological issues associated with the student interviews. What do these interviews *do* within this thesis? Far from explanatory devices, these interviews are openings for conversations about how we can form languages about the things that are often overlooked in veterinary medicine. The stutterings and struggles to express oneself hold meaning. They do not provide much clarity in relation to the research questions but they are nonetheless important, living texts which weave through the much denser and more productive participant observation.

Staff interviews

Interviews with vet school staff served a different purpose to the student interviews. They played out differently in practice and, as a result, are worked into the thesis in a slightly different manner. Three members of staff were asked to participate in an hour-long interview. Each were selected because of their relevance to particular themes in my research. Robert Kirk was chosen because he taught a BVMS I class about the historical and geographical development of animal husbandry and because he seemed to gel well with the student audience. Sean Ferguson was chosen because he was in charge of the University Farm, and the research and undergraduate teaching that went on there. Finally, Sam Earley was selected as she was the sole lecturer of veterinary ethics and animal welfare in the school.

The aim of these interviews was to gain more information about the structuring and methodology behind the curriculum, and to understand more about what these individuals felt was the role of more-than-human ethics and empathy in veterinary education. Each participant had a specific academic background; Robert was the only veterinary surgeon.

The location of these interviews greatly impacted their running and the power relations at play. All interviews were held in the staff member's personal university office which I was invited to for a short period of time in between their other commitments. As a result, I often felt like I was in an academic meeting where I had to prove my intellectual worth. These staff are scientists, clinicians and teachers who discuss their work in terms very different to my investigation – my perception was they did not have much time to be talking about woolly terms like empathy.

Perhaps it is unfair to say this, however. Part of the sense that they were disinterested was caused by my own anxieties about my research and assumptions about how they viewed me. On reflection, the staff were not dismissive of my research and gave me their time. The relations of power however were still weighted in their favour as a result of our differing positions in the academic hierarchy – I was a PhD student and so I was often 'told information' instead of us participating in in-depth conversation to create co-produced conclusions. Often their responses felt as if I were being given the vet school 'party line'. Sometimes I was given academic references which, although helpful, made the interviews seem like a PhD supervisory meeting. Another aspect of this dynamic is the point that – in interviews with Sam and Sean - qualitative research was positioned as being supplementary to the real, scientifically-informed veterinary science. What I was doing was doing was nice, even necessary, but it was not as important *as* veterinary science.

The exception in these interviews was Robert who, perhaps because of his experience (and perhaps his proximity to retirement) seemed open-minded, and willing to be critical of the vet school curriculum. He talked about student recruitment 'as a form of neo-colonialism' and spoke candidly about emotionality and empathy through his own veterinary career and in the current curriculum. He was interested in qualitative methods in veterinary science and invited me to speak about ethnography in animal research within a Level 4 Veterinary Biosciences class. I cannot be sure if I value his insights because of his openness to my interviews, because I was flattered he asked me to teach or because I simply liked him. These tensions within interviews can never be avoided but have been critically addressed both here in the methodology and in the empirical chapters of this thesis.

To bleed enough light to write by: a conclusion

Interpretation in a more-than-human methodology

By way of a conclusion, this section considers the processes of interpretation, writing and illustration making up the latter stages of my more-than-human methodology. Throughout this chapter, I have brought up the difficulties arising from creating a methodology which challenges anthropocentrism and questions how to bring to life the more-than-human, without erasing complexity. The foremost aim is to *work with* the uncertainties and ‘problems’ which arise in the research. Moving forward, from what I did ‘in the field’ to what I did with the ‘data’, it is important to say that there was no clear line separating the end of ‘data collection’ and the beginning of ‘data analysis’. Nor is there a clear spatial division between being in the field and adopting an analytical mindset whilst sitting at my desk.

The process of interpretation is an ongoing – all manner of physical data is laid out, read through, read through again, thematised, hacked apart, spliced together, drawn diagrammatically – a seemingly endless and baffling task.²⁵ Following McKian (2010) who asks, “What gives us the right and the ability to make these decisions?” (2010: 360), I myself wondered “At what point will I ‘know’ the answers to my research questions?” In being faced with a mass of tangible outcomes from fieldwork, it can be easy to feel that in there lies the key to it all. Only what is required is finding the ‘right quote’ and placing it in the ‘right place’, alongside some careful analytical writing. To do this is to overlook the embodied work that goes into interpretation and that writing in itself is a practice of interpretation and performance. As much as I collated, thematised and sub-thematised, I experimented with writing, instead of leaving writing until the period of analysis was finished.

I have struggled to find words to describe the place of writing in this thesis, which must always end up a textual thing. An abiding anxiety is that I was contradicting myself by relying on the verbal communication, and excluding non-human experience; or, perhaps worse still, anthropomorphising for my own ends. At times it felt like thin ice to be skating over. Within this section then, I will detail how - influenced by non-fiction creative writing about animals and place – I have developed a writing and illustration practice that

²⁵ Fieldwork diary, field notebooks, interview transcripts, lecture notes, class hand-outs, illustrations, field sketches and maps.

grapples with anthropomorphism, representation, emotion and affect. This is about writing *with* and *for* a more-than-human empathy.

A note on writing about animals and place beyond the academy

Creative writing about human-animal relationships and place is a central theme in both fictional and non-fictional writing which must be acknowledged as influential here.

Although storytelling is an ancient currency, I focus here on writers who broadly fit under the sub-genre of life writing and (new) nature writing. These writers – many working beyond the academy – inflect my writing practice in the way they evoke lives entwined with animals, emotion, place and medical practice.

Of particular importance is John Berger's *A Fortunate Man* (1967), a photo-essay depicting the life of a country doctor. It is part biography, part social geography of a distinct time and place. Berger writes about medicine in an unscientific manner and is instead concerned with how illness, subjectivity and place are created together through narrative.

The works of Kathleen Jamie, especially 'Findings' (2005), also colour the thesis. Whilst Jamie succeeds in writing evocatively about her relations to nonhuman others, her writing is anchored firmly in the everyday. Jamie's works are feminist in the way she counters the traditional masculinist ways of writing about and knowing nature: the 'wild' and the more-than-human (she does not use this term herself) are in our banal everyday practices as much as they are in distant landscapes.

It is from here – with these literary influences and more-than-human methodological structure developed throughout this chapter – that I am able to better explain my writing and illustration practice below.

Developing writing and illustration for more-than-human empathy

I have positioned this thesis as a form of 'creative non-fiction'. It does not claim to be representative of any one reality or claim to lay out research objectively to the audience. Based on a multi-species, multi-sited ethnography, the writing takes relational ontology as a given: "rather than being a source of weakness, the always already positioned and intersubjective nature of ethnography can be seen as a strength out of which more rigorous understandings can be built" (Cook and Crang, 2007: 12).

Where does the truth lie in the creative non-fiction approach? In discussing the use of fictional vignettes in cultural geography, Rabbiosi and Vanolo (2017) suggest that the division between fiction and non-fiction in research is not so clear, as seen when we choose pseudonyms for participants. It is a 'persuasive endeavour' (Butz, 2010) but it is not misleading. In this thesis, I aim to imagine new ethical worlds in veterinary education to draw attention to veterinary medicine as a sensuous science. I am not making this up – it is sensuous and embodied in its practice and I draw more attention to this by aiming to offer the feeling of tactility and 'there-ness' to the reader. It is evocation as opposed to explanation.

Much of my recounting of events and incidents is written in the first person. This may suggest the writing takes on an autoethnographic slant: in any case, the genres of autoethnographic writing, thick description and creative non-fiction blur (Narayan, 2012). Some aspects of this writing *do* share the specific aims of an autoethnography. First, my writing aims to be "deliberately fragmented and layered" in order to create an "evocative social science" (Ellis, and Bochner, 2000: 739). Second, I aim to challenge traditional cultural representations, specifically those of veterinary medicine. Literature in the profession often falls into one of two categories: reports on scientific, academic research or charming, bucolic tales of the country vet. To counter this, I look at these tonal extremes and experiment with them, writing somewhere in between academic objectivity and uncritical romanticism.

Embedding my self to such a degree in this thesis is not to say that I am the protagonist in the story, but is to acknowledge that I have always been shaping the research and am shaped in return. I contend that this is not introspection but rather is a form of writing *through* my experience. In this way, 'I' am both myself as a researcher and a performative mode of writing, almost a character in the thesis.

To do this is to recognise that writing, even for the academic purposes of gaining a PhD, is a performance. It is always crafted and honed, and I make careful decisions about how to include particular narratives and what position they should be written in. Sometimes this is in the first person, sometimes it is the second person, whether that is a human or animal. Particular attention is paid to writing about animal experience by not attributing

human emotion to animals.²⁶ Neither humans or animals exist as the singular subject however. They are always tied into wider webs of materiality. This networked writing practice suggests a way of understanding how we interpret and live through our lives spatially and affectively.

Writing this thesis as an ethnographically led exercise in creative non-fiction also allows me to address a concern arising in many accounts of emotional and affective geography. Whilst it is agreed that the emotional and the embodied play their roles in creating geographies, it remains the case that much research is done about nameable emotions rather than *with emotion*. Still there is a scholarly reticence about writing which grapples with affect and which aims to produce affect in the reader. I want to commit to keeping the affective qualities present in this thesis because these sensibilities did not occur in the field to laterally be written up as explanation – they vibrate throughout the research process, they: “bleed(s) enough light to write by” (Jamison, 2013: 188). Playing with voice, tone and atmosphere in writing is a way of holding this rhythm and asking the audience to take part.

This is all a means for writing *with* and *for* a more-than-human empathy because: “Empathy demands another porousness in response” (Jamison, 2013: 6). To write with empathy is akin to writing ethnographically – it involves an attentiveness to the hum of a situation through engagement of the senses. It searches for the permeable surfaces which relate human and nonhuman, and investigates how connections, collisions and resistances get made there. Leslie Jamison calls this ‘dwelling in the wound’, in the sense that we are all wounded through our corporeal vulnerability. This is not about stepping into the experience of others in order to see the world through their eyes. What partly characterises more-than-human empathy is the impossibility of knowing another and so it is as much about a recognition of distance as it is embodied connection. To write with more-than-human empathy then is also to convey a yearning, a nearly-but-not-quite mirage of how another feels. It will always fail, and so it retains something melancholic.

To *write for* a more-than-human empathy is to look at the other side – and hope for new ethical possibilities. I want this thesis to be porous enough that readers feel some kind of ethical and affective engagement with the subject matter and the thesis itself. For this to

²⁶ As discussed in the Literature Review, there is no clear distinction between ‘human’ and ‘animal’ emotion. What I refer to here is for example how animals likely do not ‘fear death’ and imagine an ‘afterlife’ as humans do, something which is relevant to writing about medical practice.

happen, the writing requires an offering of vulnerability, as a confessional of sorts. This element of exposure does not provide truth but is an enthusiasm for laying down feelings which might be judged 'too much' for academic writing. What happens when we do not put limits on writing about feeling?

Tied into this empathetic writing practice are the illustrations which occur throughout the empirical chapters. A critical engagement and experimentation with observational drawing is something that is often overlooked in human geography (despite the histories of field-sketching in the discipline.) Brice (2018) considers how observational drawing might be a means of keeping with the tension between non-representation and representation.

Using sketchy, terse figurative drawing, the aim of these illustrations is to provide a new way of looking at veterinary practice. The illustrations visualise clinical worlds from another angle and offer up an alternative aesthetic to traditional, precise anatomical drawings in veterinary medicine. Illustrating this research also brought me closer into the lives of animals in particular – in rendering their forms, I became fascinated with evoking animals' bodies and characters. The dextrous attention I paid to this felt like a practice of care and a "generative function of opening up a 'space to reconnect' with the nonhuman world" (Brice, 2018: 136).

Final remarks: on being tentative with methodology

This more-than-human methodology is called 'tentative' because this word is useful in two ways. First, tentativeness is seen in the way I waver between confidence in my research methods and cautiousness when I claim this methodology allows me to understand a different world and profession. Second, tentativeness appears as a central theme of the methodology itself – what I am trying to understand is how ethical tentativeness appears and is worked through in veterinary education and how to evoke this in the thesis.

The methodology has been formed to creatively investigate veterinary education as a sensuous science and finds the means with which to re-imagine the more-than-human ethics that emerge in multiple sites of the vet school. In doing so, this research is well placed to offer up new, empathetic narratives which sometimes challenge and sometimes work with dominant, science-based understandings of veterinary medicine. As well as

exploring the veterinary profession, this chapter forwards methodological debates in cultural geography through creative ethical interventions and experiments with creative non-fiction.

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4. We begin in the lecture theatre

Introduction

I doubt that anyone comes to vet school for the lectures. Lectures can often feel like boring obligations. Lectures tell you what to do and trap you inside with a blue screen haze for company. If it wasn't for the electronic student card scanner and a chance to see your all friends in one place at the same time, would anyone even attend? Lecture theatres are forgotten spaces because no-one likes boredom and obligation. They are at once intellectual and grand, and corporate and banal.

This chapter takes the lecture theatre as the empirical starting point of the thesis. The idea of the 'lecture theatre' encompasses and symbolises a number of things beyond its four blank walls. The lecture theatre is the place where students begin the formal aspects of their veterinary education and so this chapter is both site-based and temporally situated in the curriculum. I discuss the lecture theatre as a space where the culture of veterinary medicine begins: where science, certainty and animal ethics are seemingly made stable and understandable. Through investigating the meanings of 'science' and 'empathy' in veterinary education, it becomes clearer throughout the chapter that pulling apart these notions is impossible. Facts, like emotions, are not constant. Whilst the focus of this chapter is to show attempts to structure veterinary medicine with a scientific basis and to standardise animal ethics, it is important to note that even the theory cannot be replicated identically in each new situation. Each lecture is an individual thing, even if it is in the same place. So I want to balance the conventions of lecturing that I have noted over time, the patterns and replicable aspects with the unique situated atmosphere of each lecture that I have drawn upon. This is why this chapter (and the entire thesis) cannot be solely a site-based study.

This chapter begins with an introduction to the emotional and affective geographies of the lecture theatre and how these lead to the first appearance of the discursive animal in the curriculum. I lead the reader into new affective atmospheres as a means of introducing the spatial and ontological tensions at the heart of the lecture theatre. Focusing on one part of this tension – the way in which the curriculum ontologically *orders* veterinary education - I discuss how lecture material works to create fixed, scalar notions of animal bodies and defines a boundary between the 'real', messy world beyond the lecture theatre, and the ordered controls of scientific certainty inside. Through the case study of

Redroofs Riding School we first start to see how veterinary education is structured to be objective, and free from morals and cultural positionality.

Lectures do not just cover the technicalities of disease and anatomy alone. I continue by sitting-in on a euthanasia lecture, where I had assumed the affective resonance I was investigating in veterinary education would surface immediately and obviously. It was, however, more revealing for the way euthanasia is taught as a practical process that can be made easier through rational analysis, rather than emotional engagement. I discuss how the pragmatics of euthanasia can be thought of as an ambiguous form of care in itself, complicating the relations between science and emotion, and human and animal.

Following on from these themes of emotional control in moments of stress, I consider the teaching of veterinary professionalism in lectures and how this continues to define the emotional geographies of veterinary education. Professionalism, taught in relation to the RCVS Code of Professional Conduct, is shown as a set of formal protocols that control emotional interaction between human and animal actors. The theme of veterinary professionalism as an emotional contract starts here and continues throughout the thesis. Following this, I detail how values connected to veterinary professionalism filter into teaching in animal welfare and ethics. Whilst animal welfare and animal ethics are stated as being 'value-free', I explain how value is attributed to scientifically informed objectivity, rationality and perspectivalism. All of this knowledge – veterinary professionalism and the apolitical teaching of animal welfare and ethics – works towards situating animals as knowable objects and not actors in their own care.

Finally, I explore how there are other ways of knowing animals in the lecture theatre and how alternative ethical approaches are made possible. By investigating the atmospheres and content of a lecture on the 'human-animal bond', I show how the lecture theatre is unable to contain the excesses of affective resonance and how this leads to a moment of more-than-human empathy. The lines between care and harm, and human and animal are brought into more obvious critical relation. The chapter concludes by offering a review of the tensions between emotional control and ethical possibility in veterinary education.

Emotion, affect and atmosphere in the lecture theatre

Introduction to Animal Husbandry, 9-10am

Once the lights go down, I almost forget I am a researcher and I switch back into my listening-to-lecture mode. I have the intention of being attentive for the full hour, but being lulled by the monotony of speaking and the authority of the lecturer mean I feel a familiar wave of tiredness that can come from watching a lecture. Not engaging, just looking-on in the right direction. It's not that the lecture is uninteresting but rather that I feel I am going back in time, to my own undergraduate lectures. Many students (maybe as many as half of them) have laptops and tablets and I can see they had downloaded the slides and are adding notes as they go. I wonder if they had read the lecture beforehand? This seems very studious to me.

The lecture is called 'Introduction to Animal Husbandry' and is held by Robert Kirk. He opens the lecture with the Intended Learning Outcomes (ILOs) related to the lecture and states that 'some took these more literally than others'. Is he referring to the students or those who set the assessments? Either way, it suggests a sense of flexibility and perhaps a move away from learning by rote. The first slide shows stock images of a range of animals – sheep, giraffes, cattle, antelope – and Robert asks which are 'wildlife' and which are 'livestock'. He points out the animals one by one and a few of the students shout out what category they thought they fell into. They are not shy in voicing opinion and there is no sense of there being that 'one person who always puts their hand up'. Everyone was chipping in. Should I even put my hand up? I imagine this is what a first meeting at Alcoholics Anonymous might be like. We are garnered by the testimonies of others who are passionate about the same thing as us, but then maybe my first-lecture nerves were getting the better of me and I'm being over the top.

That's all very well, Robert says, but these categories are not always so clear. He shows a slide of a definition of production animals and states it is all to do with the anthropocentric notion of ownership. I was not expecting questions of anthropocentrism to come up so early and I feel I have perhaps been prejudiced in my imaginings of the degree. Robert makes it clear that the use of animals is culturally and socially bound and is a matter of philosophical position. A finger taps the right arrow and the slide moves onto the example of cats. No one puts up their hands when Robert asks whether they cats are used as assets as opposed to pets. Accompanying this question is a stock image of a fluffy

and apprehensive-looking cat. I imagine Robert typing 'cute nervous cat' into Google. Robert comments on the photo and we all dryly chuckle at the idea of a cat contemplating its ontological status in the world. This shared laugh unites us again in the acknowledgement that existential wonder is a solely human endeavour.

Cats are used as production animals in some places in the world though, Robert observes, as a means to introduce the idea of cultural relativism. Robert states he is not trying to demonstrate any particular moral position and that he does not judge anyone for their moral stances on animals. Robert then shows two differing photos – one of carcasses hanging in an abattoir next to a man kitted out in the relevant Personal Protective Equipment. The next shows a dead dog in a pool of blood, presumably having been killed by the men who surround it. I see some students wince in disgust – it is an affect that happens in an instant, screen-eye-body-brain-face. Robert asks us what we think about these images. Again, some students are confident enough to state to the crowd that they have no problem with the killing of cattle in those circumstances but think the dead dog is unacceptable. What Robert wants us to question is why we feel like this and how we differentiate between animals. The images of the cat, the cow and the dog are used to elicit feelings: to create atmospheres of wonder and disgust, to make visible our moral standings with animals, to demonstrate our cultural similarities and differences. These images get us to almost unwittingly tell the lecture theatre something about ourselves as morally aware humans, but actually say very little about the animals that are represented in the image. It is important at this stage – one of the first lectures of first year – to see where we each stand, especially given the social diversity of the audience. Students are from the UK, USA, Singapore, Hong Kong, Botswana, Ireland and range in age from 18 to 30. Everyone is still getting the measure of one another.

I did not expect the position of animals to be up for debate so early. Robert carries on and quotes Temple Grandin on how animals and humans are part of a social contract involving good life, good death and the issue of exploitation. Whilst the social and cultural construction of animals is suggested, there is only one direction in which the power seems to be moving – it is the human ability to set the terms of this contract. Whilst Robert questions the categories of different nonhuman animals, the categories of human and animal remain untroubled and separate. He states that he does not believe there to be any type of animal that is held sacred from exploitation by all cultures. I think about this for a while. He is probably right but humans are a part of this grouping too.

There is then no essential quality of an animal marking it out for special care across all cultures and so animals are seemingly made equal in their potential subjugation. On one slide there is a phrase: “Animal rights vs. animal welfare (Rollin, 2002)” but this is not discussed. A lot of big moral questions have been asked of the class but they are unable to really speak out in a group of this size. This is the nature of the lecture theatre and why considering the affective atmospheres of the learning space becomes relevant. Students may speak up and boost self-confidence as a result, but there is not the time or space for deeper, reflective discussion. Views and opinions are seemingly kept to oneself in your individual chair, a unit of information absorption. However, feelings are formed and waver between the vibrant matter of the room, creating unsaid ethical tensions which lie at the heart of the profession.

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“And there are always pockets of things left hanging in the air” (Stewart, 2011: 452).

In order to gain a deeper analysis of the banal atmospheres and emotional and affective geographies of the lecture theatre, it is necessary to take seriously the affective resonances and ‘vital materialities’ that constitute the space (Bennett, 2010). The blandness of the lecture theatre and the didactic teaching style that this room almost enforces means it could be all too easy to focus on the content of the lectures. Whilst an understanding of the epistemologies of veterinary knowledge is essential and does occur throughout this thesis, here the focus is on its ontological formulation, thus changing the lecture theatre from blank container of information to a space formed through:

“The kinds of agency that might or might not add up to something with some kind of intensity or duration. The enigmas and oblique events and background noises that might be barely sensed and yet are compelling” (Stewart, 2011: 445).

Using Stewart’s provocations about affect as my starting point, it is important to engage further with the wider body of non- (or more-than) representational geographies, before thinking through what an affective atmosphere is, and how the notion helps to better understand what is going on in the veterinary lecture theatre. ‘Hybrid geographies’ (Whatmore, 2002) and the now vast scholarship on relational ontology in geography (Harrison, 2001; Lorimer, 2005) has led to a continued focus on materiality, bodies and the affects and emotions that move between them, such that they “induce and are

induced, affect and are affected” (Despret, 2004: 115). As a result of this scholarly focus on intricately networked relations, it is possible to try to make sense of a site - such as the lecture theatre - through closer attunement with its overlooked materialities and affects.

One way of apprehending affect is through the notion of atmosphere. Anderson (2009) is central in debates around atmosphere in more-than-representational geographies. For Anderson, the usefulness of the term as a geographical analytic comes through its multiple interpretations, for example as a ‘referent object’ and as a means of thinking through affect at a collective scale:

“They (atmospheres) are always being taken up and reworked in lived experience – becoming part of feelings and emotions that may themselves become elements within other atmospheres” (Anderson, 2009: 79).

Shaw (2016) on the other hand discusses how atmospheres speak to the idea of the ‘volume’ of a space and thus imbues the term with a sense of enclosure. Seeing atmosphere from this perspective lends a crucial geopolitical bent to the term, so that we might understand how power and atmosphere work together.

It may seem at times that atmosphere as a geographical term is unhelpfully woolly and contradictory. Both Anderson’s (2009) emphasis on collectivity and Shaw’s (2016) sense of enclosure however work to dispel this and provide an essential means to analyse what is going on in the lecture theatre: whilst there is the apparent free movement of ideas and a mood of ethical possibility mobilised in the lecture theatre, there is also a very tangible sense that this atmosphere is working to enclose and absorb those within its darkness, and separate them from a world outside.

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The next two lectures attended were on cell structure and function, and cell growth and cell death. A white background with bullet-pointed black Calibri point 12 font sapped my energy. These lectures were more about biology and biochemistry and further out of my comfort zone. Some of the terms mentioned brought me back to the horrors of badly taught high school biology. Remember endoplasmic reticulum? I always loved saying that word. I tried to concentrate, but was out of my depth even at this stage. Detachment from content allowed me to focus more on what was going on in the lecture theatre.

The lecture was dry and dense but it couldn't have been any other way. Slides were clicked on at an alarming speed by Louise the lecturer who was professionally dressed. She stood behind the lectern and *lectured*. Robert by contrast paced the floor like he had nothing to prove. This alerted me question the influence of gendered performances of veterinary teaching. I watched students scribble frantically to get all the information down. This was different to the previous lecture where students were happier to sit back, listen and imagine. Here, in the same room, the atmosphere had turned tense with the urgent note-taking – what if you missed something that might be in an exam? There was less leeway with this lecture as things were either right or wrong. Whether it was or not, the urgency to proceedings gave a sense that this content was the crux of the matter.

The lecture moved through the various scales of the cell, getting smaller and smaller and closer to the precise make up of the undifferentiated cell. I watched some students copy diagrams from the powerpoint and label them. What these students are dealing with is so tiny and inconceivable and I wonder how they visualise this as part of the body system. Do they think of animals here? I for one had completely forgotten about their existence.

Fixing animal bodies in an anthropocentric world

The structure of the BVMS Foundation Phase

If students are moving through scales of the animal, from societal to cellular, when the tangible, living quality of others who happen to be non-human becomes abstracted, then how is 'the animal' configured in lectures? A key factor which helps define the meaning of 'the animal' in the earliest phase of veterinary lectures is the structure of the curriculum in the Foundation Phase of the course: BVMS 1 and 2 (or 1st and 2nd year). It is here that themes of scientific certainty, animal ethics and emotionality collide. Whilst I would contend that that lines between human and animal are less than clear, lectures in the Foundation Phase work on stabilising notions of animality in a distinctly anthropocentric 'real' world while establishing the settled orthodoxy of the scientific method.

Moodle and Mahara, the online support systems or Virtual Learning Environments (VLE) for the veterinary degree, provide resources covering the course structure of all years on the programme. Here, the focus will be on the Foundation Phase of the degree (BVMS 1 and 2):

“There are six modules in the BVMS1 course and six modules in the BVMS2 course. Each module is between 3 and 5 weeks long, is based around a real life scenario and comprises 2 to 4 weeks of teaching followed by a ‘Consolidation week’ for review of module material and performance of a Continuous Assessment Task (CAT)”.

BVMS 1 Programme Information, Mahara, 12/06/17.

Throughout this stage, the course aims to introduce students to the various ‘body systems’ of the animal: digestion, reproduction, urinary, skin and bones, neurology, respiratory, cardiovascular. Following this, a module named ‘integrated body systems’, where the segmented parts come together to create a full organism. These animal bodies do not just float in a neutral scientific space, but are placed in their anthropocentric societal context as the Foundation Phase Programme Information explains:

“The teaching in each module is centred around a real life case scenario and a series of questions divided into ‘Key Issues’ and ‘Background Issues’. These scenario-related questions are intended to encourage you to think about the material being taught in the module and enable you to relate it to a real life situation. The Key Issues are associated with the current module, whereas the Background Issues are designed to encourage you to refer back to the content of previous modules either in the same year or in the case of BVMS2, the previous one. You will be expected to use your existing knowledge and understanding of these issues to create your own Mahara resource to support your learning through the Foundation Phase and the rest of the Programme”.

BVMS 1 Programme Information, Mahara, 12/06/17.

The structuring of veterinary curricula is frequently up for debate however. Earlier systems of veterinary education had been criticized for being too didactic meaning vets highly knowledgeable in veterinary science felt cast adrift upon entering the ‘real’ world of opinionated farmers or indecisive pet owners. Robert, a professor in the vet school in the latter stage of his career offered his opinion on the current curriculum and on his own veterinary education in New Zealand:

RK: ... so the need, the need to remember large number of facts is in my view declined fairly substantially, but what has increased is the need to be able to assimilate and process the information from a variety of sources so my, my view and I think we have, in the new curriculum, one of the things that is good is that they have tried to reduce the amount of factual content but I think they have to do that at the expense of some of the critical, logical thought train...

MD: Okay, so how does it compare – I know it’s probably very different – but how does it compare to your own vet medicine education?

RK: Well, I mean it was very traditional, very much the same as the curriculums that were being taught over here [the UK] over the last fifteen years or so, so to be honest, not that different to that. We, we were perhaps a little bit more fact-based in our training and em, uh, there is a slight difference in that we were expected to fail, a proportion of us was expected to fail.

RK interview, p.3

In the move towards a more contextual curriculum, the objective facts of medical science are made to fit in with 'real' life circumstance. In doing so, an epistemic juxtaposition is exposed, between the 'real' world and detached space of the lecture theatre, where reality is seemingly suspended and the myth of certainty and crystal-clear diagnostics can (almost) be upheld.

Are animal body parts fitted together to create an integrated biological system that is either 'normal' or 'abnormal'? Are these bodies the thing that brings the 'real' world to the lecture theatre? I contend they are both – the lectures rationalise the animal whilst the animal brings to the lecture theatre a reminder of the chaos of 'reality'. The lecture theatre is therefore at once an enclave of anthropocentrism and a site of occasional more-than-human transgression.

Welcome to Redroofs Riding School and Livery Yard

“We came into the laboratory in order to settle our doubts about the paper, but we have been led into a labyrinth” (Latour, 1987: 67).

In order to keep the real world in motion whilst learning the objective science of veterinary medicine, a fictional story is concocted for each module and elaborated upon each week. There is an animal (or 'case') at the centre of the story. This time it is about a horse called Bruno:

It is winter and you have arrived at Redroofs Riding School and Livery Yard to do equine EMS. The owner, Sarah Jones, meets you and shows you round. After your tour, Sarah introduces you to the 'horse dentist' (equine dental technician) who happens to be visiting that day and is busy checking the teeth of some of the horses. The equine dental technician is currently looking at the teeth of a horse called 'Bruno' who has recently arrived in the livery yard.

BVMS 1, Module 3, scenario description for Week 1

This is the beginning of the story and it leads into numerous lectures on dental issues and equine management, so that a lecture based on physiology might be followed by one on how to work with 'horse people'. Names are used so that we might better create a 'real' life scene in our heads. This wide-screen view of the scenario encourages students to stand back objectively and look at the distinctive interconnections that Bruno's case brings about. His 'normal' body is the site from which we begin to understand what a healthy horse looks like.

The following week, Bruno's plot thickens:



Figure 3 - Bruno's teeth

This photo demonstrates the appearance of Bruno's teeth. Once the dental technician has finished, Sarah asks you to lead Bruno back to his stable and change his rug. As you do so, you notice that you can see Bruno's ribs and comment to Sarah that you think he looks quite thin. She agrees that she is concerned about Bruno's condition, especially given his age and says that she is hoping that now his teeth have been sorted out, he may start to put on weight. She has also spoken to his owner about changing his diet.

BVMS 1, Module 3, scenario description for Week 2

At this stage, visual indicators - his teeth and body condition – demonstrate that something is not right and that we are moving away from the normal horse body into the

realm of dis-ease. This results in some worry and multiple stakeholders at Redroofs begin to take action.

In the final week of the module, Bruno is displaying some worrying behaviour that allows us to provide him with a diagnosis:

“The next morning you are helping with the feeding but when you go to Bruno's stable you find him pacing around. The gelding is sweating and looking round towards his flanks. He then lies down in the shavings and starts to roll. You call to Sarah who comes running over. She says that it looks like he has colic and calls the vet to come out and see him”.

BVMS 1, Module 3, scenario description for Week 3

Abnormal signs begin to connect up – the pacing, the sweating, the thinness, the rolling. The dentistry connects with the digestive system. *It's colic*²⁷. This is enough to cause alarm, running and frantic phoning of the vet. The vet and to an extent you as the vet student, must try to restore some order to this messy animal body which has helped create an atmosphere of multi-species chaos.

To summarise this scenario, the vet school provides a ‘roadmap’ – seen in Figure 6 on the following page - which draws together the multiple issues connected by Bruno's colic.

²⁷ Colic is a broad term which describes digestive discomfort and abdominal pain. It can range from mild to severe, some of which can be treated and some which results in the animal having to be euthanized (University of Liverpool, 2017).

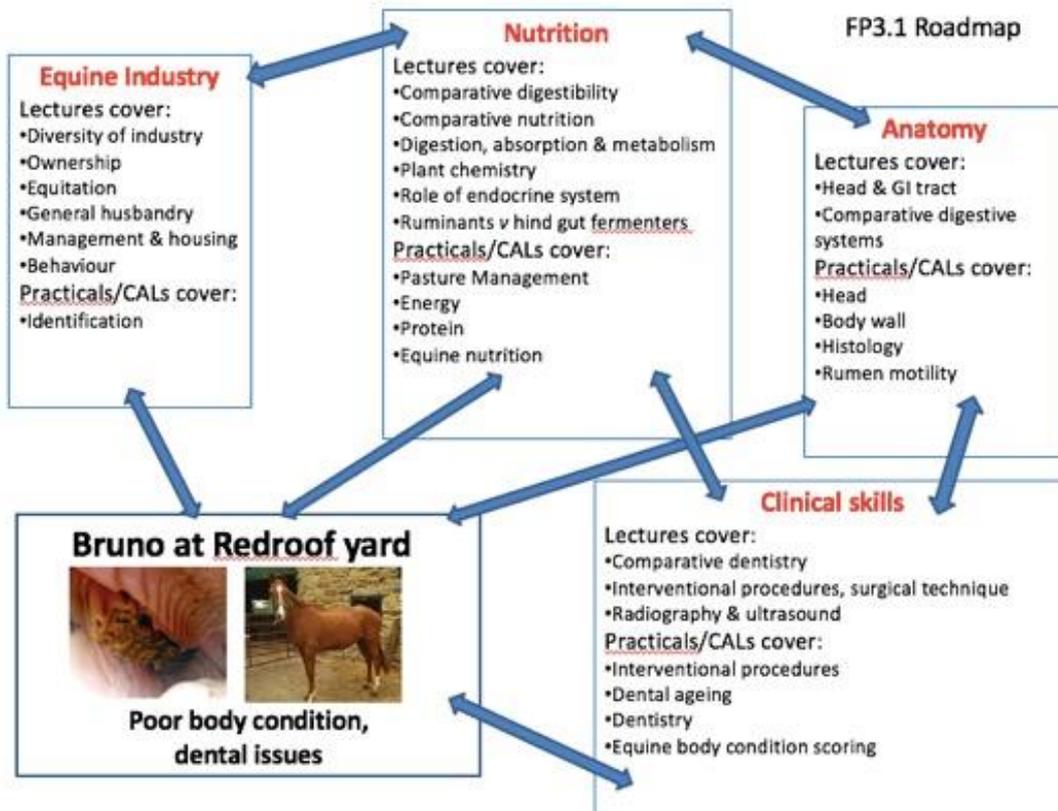


Figure 4 - Redroofs Road Map

Despite the arrows that move in multiple directions and the many bullet points, this roadmap organises Bruno’s condition across multiple scales, from molecular biochemistry to matters of equine management. Colic is a common condition in equine veterinary medicine and so students must be able to recognize and understand its anatomy, causes, symptoms and practices of diagnosis. Additionally, they must also work through the strained social interactions that come of working with horse owners. This story is thus deliberately made straightforward, a simple narrative through equine disease. It is a ‘perfect’ and satisfying case of colic. The normal animal is the baseline from which lectures work – a state of safe, biological equilibrium. Disease is indicated when this stability is disrupted and the body becomes abnormal, a set of defined symptoms.

What if it is a condition worse than colic though? I read out the above scenario descriptions to my dad and ask him to diagnose Bruno. “It could be grass sickness”, he says. Grass sickness is a relatively mysterious equine disease involving paralysis of the gut, but its causes are still undefined. Horses often die within days after severe colic or have to be euthanized. The story of Bruno is a piece of fiction written by vets who want to

define normal/abnormal and separate one disease from another. It could have just as easily been grass sickness.

“Just at the time when we feel comforted in our belief and start to be fully convinced by our own eyes watching the image, we suddenly feel uneasy because of the fragility of the whole set up” (Latour, 1987: 66).

A practical guide to euthanasia

The problem with searching for emotion

Veterinary medicine education has a very strong scientific base that seeps into all aspects of education and the profession. I initially went out to find its emotional foundations to enrich what I thought was a distanced scientism and to investigate different ethical realities. My approach involved me searching the curriculum for lectures I thought would be ‘more emotional’ in content and delivery. It was a flawed yet revealing technique: I found there is emotion everywhere in veterinary education, and it is not necessarily more affective in situations such as death and killing. More often, emotion comes to the fore in veterinary education when it is a matter of controlling emotional and affective geographies. This is why it is so important to look at veterinary medicine as a set of comings and goings between science and emotion, and as tensions between theoretical standards and living practice. It is all too easy to separate science and emotion into separate columns, and turn one against the other. Emotionality and rationality have more complex relations, which we will see when we learn about euthanasia.

Euthanasia lecture 9-10am

I introduce myself to the lecturer named Sandra, an oncology specialist, who is teaching on the topic of euthanasia today. I had chosen to attend this lecture not because it begins at 8.30am, but because I suspect it will be related to ethics, compassion, empathy and other emotional content. I am keen to find out more. As I walk to the lecture theatre I get lost and ask a passing student for directions. On the way, we pass over a walkway into the courtyard and I sense animals nearby. Damp hair and chemicals, which sums up most veterinary smells. It was in a way comforting.

Sandra opens up the lecture by saying that euthanasia is Greek for ‘good death’. There is no discussion as to whether this is an ethically correct as a thing in itself, as it is clearly with human euthanasia. It is irreversible, Sandra says, which makes me laugh a bit because

after all, it is an act of killing and vets do not yet have the power to bring animals back to life. The lecture is characterized by many bullet pointed lists of what you must do, what you must not do (“NEVER PUT THE BODY IN THE BAG IN FRONT OF THE CLIENT”) and other subtler suggestions such as try ‘to appear empathetic’ and ‘put yourself in the owners’ shoes’.

There are various ways to perform euthanasia but it is most commonly done through an overdose of barbiturates with names like ‘Lethabarb’ and ‘Euthasol’. The best way to administer the dose is by using a catheter that can be put in place away from the owner – thereby decreasing the likelihood that the animal will struggle or make any noises from the shock. There are physical methods mentioned, such as the captive bolt, but this is brief and not for use on pets. Euthanasia, so far, is presented as a practical issue to overcome without the ethical dimension I was expecting. It is very clear that the lecture is here to prepare students for the physical reality of having to kill an animal and thus these are the facts of euthanasia. Terminal illness and behaviour are mentioned as reasons to euthanize but, due to improvements in behavioural research, it is less acceptable to euthanize animals for aggressive behaviour. There is surely nothing so certain as death but even here some ambiguity leaks in, there is an uncertain space between unlawful killing and putting to sleep.

We move on, to more sensitive matters in euthanasia, namely, issues of animal ownership and responsibility. What is most important to remember here is that the animal is the client’s property – if the client wishes their animal euthanized, then as a vet, you really should do it, lest the owner tries killing the animal themselves. I find this information hard to wrap my head around and wonder if the desire of the owner is enough to make the decision for killing. Surely this is a decision made with multiple responsibilities? If a request for euthanasia makes you feel uncomfortable, then a conversation ought to be had with the owner. Sandra refers to the RCVS guidelines providing guidance about ownership, responsibility and euthanasia.

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When a vet graduates and wishes to practice veterinary medicine in the UK, they are required to register with the Royal College of Veterinary Surgeons (RCVS), the statutory regulator governing the profession. Its role is defining the responsibilities of veterinary surgeons in line with the Veterinary Surgeons Act of 1966, ensuring high standards of

education, and regulating professional conduct of vets and veterinary nurses (RCVS, 2016). The RCVS has powers to formally discipline vets and vet nurses on this basis, such that individuals can be 'struck off' the RCVS register and unable to practise. With these aspects combined, the RCVS aims to improve animal welfare and the contribution of vets to society. The RCVS provides the Code of Professional Conduct as the document that must be adhered to when practicing veterinary medicine and which should be referred to in situations when a vet faces any ethical uncertainty.

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I wonder if this portrayal of euthanasia decision-making as a set of protocols provides students with greater security of knowledge, that the profession is protecting everyone (vets, clients, animals) from harm, or whether they sense even at this stage that it cannot be so straightforward.

We move deeper into uncertain terrain. Sandra tells us that euthanasia is a case where the vet might have to hold hands or hug a client to reassure them about their euthanasia decision-making, whilst never convincing them to put their animal to sleep as it can cause problems with the process of grieving. This physical contact is instead a matter of letting the client know you understand their position and that it is reasonable to struggle with it. The vet is being asked to have the capacity to be emotionally open and to provide a pressure release for another person's sorrow. The hand that injected the drugs that ended your pet's life now holds your hand and tells you the suffering is over, I thought, feeling disquieted by what I'd heard.

It is seemingly an obvious moment of emotion in the scientific accounting of euthanasia and veterinary lectures thus far. I do not feel much though and I look around and the other students are not particularly engaged, or especially animated. One could flick through Facebook as easily as listen to this lecture. This is the first point that I sense the difference between lecturing about a topic which is considered emotional and the generation of embodied emotional geographies in the lecture theatre as seen previously. A drawback of an emotion-centred geography is that one focuses on overt and nameable emotions – it is easy to find intensity and meaning in death, grief and suffering. This is also the first time I recognise that emotional topics in veterinary education are talked about in a strangely ambivalent and distanced fashion. The words can be said, but it remains unclear how they are felt. Perhaps this is cynicism on my part, but I am wary of attributing

meaning to emotion in the vet school just because it is mentioned. Sandra seems to lecture from a faraway point at the front of the room and we are merely the audience.

She goes through another bullet point list detailing a 'sensitive approach' to euthanasia but states that this is no formula for ensuring a good death – sensitivity must be situated spatially and temporally. This is a lecture theatre and there are many limits on the structure and content of the teaching. It must be linear, clear and define what students are expected to know. On top of the spatial constraints of the lecture theatre, there is not enough time available to go into the sensitivities of euthanasia. This is what students expect of their lectures and veterinary education, especially in the early years as Sam, a member of the veterinary ethics teaching staff, told me:

SE: ... they like structure and they like lists and they like, sort of, em, processes that are sort of transparent, whereas ethics strikes them as being very nebulous and very hard to get your head around – I'm sure this strikes you too.

MD: (laughs) Yeah!

SE interview, p. 8

The linear logic nature of veterinary lectures is essential, as much of the information must be memorised for the sake of ensuring future performance under examination that is satisfactory. This is understandable – the basics of science simply have to be committed to memory or a vet could later run the risk of a highly problematic case of medical negligence. Knowing facts about veterinary medicine is a matter of life and death. Who knows what might happen when you question the certainty of the division between life and death?

We are brought back to the practical matters of euthanasia. Sandra notes that above all, you must approach euthanasia *logically*. It must be an ordered death, a systematic death with ritualised gestures of compassion. Logic ensures control and I ask myself to what extent these protocols are about emotional control and ordering, a means for the vet to steady themselves for taking a life.

Place and spatial strategies are very important when it comes to euthanasia. Clients might prefer to have a home visit so that the procedure can be carried out in the dog's favourite bed at home, and so then the vet must be sure to carefully place the dog in the

boot of their car after death. This reverential treatment is taken over again by the reality of the body as a tangible, heavy corpse that will soon begin the process of decomposition. There are crucial, differing geographies to euthanasia-as-a-clinical-procedure and euthanasia-as-viewed-performance. Whilst every effort seems to be made to make euthanasia as 'un-clinical' as possible when carried out in front of the client, behind the scenes it is all a categorisation of bodies, plastic bags, freezers and mass cremation. Nobody wishes to imagine their dearest in an incinerator with other unnamed pets, even if they choose this option as opposed to an individual (and more expensive) cremation. I do not mean in any way that the latter is insensitive and uncaring, but rather that a different form of care is enacted – something I expand upon in Chapter Five which deals with the hands-on practices of a veterinary education.

Sandra repeats the key injunction: NEVER PUT THE BODY IN THE BAG IN FRONT OF THE CLIENT. It is important to note that "gallows humour" does not enter this lecture at any point. Wry jokes about mordant subjects are not part of the formal procedure and respect that the vet school shows; finding humour, outwardly at least, in Sandra's insistence about bodies placed in bags is disrespectful to the animal and the client. Lectures thus provide the official narrative of the vet school, and arguably students' fuller understanding of the veterinary profession. As someone brought up in a veterinary setting full of manly bravado, jokes around death were the norm for me. And so I felt guilty about falling into old habits so easily. It is important to consider these mundane practices around death and their emotional geographies because:

"Despite allied interests in health, medicine, ageing and the life course, geographers have also been slower or perhaps too reticent to engage with the actual embodied and visceral experiences of dying, death and surviving and associated boundaries, ruptures, ripples and vulnerabilities these create" (Stevenson, Kenten and Maddrell, 2016: 158).

We are told by Sandra that the client might want to come back to see their pet before cremation or burial. Make sure then, to chill the pet in a natural position and allow it to defrost slightly before display for the client. I struggle with the changes in tone in this lecture, from thoughtful to straightforward to seemingly macabre. If animal euthanasia is to be considered beyond the notion of whether it is right or wrong and into the relations between its medical science and emotional and affective intensity, then it is crucial that this morbid sensibility is not be conflated with cold-heartedness. This is why gallows humour is not always disrespectful as it dares to present death in another light. It can be

contended that defrosting a dog so that it appears its usual, peaceful self, and not rigid from *rigor mortis* is care, just not as we like to see it.

The animal might react as you end its life we are told, and sometimes this depends on the type of method used. Tiny gas chambers can be used for 'small furries' (hamsters, chinchillas etc), but this procedure should be undertaken away from the client as these pets often panic, struggle and hold their breath, so taking longer to die. Does the guinea pig's resistance to death demonstrate its will or is it just a physiological reaction? Do the students ever wonder if the animal knows it's going to die?

Depending on the circumstance, the vet should then call to check up on the client in the later stages after the death of their pet, particularly if the client was distraught at the time of euthanasia. Always send a sympathy card to the client within 10 days.

Addendum: Remember that everyone within a caring profession can suffer from 'compassion fatigue' but vets are particularly prone because of the frequency of euthanasia – it is a job and one can lose wind. If you want to cry, then cry and if it is really bad then get professional help (see links at end of PowerPoint).

We finish with an enigmatic statement that lingers long in my thoughts:

“EUTHANASIA IS THE MOST IMPORTANT SERVICE WE PROVIDE”

Teaching veterinary professionalism in the lecture theatre

What is veterinary professionalism?

Professionalism has been touched upon thus far in subtle ways. Various: how one should relate to a client during euthanasia; how one should convey and communicate in the correct emotional register; and how one should understand the formal responsibilities of becoming a veterinary surgeon. What defines veterinary professionalism is currently at the heart of debate in veterinary management, with much of the focus falling on how to retain respect for vets in society and how to improve vet-client relations (Vet Futures, 2018).

3.13 Being Professional



Figure 5 - Excerpt from 'Becoming a Professional' Moodle page

Whilst professionalism may seem unimportant to the central medical aspects of veterinary medicine, I argue that this term and the way it is utilised in lectures and seminars, reveals a number of integral ethical and political insights into veterinary education. The geographies of the lecture theatre and seminar room help form a prevailing understanding of veterinary professionalism which goes on to be worked out in the field, as Chapters Six and Seven will demonstrate. Veterinary professionalism comes up time and again, in the most surprising of sites, but it begins within the formality of these pedagogic spaces.

'Becoming a professional' seminar, 3-5pm

The room this class is taught in is full of rough, commercial carpets, grey-navy in colour. The tables are set out in an L-shape to better facilitate 'break-out' discussion. The room is named after a well-known brand of pet food. Everything is mute and uniform. Computers line the perimeter and light chinking through venetian blinds reminds us there is an outside, thankfully. The fluorescent strip lighting feels like it is slowing me down. It feels like an entirely appropriate space to learn about measures of professionalism.

Everyone clusters in groups to the back of the room and I sit at the side, very much in observational mode. Paul the lecturer arrives looking a little flustered and I get the feeling no-one is especially excited about the class. The Intended Learning Outcomes (ILO's) flash on the screen and Paul explains that professionalism used to be part of the 'hidden curriculum' but now is a central part of the degree due to increasing demands for

accountability from clients. Vets get sued a lot nowadays, especially those operating in the USA.

Students are asked to come to the front of the class and write what they believe to constitute veterinary professionalism. Ethics, appropriate language, empathy, being presentable and honesty are scribbled onto the whiteboard, with some reluctance. These are all good, Paul says encouragingly, noting that these concepts are enshrined in the ethical codes protecting veterinary medicine. He tells the students to form smaller groups and do some research on the RCVS and AVMA (American Veterinary Medical Association). Both the RCVS and AVMA help define professionalism and are protected by law. Professionalism is about what you can and cannot do.

*

There is a notable difference between the different national ethical codes and laws in veterinary medicine, as Magalhães-Sant'Ana *et al* (2015) explain. The AVMA code of conduct has historically been seen as a more anthropocentric guide focusing on the regulation of advertising. In Europe, veterinary surgeons were the first professionals to be united by a common code of ethical conduct under the Federation of Veterinarians of Europe (2009) (FVE). This code of conduct, named the 'European Veterinary Code of Conduct' (EVCC) was to be used as a basis from which nation-states might voluntarily base their own ethical standards. The thematic analysis of the EVCC and five other member states (Ireland, Denmark, Portugal and the United Kingdom) by Magalhães-Sant'Ana *et al* (2015) remains the only thorough comparison between veterinary ethical codes.

*

In the seminar, we turn our attentions to the matter of right and wrong – these guides cannot always give you an outright answer and so a vet must be prepared for ethical dilemmas. Professionalism is thus also about being able to navigate decision-making. Much like the ethics I have taught to undergraduate students in Geography, each group is given a difficult ethical scenario to work through, using the RCVS and AVMA Codes of Professional Conduct to help them. These are cases where the threshold separating between right and wrong is more blurred. They are as follows:

A client registered with another practice attends your out-of-hours service and so they are now on the 'system'. Do you now claim them as 'your' client? Is this 'poaching' of clients acceptable?

An equine client asks you to back-date the vaccination record of her horse and you know these vaccinations were not actually carried out. The horse is fine and is very unlikely to have any of the relevant diseases. Do you do what the client wishes and back-date the vaccinations?

A client comes in with a new kitten and wants to have it micro-chipped. When you use the scanner on the cat you realise there is already a micro-chip in the cat and that it must therefore belong to someone else. Is the cat stolen? What do you do?

The students work through these scenarios in turn, and shout out their answers to Paul. Most are a little reticent and want to take the least risky path (do not claim the client as your own; do not back-date the vaccinations; retain the confidentiality of the cat owner by not questioning whether the cat is stolen). Professionalism is also honesty, integrity and respect for the privacy of others. Professionalism as it is taught here sanctifies the formal relationship between the vet and the client, thus holding up the idea that being a good vet is about controlling economic-social situations.

One student shouts out a statement and everyone shifts in their seats – something has disrupted the obedient atmosphere:

“This is a capitalist country, if clients are poachable, that's fine”.

My eyes widen and I want to see what happens next. A wry snort from the back suggests this is not fine. Paul tries to be diplomatic, for this statement goes against an underlying sensibility in the British RCVS code of conduct: that a cynical push for profit is distasteful. He tells us that it is not every man for himself in veterinary medicine and that professionalism is about working with other vets for the wider and more noble aim of animal health. I wonder if it matters that the student who made this claim is American, but I don't want to fall into stereotyping and compare this situation to the British NHS and American private healthcare system on the basis of one statement.

The veterinary professionalism made living here is an odd and contradictory notion that requires a holding back of emotion whilst also displaying just enough so that you seem relatable. It is about not openly stating you wish to make money from healthcare whilst also embracing the neoliberal restructuring of veterinary medicine. Either way, there is a strong moralistic tone to this seminar; not unlike a catechism.

*

The RCVS Code of Professional Conduct is understandably central to defining what veterinary professionalism is and how it is to be enacted by vets. The term 'professionalism' has already been under scrutiny in veterinary medicine, most notably by Mossop (2012), who considers the different interpretations of the term and their usefulness in veterinary education. Mossop (2012) calls for a working definition of professionalism across veterinary education that should focus on its ability to be taught and fairly assessed. Professionalism is thus a key site of semantic and pedagogic debate within contemporary veterinary education.

*

Student vets are aware that they have to find an equilibrium between the opposing states of professionalism. Jamie, a fourth year student, told me in our first interview that being professional was in contrast to being empathetic. We discussed the social anxieties that arose when Jamie was observing a euthanasia procedure in his native Hong Kong:

MD: Do you think that kind of scenario (a stressful euthanasia) is where these things (empathy) come out most?

JG: I think you have to strike a balance in these scenarios. On the one hand you have to be empathetic, on the other hand you have to stay professional.

MD: Yeah

JG: And make sure that you're confident enough to finish the job.

JG interview 1, p. 5

Laura, who was in third year at the time of our first interview, shares the same sentiment. To begin with she struggled to answer my question but ends up articulating the ethical-social tensions which surface in veterinary professionalism teaching:

MD: So professionalism is this really big term but it's quite slippery, right?

LH: Yeah

MD: So what's your interpretation of it?

LH: It's kind of... I mean, for me it's having a demeanour that portrays your knowledge and your expertise to someone else, and your maturity um... while also being able to empathise and connect with your clients. Um, and being sure of yourself or being sure that if you don't know an answer you're able to, y'know, you can go find somebody who can and it's just portraying yourself as a confident person who is competent to your clients.

For Laura this involves much self-control and social management:

LH: ... I swear a lot and not swearing during those types of things and not rising to emotion levels if a client is very upset.

MD: Yeah

LH: Remaining level-headed... It's hard for me too as I have somewhat of a temper so it's hard for me not to rise to other people... Sometimes it is unavoidable, cos you are human.

LH interview 1, p.7

At what point does an expression of empathy become a display of emotional excess in relation to professionalism? This is a question which students have to grapple with and, as Laura points out, can prove to be a very real challenge. Professionalism is the embodiment of expertise, confidence and above all, rational control, conceivably in the face of hysterical reaction.

Owen is in first year and he had only been at the vet school for about three months. He contrasts open, visible displays of emotion with professionalism much more strongly than the previous participants:

MD: How does it feel seeing parts of animals? Is it strange?

OI: It all comes down to you thinking like a vet. I mean, if you're... it all comes down to, I mean... I don't know how to say this...

MD: Are you maybe thinking like a professional?

OI: Yeah, as a professional. You shouldn't really be crying or be scared of something that you'll be dealing with for most of your life.

OI interview 1, p.1

Perhaps as a result of being in a very early stage of his veterinary career, Owen understands professionalism to be associated with “sucking it up” because that’s just the way it is. Although they relate to different circumstances and levels of experience, these statements connect professionalism to the control and moral conviction taught in the professionalism seminar. All those interviewed on this subject had received this seminar in the past and so, to a certain extent, may have understood my questions as a test of their knowledge on the subject and may have felt they were representing the vet school’s code. This loyalty to what one is taught could even be considered a display of veterinary professionalism in itself. The seminar was thus a relatively uncritical space where professionalism was laid out for students, not pulled apart for its potential multiple meanings. This class revealed the formal basics of professionalism focusing on hypothetical scenarios that are discussed within the safety of the seminar room/lecture theatre. The practice-based aspects of professionalism – how these lecture-based ideals are worked out in the field – will occur in latter chapters.

Situating value in animal welfare and ethics education

As can be the case in the professionalism seminar story recounted above, the role that morals and values play in the vet school is a particularly tricky one. Animal welfare and ethics is a moral landscape which gets to the heart of central more-than-human issues, and we are expected to have strong convictions about these matters. When I inform people I work within animal welfare and ethics, they often want to know my stance on veganism, on vivisection, on the relevance of animal charities. Big things can be read off small acts: children who pick the wings off flies will become murderers; women who have too many cats are crazy (McKeithan, 2017). Important moral judgements (often used to measure one’s ‘humanity’) are sometimes made in relation to the ways we live and die with animals.

Within the vet school however and in the animal welfare lecture I observed, moral issues and personal ethical stances were officially pushed away to the side, so that the vet student could learn to be objective in their understanding of animal welfare. It is not the formal job of the vet school to teach values relating to animal welfare, after all the aim is

'value-free teaching'. Sam, who teaches animal welfare and ethics at the vet school, told me of the role 'values' and the ever-present RCVS Code of Professional Conduct play in her lectures on animal welfare and ethics:

MD: You've gone over a few of these things before but thinking more about animal welfare within the structure of veterinary medicine, do you think it's taught in relation to the RCVS and the ethical codes of conduct, the professional code of conduct?

SE: I don't think animal welfare is, no. I mean all the codes of conduct really say is that animal welfare matters and that it should be the first consideration of the vet so that's fine and these are values, these are value-driven statements which are important. It's important that vets have these, to put value on welfare. The animal welfare science that I teach explains what welfare is, given differing definitions of animal welfare. Like I just said, there's more than one way of looking at it. They get how to assess welfare and the basics of how we use behaviour, physiology, neurophysiology and so on to measure welfare, how we try to assess how the animal is feeling using those methods, even though vets will probably never do a lot of these, they just need to know a bit about it.

MD: Mm-hmm

SE: I think you shouldn't be an animal professional unless you know a little bit about that.

MD: Yeah, sure.

SE: And then they get taught a bit about more applied kinds of welfare, about transport welfare and slaughter, y'know, things that are more practical and related to the use of animals.

MD: Yeah.

SE: I do a lecture on professional ethics, so for me, the RCVS stuff and the principles and so on, what I call professional ethics, which is just basically just saying to the vets, here's some things you should be thinking of when you're making decisions. But they don't really help vets to make decisions, ok? There's a lot of ethical freedom outside so you can't look at these principles and go 'well, I know what to do now in every situation'.

MD: Yeah.

SE: So they are very helpful and they are the only value-based teaching I give to the students. Ok? So I don't teach any values when I teach ethics.

MD: Yeah.

SE: I never say for example you should never put to sleep a healthy animal for example, I would never say that because there is a big debate over the value of animal life and whether death is a harm and we teach them about that and you can decide that death is a harm, this a painless death of an otherwise healthy animal. Whether it's harm or not is an interesting ethical debate and we teach them about that. Em, I would never give them one side or the other because they have to develop their own views which will guide their own behaviour later on, otherwise they're going to have this dissonance between what they really believe and think and what they're actually doing. So the RCVS is helpful, I do it in a separate lecture on professional ethics, saying here is what the profession expects of you and here's what values the profession expects you to have. But then I do separate lectures on ethical reasoning and so on beyond that, how do you make a decision about whether to kill this healthy cat you've been asked to kill for example.

MD: Yeah.

SE: How do you make a decision as to whether to kill this healthy cat you've been asked to kill, and that's not value based, it's skills based.

SE interview, p. 6-7.

It is of course fair to allow students to establish their own view on animal ethics and to provide them with a range of information on different stances concerning animal welfare and ethics is essential. This has worryingly been lacking in the history of veterinary education with much of this knowledge being "taken for granted as common-sense" (SE interview, p1). To claim that lectures on animal welfare and ethics are value-free however (aside from lectures on professional ethics) is to ignore the implicit moral education in human-animal relations that occurs in my interview with Sam, and the content of her lecture that I observed.

Animal welfare is situated as the scientific pursuit of animal understanding and feeling whilst veterinary ethics is professionally-informed decision-making that relates to the welfare of all stakeholders in veterinary medicine. Sam makes it clear that animal welfare and ethics have their uses in the undergraduate curriculum so far as they are taught as skills that can be applied to any given veterinary situation. It thus seems like weighing up of advantages versus disadvantages, harm versus care – a form of animal ethics akin to Singer's (1975) influential utilitarianism. A moral veterinary culture however is implicitly woven through this education *because of the insistence that it is an objective, value-free education.*

This moral cultural landscape is further defined in the way Sam breaks down the inside world of the vet school, where time is afforded for erudite ethical thinking and particularly high levels of animal welfare, and the outside world full of ethical freedom where vets find it harder to make decisions.

*

In order to explore animal welfare science and the ethical teaching occurring in the vet school, critiques by science and technology (STS) scholars such as Donna Haraway and Bruno Latour are essential. 'Science' can be framed as a set of practices and a mode(s) of thinking which involves observing nature from an objective position. In observing, the scientist must rid himself of any personal feeling or outside factors – it is just him and his object of study in this “culture of no culture” (Haraway, 1997: 25). It is possible from this position to claim that what the scientist is observing is reality, as he is not making anything new but is just revealing that which is pre-existing and has yet to be found out. If these observations can be proven enough times through experiment, then observation becomes fact and the scientist becomes the 'expert'. It is this ability to proclaim something is true via trials of strength which gives science its legitimacy and which imbues the scientist with the power “to ground social order objectively, literally” (Haraway, 1997: 24). Entwined with other aspects of modernity, science and technology become a matter of progress, with the aim being to solve the great questions of nature such as the enigma of animal feeling within the discipline of animal welfare science.

*

Embedded within the BVMS curriculum are sets of assumptions about the position of animals in the world, about what is 'natural' and about what the meanings of welfare, ethics, humanity and suffering are. Having spoken at length with Sam, I attended one of her lectures, the 'BVMS I Introduction to Animal Welfare'.

To begin with, Sam discusses the topic generally, mentioning the role of the RCVS in welfare maintenance and how one cannot give welfare to another – it must be felt within themselves. She explains there are three types of welfare: physiological – relating to bodily functions and fitness; mental status – relating to feelings such as 'happiness' or 'sadness'; and naturalness – is the animal doing what animals should do? We do not question what happiness means nor what it means to be in a 'natural' state.

We then move on to the concept of 'needs' and the differentiation between human needs and animal needs. The senses of love and belonging are debated as being central in the division between human and animal feeling. Can animals feel love?

From this philosophical question we move to measuring these types of welfare and the ease of understanding welfare through an animals' physiology. It is possible to measure endocrine and immune disturbance but even this does not necessarily provide a full answer. Whilst the scientific method is used throughout and is clearly stated as the most reliable and useful methodology within animal welfare, Sam does not propose that this can explain everything. There are of course levels of confidence and just because facts of animal sentience are created through human frameworks, it does not mean that they are created easily. Sam tells me in our interview that the important thing about animal welfare science is recognising that one cannot ever truly know another. Importantly, she compares knowing human feeling and knowing animal feeling:

SE: I mean there's more than one definition of animal welfare. There's one about the functioning of animals, how animals are functioning, there's one about how animals are feeling, there's one about how natural animals' lives are. I think they're all helpful but for me and for most animal welfare scientists, the primary goal of animal welfare is to work out how animals are feeling. And by feeling, I don't just mean, y'know, hope and embarrassment, I mean pain, fear, stress, hunger, cold, whatever em, and positive feelings too. So we are trying to work out how animals are feeling in different situations and that's the holy grail. That's why we need really clever behavioural techniques to do that, em, that's what we're trying to do. Whether we'll ever really be able to do it.... I don't know...I think we'll always be...I think we'll be gradually improving like we have been but I don't think we'll ever really know how you feel Megan, so I don't y'know.

SE interview, p.5

The holy grail of course, does not exist and Sam knows that. In the lecture theatre though, there is neither the time nor the space for this experienced nuance and so like with Bruno the horse, the 'facts' take precedence because they will always win out. Emotional states of animals are mentioned but as they cannot be measured under the rubric of science, ultimately they fall by the wayside. At this point, the discourse seems like a shutting down of discussions about what veterinary professionalism, and care, can be: it is difficult to see a way through when animal welfare is displayed here as minimum standards, established by humans. The lecture theatre and materials work as a façade for

science and I know there is something more to veterinary medicine than the professionalism of an interview in a university, or a PowerPoint in a lecture theatre.

A possible way through? The human-animal bond lecture

Throughout this chapter, we have wavered between the certainty offered by the geographies of the lecture theatre and the imposition of reason, and the promise of a freer, uncertain world beyond those four walls, where things cannot ever fully be known. These tensions are ambiguous and inflect different types of veterinary care that are not entirely right or wrong. It remains difficult within the confines of the lecture theatre to broaden speculative caring ethics however, due to the relative fixity of veterinary professionalism's emotional contract. Here, I offer another story of a different atmospheric quality and volume – 'the human-animal bond lecture'. This is not set in opposition to previous stories from the lecture theatre, but could offer a way through the ethical dualism and stasis. This next story draws attention to those veterinary caring relations which cannot be so easily explained away or ascribed as human. The story reveals how more-than-human empathy does not answer the problems of veterinary care – sometimes it can just alert us to the particularities of harm. It is an important wakeup call reminding us that this is a politically charged terrain.

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I was looking forward to this lecture entitled 'The human-animal bond' as it appeared to gesture towards the multispecies nature of veterinary work and the word 'bond' was suggestive of some kind of emotional connection. By a crude measure, perhaps it would be less 'science-y' in orientation. Perhaps it would involve a more open approach to teaching students about more-than-human empathy. Having spent lots of time in lectures based on body systems and disease of the physical body, an external speaker covering a more 'philosophical' subject felt like a treat.

The lecture came with a trigger warning, something I hadn't heard offered in any previous class: today we would see distressing images and listen to stories of harmed animals which some of us might find distressing. We didn't have to stay and listen if we felt upset. This was what one would have to deal with though in veterinary medicine and nobody seemed particularly phased at this stage. Breezy pre-lecture chat and email checking went on uninterrupted. The lecturer was Fiona, a staff member from the Society for

Companion Animal Studies (SCAS). She began by defining the 'human-animal bond', highlighting its importance in veterinary medicine.

The human-animal bond occurs between humans and other highly intelligent animals, and forms the basis of a reciprocal, trans-species relationship, Fiona tells us. We are told this bond needs to be better exploited through the use of animals as human aids such as through guide dogs, pets-as-therapy services and even as emotional comfort and empathetic education for children. "Cats give better support to cancer sufferers than spouses", Fiona says.

Pets appear to listen without ever burning out like humans, she continues, and they don't get tired of offering care. I picture the needy gaze of the everyday Labrador and wonder if any vet had ever imagined this as emotional labour.



Figure 6 – Sad Labrador

Although animals have frequently been used in therapeutic environments, the role of the animal as a distinctly active and feeling participant has been overlooked (Gorman, In Press). What we see in the eyes of animals – specifically pets – is never a direct display of what that animal feels. Even though these relations are reciprocal, animals are often vessels for human anxiety, something which vet students and vets often tell me. Fox and Gee (2017) back up this claim and explain how the rise in intimate human-animal attachment in the later twentieth and early twenty-first centuries is more complex than equal reciprocity. Conspicuous consumption, class, mental ill-health – symptoms of living in late capitalist society – collide and are made apparent through human-pet relationships. The lines between care and harm are blurred and these relations can get at the most difficult existential worries. Empathy has the potential be exploitative and cruel: hoarding cats because you love them for example, or when I tickle my dogs nose to the point of annoyance because I find her too cute. We still construct worlds made for humans even though we melt inside at the sight of sad puppy-dog eyes.

It's from this point that Fiona asks us to consider the intrinsic links between people, animals and environment by moving on to the next section of the lecture:

'NON-ACCIDENTAL INJURY (NAI): THE BATTERED PET SYNDROME'

This was the reason for the trigger warning. A key factor making the human-animal bond important in veterinary medicine is not pleasant experiences such as feeling warm for patients and clients, but recognising abuse that transcends species boundaries. One must have an eye, or an intuitive "sixth sense", for seeing the links between child abuse, domestic abuse and animal abuse. It is disturbing. Abusers lie about hurting their pets in the same way they do for abused humans. Is the client claiming the dog fell down the stairs or that the cat stood on the hob? Are the children in the consulting room dirty, bruised and terrified? We sit through a series of images of these harmed animals – beaten, neglected, starved, mutilated, microwaved – and we gasp or remain in stony silence. It makes me feel woozy and I hear someone unable to contain themselves and exclaim 'that's atrocious' and 'I worry for her children'. No, I am not going to illustrate what a cat is like when it has been put in a microwave because this is something I would rather

forget. No, I am not exaggerating disgust for stylistic effect because this corporeal horror speaks for itself and evokes a collective empathetic atmosphere in the lecture theatre.

This is a more-than-human empathy that is based on suffering or, more correctly and hopefully, the *capacity* for suffering. This sensibility for the livingness of others has been theorised through these means (Greenhough and Roe 2011; 2010; Acampora 2006; Haraway 2008) but it has not been utilised to understand how this sensibility is mobilised in such a space and with such actors for the purposes of education. What is so evocative in the lecture slides is how the atmosphere formed is not one of distant sympathy (a feeling-for), but one of a multi-sensuous compassion (a feeling-with). We try not to imagine the smell of fetid wounds but it is hard. Deleuze (2003) captures the feeling that comes from being confronted with bodily horror when he discusses the appearance of disfigurement in the work of artist Francis Bacon:

“Meat is not dead flesh; it retains all the sufferings and assumes all the colours of living flesh. It manifests such convulsive pain and vulnerability, but also such a delightful invention, color, and acrobatics. Bacon does not say, “pity the beasts”. But rather that every man who suffers is a piece of meat. Meat is the common zone of man and the beast, their zone of indiscernibility; it is a ‘fact’, a state where the painter identifies with the objects of his horror and his compassion” (2003: 23).

This is an entirely different ethics and politics than those raised and mobilised in other lectures. Notably, the students know this lecture content will not be examined and so perhaps the atmosphere carried with it a rare openness that comes from the absence of ILOs. Beyond the difference in the theoretical approach to human-animal relations – reciprocity as opposed to ethical contracts – the use of images and examples of suffering helped form an affective atmosphere based on empathy. This was not created through rational thought and was inherently more-than-human: images, technologies, eyes, individual bodies and imagination about other’s bodies enabled this speculative ethical atmosphere to arise in the lecture theatre.

Concluding remarks

Having begun our journey through the vet school’s spaces of learning in the lecture theatre, what has emerged is not a banal and neutral site. Aside from the topics covered – colic, cell biology and how to kill an animal - we have learned about the emotional and

affective geographies of the lecture theatre, how they generate particular animal bodies/forms of animality, and how they form distinct forms of veterinary professionalism and care.

The lecture theatre works to create a space set aside from the 'real' world of ethical uncertainty and, in the space formed by its fabricated walls and atmospheres, aims to suspend a different, more ordered reality. The world existing inside the lecture theatre can be understood and measured, approached at a distance and ultimately figured out. Discursive lecture materials as well as affective atmospheres intertwine to maintain this order. These are emotional and affective geographies that are all the more vital in the way they control emotion and valorise rational thought within veterinary education. The emotions are there, but they are to be managed according to the contracts of professionalism and the strong undertow of scientific method.

This outcome is of ethical and political significance to those humans and animals involved in the caring relations of veterinary medicine. The case study approach figured through 'Redroofs Riding Centre' encouraged an approach to animal bodies as a set of scales to be broken down into smaller, more understandable elements. As a consequence, animals as individual, feeling creatures are overlooked. This is not a call for vets to give up this specific knowledge but is to say that this process imbues an ethico-political ontological structuring, whereby animals are positioned merely as the object of scientific enquiry. The dominant themes of logic, rationality and conscious thought as the correct way to approach animals creates an anthropocentric form of veterinary care and promotes a culture of emotional resilience.

As I have also shown however, these structuring elements never 'win out' and are in tension with moments of more-than-human affective transgression. Care is more complex. Additionally, the more-than-human is not a way of looking for something good in a faulty structure. It is a way of seeking different ethical possibilities. I am not able to say whether, as a space for learning, the lecture theatre leads to 'good' or 'bad' care, but taking an approach where these terms are not fixed in advance allows for more acute levels of attention to be paid to the politics of these becomings. The geographies of the lecture theatre, with its physical, ethical and personal boundaries, are important and understandable as a form of education – I have shown however, that this does not mean there isn't something more to the PowerPoints and hiding yourself away in the back row.

5. Underneath, the anatomy lab awaits

Introduction

Practice-based learning in the vet school

The lecture theatre is comforting for a number of reasons: the darkness offers me welcome anonymity and the blue-screen fuzz of the PowerPoint is familiar. It is almost womb-like. We are all familiar with the structure of lectures and the way it presents veterinary medicine as a form of linear slides with a clear narrative. The world is made understandable and bullet-pointed.

Veterinary students do not become veterinary surgeons with just their eyes and high-level cognitive functioning however. Practical classes and practical assessments (OSCE's and DOPS²⁸) follow on from lectures so that the tension between theory and practice can be played around with. The recent change to a spiral curriculum within the BVMS degree, whereby topics are revisited repeatedly, each time becoming more complex and clinically focussed, means the vet school consciously facilitates this blurring of knowing and doing, of minds and hands. What do some of the practical elements of the course provide to all those involved - human and nonhuman? How does one become a practically able veterinary student? What are the relations between embodied practicality and more-than-human empathy? This chapter broadly focusses on these practice-based questions and how they are worked out in the site of 'the laboratory'. By 'laboratory', I specifically mean the anatomy lab and the clinical skills facility, the two main places where students develop their pre-clinical practical veterinary skills.

I asked some students these questions and was met with confusion both because they did not perhaps think it was a useful question to be asking of the profession, and because they suggested the answers were self-evident. There was stuttering and pauses such as when I asked Jamie, a fourth year student, how he learnt his practical skills:

MD: When you watch other clinical staff doing a procedure, how do you try to learn as best you can, what are you thinking when you see them do, for example, a urethral catheter?

²⁸ Objective Structured Clinical Examination (OSCE) and Directly Observed Procedural Skills (DOPS) – see Glossary for definition.

JG: (frowns and does not respond)

MD: Are you trying to mimic the teachers?

JG: I suppose at the same time as seeing it, you are running through the whole procedure in your mind.

MD: So you'd look at their hands?

JG: Yep. It's the same with the 'hand tie and ligature' one we had just a month ago I think, so we (the teacher and Jamie) stood like side by side.

MD: So you did it at the same time?

JG: Yep.

JG interview 1, p. 3

In the end, the words did not give much away and students frequently told me that practical skills were just the result of 'experience'. This shed little light on my question so, like Latour (1987), I followed the students into the lab:

"We have no choice, however, if we want to apply our first rule of method: if the scientists we shadow go inside laboratories, then we too have to go there, no matter how difficult the journey" (1987: 63).

The chapter thus starts in the anatomy lab, one of the key sites where students begin to learn veterinary medicine as a practice-based medical profession. Here, I begin by unwinding the intricate embodied abilities learnt as students work with dead animal specimens. In particular, this reveals how haptic, more-than-human geographies are formative in the creation of the mutable laboratory and in developing speculative ethics in veterinary education. Moving onto the Clinical Skills Facility (CSF), I take closer look at the role of animal models in pre-clinical practical veterinary education. In a very different way than seen in the lecture theatre, negotiation, adaptation and 'tinkering' (Mol, Moser and Pols, 2010) come to fore in these sections. As students begin to use their hands and feelings to work, it becomes increasingly clear that despite the regulation and rigidity of evidence-based medical education, veterinary medicine is partly characterised by emotional, ethical and scientific uncertainty.

As a speculative conclusion, this chapter ends by critically exploring how the practices previously discussed might offer new ways of talking about and living with dead animal

bodies in veterinary medicine and geography. Influenced by Dixon's feminist materialist geopolitics (2016), Dixon and Ruddick's monstrous geographies (2013) and Patchett's (with Mann 2018; 2012) understandings of more-than-human embodied skill, I propose that problematizing the boundaries of interior/exterior, living/dead, human/animal and science/emotion has important ethical and political implications. I finish by suggesting that the sensuous, tactile attunement with nonhuman materials and the embodied veterinary skills that occurs within 'the laboratory' can be considered a site of more-than-human empathy.

The anatomy lab

Through the swinging doors

The walk from the lecture theatre to the anatomy lab is quite different to my previous experiences of moving through a university campus. Groups of friends clump together, gossip and saunter, this much I am familiar with. I do not have a group to join though so I follow the students in order to find where the lab is. My casual exterior belies the anxiety of knowing I am very much on the social periphery. We leave the Main Building and turn left up the hill to the Johnson building. This short 5-minute walk bypasses the Farm Animal Production Facility which we smell before we see it. It is possible in the vet school to become spatially oriented by smell before any other sense. The smell is shitty and sweet and suggests the presence of cattle and good quality hay. These smells seem out of place, juxtaposed with the roar of traffic along Stevenson Road. Whilst the scent is very much living, the only animals we glance as we pass Farm Animal Production Facility are dead and hung on hooks, or splayed open on stainless steel tables. I was unsure what species they were, but they were clearly real animals – messy, grotesque and fascinating, unlike those in the previous lecture. It was a sense of things to come. Once in the Johnson Building, we dressed in the short-sleeved lab coats and white wellies required by regulations. We went down two flights of stairs, beneath the offices above and entered the anatomy lab through swinging doors.

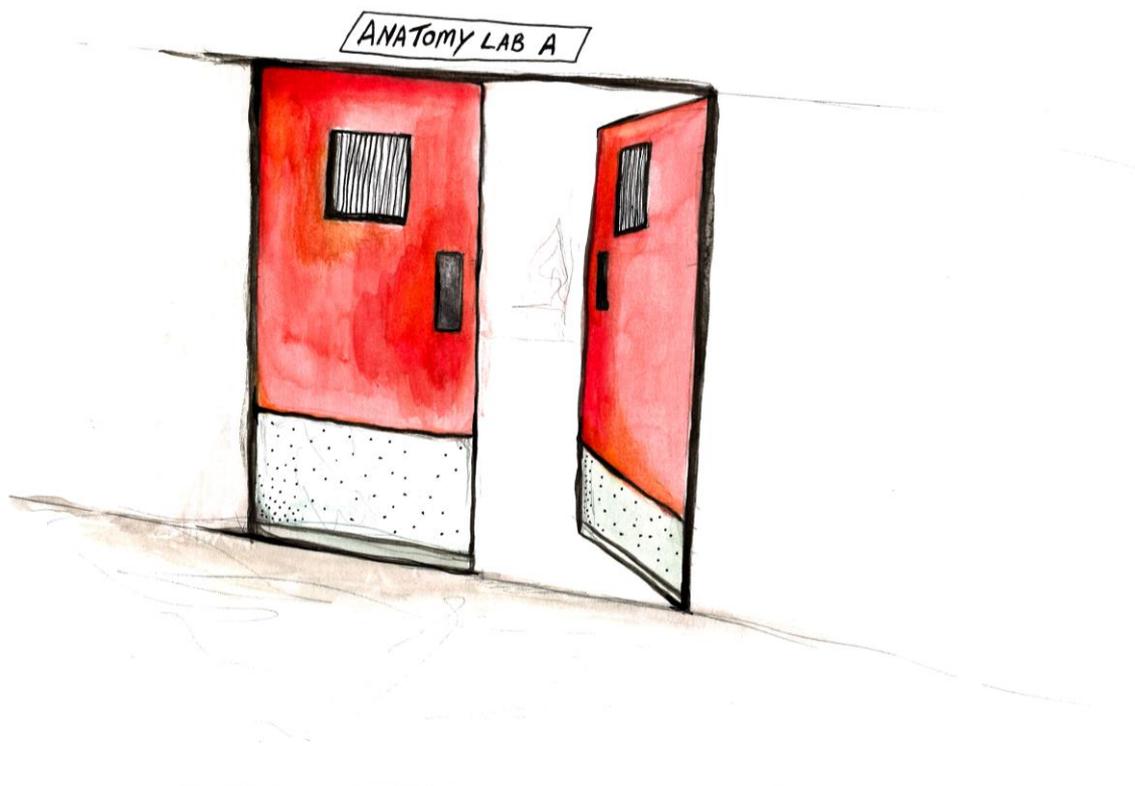


Figure 7 – Through the swinging doors

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What is there in a place when understanding science? The development of science, if it is ever appropriate to use this term so generally, has always been interwoven with geography, with historical understandings of science enriched by asking distinctly spatial questions (Naylor, 2005). Following debates around the localisation of scientific knowledge (Shapin, 1998), place has emerged as a central way through which to study science as socially and culturally made (Livingstone, 2003). These places can take the form of field sites accessed through personal archives (Lorimer and Spedding, 2005) as much as they can be discerned at formal sites of experimentation and exploration (Goodman, 2017).

Laboratories then, seem an obvious place of focus in the geographies of science and STS. Contemporary ethnographic studies involving laboratories indeed form part of the backbone of STS, following the seminal work of Latour and Woolgar (1986), Latour (2005; 1987) and Law (1999). Whilst I have emphasised Latour's development of actor network theory (ANT), it is important here to draw attention to how his work has changed understandings of what the laboratory is as a place of science. Spatially, laboratories are not enclosures of a localised science, but are made up of heterogeneous assemblages – sets of embodied practices and technologies, mobilised by human and nonhuman actors. They are not held in place only by their physical structures but neither are they only created through social relations. A laboratory, in their particular vein of STS, is a matter of materiality, embodiment and relationality.

Beth Greenhough has extended this approach into more-than-human geography specifically (2012; 2011). Using ANT to explore the attempt made by a biotechnology company (named deCODE) to create a database of Iceland's entire population (inclusive of medical, genetic and generational data), Greenhough discusses the notion of a more-than-human 'island laboratory'. This island laboratory is made up of different assemblages that are at once relatively fixed and fluid:

“ANT traces how at each site deCODE's GGPR (the name of the proposed database) became something else: an island laboratory, a national resource, a violation of doctor–patient confidentiality, an unfair competitive advantage, a leading media story and a cautionary academic tale; each assemblage requiring labour, materials and agents to fuel assembly (Latour, 2005). While this effort is sustained, there is an illusion of permanency, assemblages seemed to hang together and materialise as a company press release, an act of parliament, a

genetic research database, a share offering, or an island laboratory. But such assemblages are fragile, and many (like deCODE's GGPR) are never fully realised, or mutate into something else" (Greenhough, 2011: 136).

Greenhough (2011) manages to explain the ontological tension of the laboratory well. On the one hand, the laboratory is shown to be an enclosure of objective science, offering relative order through its ability to close in on an experiment, and on the other hand, the laboratory is a site of ethical uncertainty. This notion of the laboratory as a site of mutable relations will be investigated through this chapter via a close, sensuous engagement with what goes on in the anatomy lab and CSF. Hands become eyes, and eyes become hands, but everything is more uncertain.

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The anatomy theatre is a white cavern. I am not sure what I am struck by first when I enter, the clinical brightness of the room or the stench of what I guess was Formaldehyde. It takes a while for my eyes and sinuses to adjust, but the students seem at home, unfazed. They amalgamate into groups of three or four and pick up a worksheet detailing the instructions for the class.

I have no idea what is going on so I stand near the door to take it all in. Within the room are seven stainless steel tables which are labelled stations one to seven. The room is flanked by worktops and at the front is a projector screen displaying the PowerPoint title "2ND YEAR HINDLIMB ANATOMY DEMO". In front of this stands the class leader, Harriet, and a lab demonstrator I don't yet know. On the far side of the room is something I can't quite make out – there are plastic swinging doors, people bustling, animal bodies being carried. There is a life-size plastic model of a horse and one of a cow. X-Ray viewers light up the right hand side of the room. The ceilings are high and TV screens hang on the walls so that one would be able to view them from any position in the anatomy lab. The floor slants into the middle where there is a drain which I suppose is there to collect any fluids and ensure absolute cleanliness.

Station 5a: encountering the specimen

I pick up a worksheet and see that there are sets of questions for each of the seven stations – students have to work in groups at these stations in order to find the answers on their worksheets. Holding the worksheet gives me a sense of purpose so I approach a

group at Station 5A and ask them what they are up to. “We need to answer these questions”, I was told by someone called Tom (everyone had name badges), as he gestured to the worksheet.

I look at my worksheet and see the ever present Intended Learning Outcomes (ILOs).

The aim of this particular demonstration was to:

“1. Identify the components of the hindlimb in the dog and explain their functions.

2. Recognise normal hindlimb anatomy on radiographs.”

Hindlimb Anatomy Demonstration Worksheet, p. 1

Why are these ILOs in particular answered through a practical anatomy class? Couldn't one just learn these things with an anatomy textbook, where each component is clearly labelled and memorisable? There must be something in the handling of the hindlimb that gives the students an insight into its function, that would not be possible from reading. This is about embodied learning. I was unable to answer these questions or even understand what they were asking but then, neither did the students I was working alongside. After all, the lecture on the topic had only been this morning and they had no time to absorb this new information. We stare at the sheet a bit longer though and then focus our attention on what we are really here for: the specimen in front of us.

The specimen is the back leg of a small dog (maybe it is a terrier?) suspended onto a mount with pins. It has no hair or skin, just muscles and nerves twisting around delicate bones. This specimen has a distinctly chemical smell and the flesh is greying, like overcooked chicken. It is not fresh. I ask why it is so strange looking and Tom tells me it is because it is 'an old one, pretty much pickled now'.

Still getting my bearings, I leave Station 5A and wander over to the other stations spaced throughout the lab to get an overview of all the different specimens and all the different questions being asked of them. Some stations are skeletons of hindlimbs, two are muscular specimens like 5A, but are glistening red and purple and recently skinned. Some are from small dogs and some from large dogs. Some stations are not specimens but radiographs of hindlimbs held up against the x ray viewer for inspection. One station is a whole body of a mongrel, hair and all, prostrate on the table. The students' experience of

the anatomy lab could not be anything other than sensory and inherently involved with the lives and deaths of nonhuman others.

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Understanding what is going on in the lab is predicated on a practice-based geography. It is clear that we are in the realm of 'doing', but how do we really access and think through these practices? I configure two key approaches here: the first centres on engaging with haptic/touch geographies and the second focuses on bringing new materialisms into the mix.

Haptic geographies are part of a wider landscape of sensuous geographies, which deliberately seek to understand how senses other than the visual – historically the dominant mode of spatial analysis – create geographical phenomena. Sound (Gallagher and Prior, 2014), smell (Gorman, 2017b) and taste (Hocknell, 2016) have been investigated by geographers but it is touch and 'the haptic' that I will focus on here as the primary sense through which students encounter animal bodies and technologies.

The haptic, following Paterson (2007), goes beyond a psychological understanding of touch by suggesting it is a form of bodily spatial awareness involving *proprioception*: "the body's position felt as muscular tension", the *kinaesthetic*; "the sense of movement of body and limbs" and the *vestibular*; "a sense of balance derived from information in the inner ear" (2007: 4). Haptic geographies seek to complicate boundaries between the inner, cognitive worlds of touch with the aesthetic engagement with space, in other words, "to articulate something akin to a 'felt' phenomenology" (2007: 15). As such, the aim is to explore a broader sensuous geography which recognises the interconnectedness of the various senses, and self and world. This is an approach seen in experiments with landscape phenomenology by Wylie (2010; 2009) and Lorimer and Wylie (2010).

Touch forms part of haptic geographies and can refer to the distinctly immediate tactile, 'cutaneous touch' that occurs between surfaces as well as the perhaps more emotional sense of 'being touched by something'. Both of these relate to one another and are important to understanding the practical haptic geographies that make up the anatomy lab and students' embodied learning.

Of particular relevance here is the work of Dixon and Straughan (2010) and Straughan (2015) who attend specifically to the corporeal aesthetics of skin. This work considers how touch enlivens an ethical engagement with the interior and exterior surfaces of skin:

“Touch is, then, a sense that draws attention to the import of both the internal and external aspects of the body in sensing and making sense of the world, situating imaginaries of touch that are shaped by immersion and entanglement” (Straughan, 2015: 364).

Working with the practices of taxidermy, Straughan (2015) contends that the corporeal manipulation of dead animal bodies opens up a sense of vulnerability in the taxidermist and thus a new form of material sociality, even reciprocity, between living human and dead animal: “As both matter and life are capable of touch and being touched, both catalysts for affect, then we can consider both as interconnected through a form of sociality” (Straughan, 2015: 372).

This leads on to the second approach to practice-based geography in the anatomy lab, that of vibrant materiality. It is the particular case in the anatomy lab (and CSF) that the animals being touched are no longer living and so it is necessary to consider the role of matter and objects with these haptic geographies. This is not to say that these dead animals are ‘mere objects’ but is to suggest that, through their involvement in veterinary practices, they emerge as a liminal being between life and death, living beast and inanimate matter. Patchett’s work, again within taxidermy, recognises this by proposing a “vitalism... that encourages social scientists to work at and on the limits of life and death and movement and stasis, much like the taxidermist does” (2012: 10). Patchett works specifically with handling dead birds to create what she calls ‘neco-ornithologies’. Inherent in these more-than-human necro-practices is an embodied skill that emerges through the tactile interfaces between humans, animals, matter and technologies – it is a skill not located in any one individual and is emergent (Patchett and Mann, 2018).

It is wholly necessary to recognise the potential vibrancy of touching bodies and embodied skill in order to attend to the speculative ethics of more-than-human empathy. As Puig de la Bellacasa (2017) notes in relation to what she calls ‘haptic speculation’:

“These engagements do not so much entail that knowing will be enhanced, more given, more immediate through touch than through seeing; rather they call attention to the dimension of knowing, which is not about elucidating, but about affective, touching and being touched, for better or for worse. About involved knowing, knowledge that cares” (2017: 118).

In order to understand how veterinary hands-on skills are formed and honed by students, it is not enough to leave the black box that is 'experience' unopened. It is not possible to ignore the 'things' – animate and inanimate, living or dead – that take part in this experience. It is these haptic practices and materialities which interweave to create the site-based ontology of the lab, develop students' practical veterinary skills and create new ethical relations between student and animal, and between formal science and embodied, emotional skill.

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The principles of locomotion

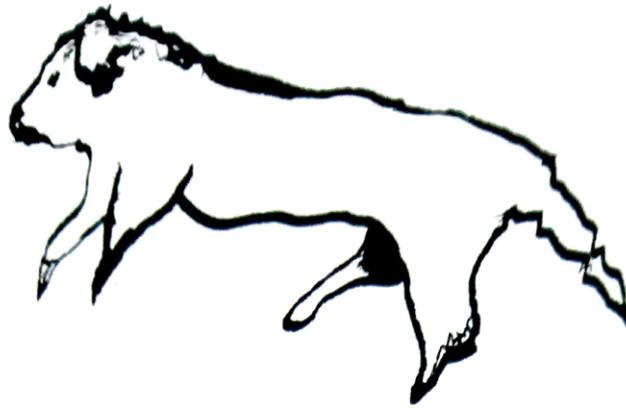
I move around to Station 1 named 'Principles of locomotion', where a heated discussion has broken out between two students, Rich and Becky. Rich is unsure about a question about comparative anatomy:

“b) Which limb movement is possible in the hindlimb of the dog and cat but is severely limited in the hindlimb of the horse and cow?”

Hindlimb Anatomy Demonstration Worksheet, p. 2

Becky claims to know the answer. Rich is unafraid to admit his confusion and Becky is comfortable enough to point out where he has gone wrong. There is little anxiety in the anatomy lab - despite its clinical appearance, the atmosphere is relaxed and almost jovial. It is in the confident stride students take between stations and the authority with which they fill their lab coats.

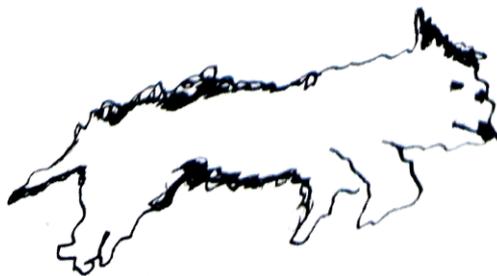
Becky explains in technical language how Rich had wrongly identified the limb movement. She explains it verbally, but he still doesn't get it. This debate is happening next to a cadaverous dog on the table, which is willing to be bent in any direction. It is dead though, so technically the students are able to do anything they want with the body. I remind myself that the dog is not a dog but 'the cadaver', as the students and staff name it. Where does respect for the cadaver begin and end? How far can its body be bent?



What is a body?



What is a cadaver?



What is refuse?

Figure 8 - What is a body?

'It goes like this', Becky says, flexing her wrist up and down to demonstrate the limb movement in question.

'I still don't get it', Richard replies.

Becky turns to the dog, takes its hind leg in her hands and bends it in the way she believes demonstrates how the movement would occur naturally.

'Oh, so like this?' says Richard. He bends the paw in a similar way to Becky, but with more force.

Did they both 'get it' though? Without the dog, without their tactile manipulation of it, and without the insight to relate it to their own kinaesthetic capacity for movement, they would at least have been less sure. This is embodied anatomical knowledge in action.

I see this trans-species corporeal comparison again, when another student picks up a tiny femur and holds it up against her own thigh to demonstrate which bone it is to her colleagues. It is kind of comedic as it was so out of scale and I struggled to see how it was comparable. Throughout this class I was intrigued at the ability of the students to think and most importantly, *speculate*, across species. I was also impressed with how they had learnt so many things about anatomy in only two years – the sheer bulk of facts to memorise is immense. If it were just about the ability to reel off what bone connected to which other bone though, then one could just read the relevant textbook. What is offered in this anatomy practical is the tentative beginning of working with one's hands, igniting new affective relations and of managing one's feelings accordingly. These specimens, cadavers, animals, *objects that matter*, must first and foremost be approached and recognised before they are broken apart with scalpels.

Diving for pearls

Again I am in in the anatomy lab, where I am observing a practical class about female reproductive anatomy and 'spaying' (removal of the female reproductive organs in order to prevent pregnancy, similar to a human hysterectomy). The aim is to see how first year students in particular deal with 'gruesome' anatomy practicals whilst being in the earlier stage of the BVMS course. I had been to a few anatomy lab classes by now and had learnt how to move around the space and I recognised the faces of a few students I had

introduced myself to. I had plenty of experience watching surgery at my family's veterinary practice and had even watched my dad spay both our dogs, out of macabre fascination and respect. Perhaps I knew how to spot a dog's ovary before the students themselves.

I am still not used to the oddity of seeing dead animal bodies lain out so casually however. It is an anatomy lab, so it is not that the bodies are technically out of place, but it is uneasy nonetheless. The sinks are full of defrosting cats, their limbs rigidly poking above the warm water. There are shelves lined with various parts of the horse leg (muscle, veins, skeleton). There is busyness in the background, those doors which occasionally swing open to reveal...glimpses of things.

Inside the lab today are also many steel tables to accommodate all the students – there must have been about fifteen stations. Having split themselves up into small groups clustering around a table, the teacher Ellis yells at the students to make them stop talking and LISTEN. I couldn't hear well as sound echoes off the tiled surfaces, always reminding me of the medical setting. The other teacher Sheila was going to carry out a bitch spay on a cadaver at the front of the class whilst Ellis filmed it so that the procedure could be viewed on any one of the seven screens throughout the room. Thus far, there was no mention of the meaty object which sits in front of the students on their table. I ask a group if I can join them and we watch as the videos began on the multiple screens.

Sheila states that the incision into the bitch would be different if it were a live dog as the muscles would be tense and obviously, it would bleed. It is a different story when the dog bleeds everywhere. The incision with the scalpel is fine and Sheila pushes her gloved hand into the body cavity in a curved and confident motion.

Sheila knows what she is looking for already because she has done this many times. Her eyes fix on the middle distance as if to focus all her concentration into the tips of her fingers. She delves in further and I can see the muscles in her hand contract as she grasps the insides of the cadaver, searching for the uterus. The students nodded as they tried to visualise the inside of the dog. Sheila's frown loosened as she finds the uterus and pulls it through the incision. You might think that surgery requires a delicate touch – and in some cases it does – but often strength in one's fingers is necessary to grab organs that tend to slip around amongst visceral fat and sloppy organs. After all, it is not like you can see inside the body with your eyes.

The ovaries are harder to find than the uterus and so you have to feel your way through the other tissue and bypass the kidneys to get you to where it should be. The camera zooms in at this point – it doesn't make anything clearer though as Sheila's hand takes up the whole screen. This procedure isn't about the visuals. She tells us to use a strumming technique to find the ovary, a firm, pearl-like structure. Tap, tap, tap the way through then flick and twist the structure to confirm it is the ovary. This is when prior, textbook anatomical understanding becomes fused with haptic knowledge. Not only does one need to know the anatomical names, but it is necessary to be able to identify the thing you are trying to find from a variety of angles. The cadaver, like the dogs students will eventually operate on, is three dimensional.

Emily, a student at my table, gets distracted and starts playing and poking around with the body parts on the table which were still unidentified to me. Prodded it with a pen then went back to watch Sheila. The whole procedure is done so methodically that I felt even I could do it and I sensed Emily's eagerness as she fidgeted. Sheila was so adept though, she embodied the mythical 'experience' I was so often told vets gain through time. She just knew how tight to pull the ligatures without thinking. That movement in particular seemed unconscious, a literal tension in the thread. She seemed as able to manipulate the instruments as she did her own hands:

“Here, it is once again the tactile that is given primacy over and against the visual so that the self is brought into visceral proximity with other bodies, social as well as individual, machinic as well as organic” (Dixon and Straughan, 2010: 455).

After the demonstration, the students had to follow their worksheet and name the anatomical structures on the thing that was on the table in front of them, which was in fact a disembodied female reproductive system of a ruminant – a sheep's vagina, uterus, fallopian tubes and ovaries all connected. It is a less glamorous job than the bitch spay we had just watched, a let-down for our itchy fingers. Each part has to systematically be named and then sliced open with a scalpel to see inside. The worksheet instructs us to close our eyes as we move our fingers up the vagina to the cervix at the top – you will know you are there as it feels rough and fibrous. It can even be felt on the outer side of vagina by applying pressure and recognising its firmness underneath. Each group of students had a different reproductive system and they varied in size. I walk around each group, as do the other students, to compare, to giggle at the word 'vagina', to peel back layers and find the pearls.

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This is an embodied more-than-human skill which involves tinkering and figuring it out for yourself, with the help of others. Mol, Moser and Pols (2010) contend that the development of caring practices in ‘clinics, homes and farms’ depends on this ability to adapt practices in situ - as caring is never fixed prior to its enactment, it always emerges with the multiple actors involved. Writing about the tensions between care and killing carried out by vets during the 2001 Foot and Mouth Disease outbreak, Law suggests that veterinary care “depends not so much on a formula as a repertoire that allows for situated actions” (Law, 2010: 67). For Enticott (2012), this is termed the ‘local universality’ of veterinary expertise, whereby “standards, protocols or ontologies are universal only through their ability to be adapted locally” (2012: 76). In literally taking a stab at it then, students here are building their own haptic knowledges which are imbued with the uncertain trial and error at the heart of scientific practice, and are working to hold the tension between formal protocol and situated experimentation.

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‘I can’t find the ovary, is that it there? It looks really small. I thought it was up here?’, someone says.

The instructions then tell us to practice inserting a catheter through the cervix via the vagina. This one is tricky, as the students are unsure how much strength to use to force the tube through – they imagine the sheep to be living and consider if this would be a painful procedure for the ewe. Another student, named Rachel, asks Sheila:

‘How much force do I use to get the catheter through the cervix?’

Sheila tells Rachel that it’s really a matter of trying, getting it wrong, then trying again. Some others in our group are afraid that they’ll break the cervix and tear through tissue. Reticence doesn’t get you anywhere though and it seems you just have to dig in.

Emily says to Rachel: ‘You can feel it, it’s like a hole?’

‘Yeah, thanks, I’m aware it’s all about the hole’, Rachel replies. There is quite a lot of gallows humour today.

Emily is getting irritated by my questions about what it feels like to touch and dissect the specimen, so she asks me to touch it for myself. There was no other way she could really provide a description; it has to be felt personally. I find some gloves and look over my shoulder – I'm not really meant to be participating. Mostly I feel relief at having a job to do and an opportunity to share something with students at our table. We were all together in this strange task. I push on the flesh of the cervix and it is indeed surprisingly hard. The students smile dryly as if I have passed a sort of initiation test. It is hard to know what to say now, words did not seem particularly useful.

There is something not quite right about our specimen so we call over Sheila again. A lumpy mass is on the fallopian tube which is not seen in the textbooks. Unexperienced and keen, Emily hacks into the mass and pulls it apart with her scalpel and tweezers. She doesn't know what she is looking for and the result is a stringy mess of tissue. We draw in closer to have a look, we want to see everything there is to see about this mutant piece of flesh. There is some expression of disgust at this abnormality but mostly it is enchantment with the complexity of bodies.

“Well, you have sliced it to pieces so I can't really see what it might have been”, says Sheila when she comes over.

A mistake has been made, this is not how to dissect the deformity. Try again next time.

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In confronting the ontological lines between what is physiologically normal or abnormal, students are part of a monstrous geography at the end of their fingertips (Dixon and Ruddick, 2013). This encounter is ethically complex and important for student vets at the beginning of their education into other bodies. The deformed specimens, or rather the relations between student, specimen and scalpel, can be considered a form of monstrosity: the illusion of anatomical perfection has been broken to reveal a degenerate reality that is lumpy, malformed, wrong. The abnormal fallopian tube represents a changing ontological state, one that has not been controlled by vets and was not noted until the specimen was laid out for inspection. At some point, the mass grew and grew:

“This is a geography of material excess wherein the taxonomic classifications that sustain family, species, science and state are troubled. In their place we

see modes of expansion, propagation, occupation, contagion, peopling' (Deleuze and Guattari, 2004: 264).

The monstrous geographies of the veterinary education can be threatening and horrifying – my back shivers at the thought of a rash spreading on skin, a leaking abscess – but they can also be strangely enchanting, as Emily finds. It causes something of an ethical transformation, as discussed by Davies (2013) in relation to the 'virgin births' of mice in an experimental setting:

“By opening up uncertainty over the processes of repetition, these virgin births challenge assumptions of the stability of mice as technical objects. At the point of breeding, plasticity points to a potential collapse of repetition into uncontrollable difference, the spaces of standardization fold into those of emergence, challenging the meaning of each” (2013: 145).

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The anatomy lab, mobilised by hands-on, affective engagement with proliferating monsters – allows students their first awareness of variations from 'normality' and absolute physiological and ontological certainty. The knowledge of anatomical perfection is necessary first so that students can then confront the reality of veterinary medicine – that nothing is 'normal' and there is no complete surety in the scientific method. This isn't a move from ignorance to epiphany, from assurance to chaos however – the anatomy textbook is not a straw man to knock down. It is a more complex change in the ethical landscape of veterinary education. Students are quick to pick up on this change, as is seen in a lecturer's reply to a student who posted on the BVMS online forum. The student asks what constitutes a normal gestational period in horses, and the lecturer replies:

Dear Antonia,

You have hit the nail on the head with your last question – there will always be a range that is acceptable – as this reflects real life. Individual animals do not have to conform to the average of a population or the normal range for the population – there will always be outliers for whom this is 'normal'. As a starting point, statistically, have a look at 'the normal distribution'.

If you look at the slide I used in the lecture it gives the 'normal' range – that many horses conform to – but on the same slide I discuss that a foal is premature 300-320 days and that some horses can exceed 360 days. This fits with the range 320-365. If you were to pick 5 different textbooks on reproduction they would all give slightly different ranges and timings for various parameters and when to perform interventions/diagnostics – and no

one is wrong – they may be basing their choices on slightly different evidence. As I mentioned in a previous forum comment everyone has to learn and accept in veterinary science that there are often no black and white answers, things are often grey – and we account for this in exams.

Hope this helps

John.

BVMS 1 online forum correspondence, 18/5/16

Models in more-than-human veterinary practice

The Haptic Cow

Although ‘real’ specimens are primarily used in practical pre-clinical classes which, as I have shown, offer a distinct educational experience, animal models are also crucial. This is because learning to become a vet requires not just knowing about animals, or even knowing *with* animals, but also requires a particular knowledge of their ‘insides’, without being able to see them. The use of models thus allows for an engagement with animal insides without having to involve ‘real’, fleshy animal bodies. These models have never been living and are mainly constructed for the purposes of teaching a precise internal procedure. Like the specimens, the models aim to make the objective knowledges of textbooks three-dimensional and tactile. Animal models are developed and utilised so that students can practice their skills without harming live animals – aside from making a mistake that might cause pain, there are lots of students who need to practice and there are limits to how much any one animal can be manipulated. As well as this, the use of animal models allows for a suspended and safe reality to be created, in which students can be monitored by teachers (Scalese and Issenberg, 2005). Their three-dimensionality, form, and texture provides a context for the animal body so that the models become “mediators between theories and phenomena” (Hopwood and Chadarevian, 2004: 1).

This section then, extends discussions about haptic geographies, materiality and speculative ethics by investigating how students learn to become practically skilled through working with models and technologies in the clinical skills facility (CSF). Although there is a documented history of the use of models in medical education (Mazzolini, 2004), the approach I take here focuses on embodied practices and contemporary ethics.

To provide more context specifically on the development of animal models in veterinary education, it is worth bringing the *Haptic Cow* to attention. Developed in Glasgow by vet Sarah Bailie, the *Haptic Cow* is a:

“virtual reality simulator... developed to help train veterinary students to palpate a cow's reproductive tract, to perform fertility examinations and to diagnose pregnancy. The simulator uses haptic (touch feedback) technology and has a PHANToM haptic device (from SensAble Technologies) positioned inside a fibreglass model of the rear-half of a cow. When being trained with the Haptic Cow, the student palpates computer-generated 3D virtual objects representing the uterus, ovaries, pelvis and abdominal structures” (LIVE, 2018).



Figure 9 - Haptic Cow (LIVE, 2018)

The *Haptic Cow* has been highly commended within veterinary education for allowing students to develop the ability to link tactile sensation with the visual representation of the tissues they are touching. As Paterson (2007) puts it: “haptics enables a more active exploration and allows the use not just to see three-dimensional shapes represented on the screen, but also to *feel* them and interact with them” (2007: 128).

The *Haptic Cow* was not available during my time at the vet school (it is an expensive piece of technology that travels around different veterinary educational institutions), but this gives an insight into the types of technologies that are at the forefront of veterinary education. In place of the *Haptic Cow*, was a simpler but just as crucial, model of a horse.

Rectal exam, 9-1 I am

The rectal examination is one of the most important internal procedures to be learnt by veterinary students. It is both very simple, *gloved arm, hand or finger moves into rectum*, and complex, *what exactly is it you are feeling in there?* Rectal examination is part of a thorough clinical examination and, most commonly, is carried out to determine pregnancy in a variety of species.

Today though, we were not working with a real horse, one that might kick us and understandably resist the procedure. An odd plastic form stood in the corner of the clinical skills facility (CSF) and we were told by the tutor this is where we were to practice the rectal exam during this clinical skills class.

At first, I didn't get it. It just didn't look like a horse. It was as if the model horse had been chopped off mid-body so that only its hindquarters and backside remained. A tail must've been deemed superfluous to the model and instead there was just a large hole. Its hollow body was brown and it was the same height as an average horse.

One student, named Dave, approached the back end of the model horse and placed his hand through the hole, into the pretend rectum. With one arm plunged in up to his shoulder, his head turned to the side. Dave could not see anything inside the model, but it was not his visual capacity that was being tested. He frowned and was perplexed: "What exactly am I meant to be doing here?!" Unlike a real horse, there was no change in cutaneous sensation along his arm, no intestinal warmth, no sense of moving from one bodily state (outside) to another (inside). His arm waved within the rectum with no purpose.

"Move your hand to the left, that's where the bits are", another student suggested.

I moved around to the front of the model horse and saw inside its body was a suspended equine reproductive system ('the bits'), held up into the cavity by clamps and tape. It was a real reproductive system from a real horse. Dave's fingers managed to brush against it and he momentarily drew back his hand. "Ew, what is that?!" he gasped.

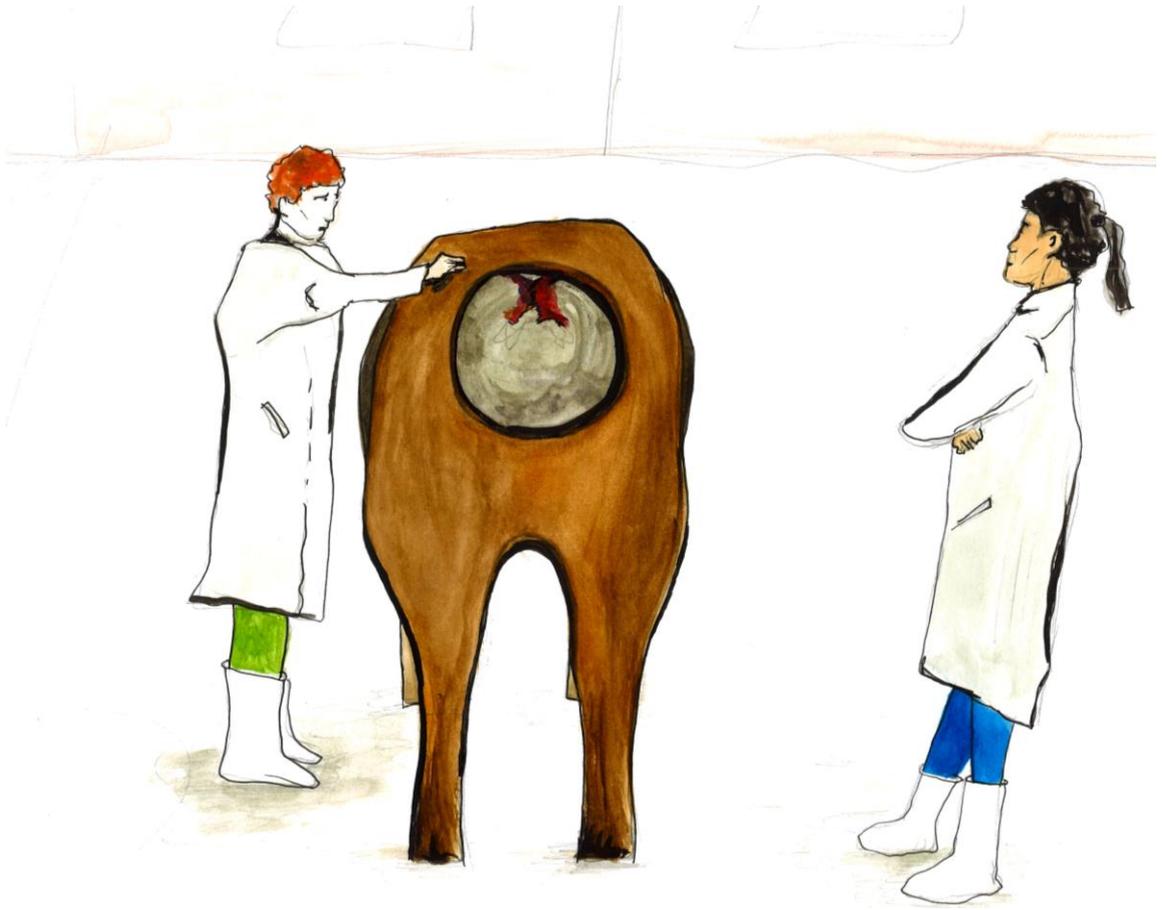


Figure 10 - Rectal exam, 9-11am

“That’s the uterus”, another student told him. She stood in the same place as me and together we watched as he groped through the air to find the various parts of the reproductive system. Without his eyes, Dave had to use his fingertips to trace an outline of the flesh and give it a name. Technically, this move is called ‘palpation’:

“a physical examination in medical diagnosis by pressure of the hand or fingers to the surface of the body especially to determine the condition (as of size or consistency) of an underlying part or organ” (Merriam Webster, 2018).

There is a crucial difference between the task of palpating the reproductive organs in the model horse and doing so in a real horse. Within a real horse, a vet palpates the reproductive organs *through* the lining of rectum and does not touch the reproductive organs themselves. When using the model horse, the student vet is touching only the reproductive organs as they hang in the air inside the hollow model. The experience of carrying out a rectal exam using the model horse therefore differs greatly from the reality of examining a living horse.

Why do it then? Bossaert *et al* (2009) recognise that using models to learn rectal examination does not replace the education received when carrying it out on a real animal. Their experiment comparing the effectiveness of simulations (such as the *Haptic Cow*) and models with the use of living animals when learning rectal examination suggests that a vet needs to carry out the examination with living animals more than 200 times in order to sufficiently locate the necessary organs and tissues.

When considering the use of models beyond their ability to aid students in either passing or failing at naming the internal structures of animals, a different type of knowledge can be appreciated. These skilful embodied knowledges are affective, haptic and tacit, and open up alternative ethical questions in veterinary education, as suggested by Ingold (2000): “Critically, this implies that whatever practitioners do *to* things is grounded in an attentive, perceptual involvement *with* them, or in other words, that they watch and feel as they work” (2000: 353).

Firstly, the three-dimensionality of the model allows for the development of a mediated, multispecies proprioception – the sense of one’s own body inside another. The proximal, distal, lateral and medial axes of the anatomical body become interlinked through the palpation of the hanging reproductive system. Following Paterson (2007), the spatial imaginary is no longer located in the head and sight is no longer deemed the foremost ‘trustworthy’ sense. This has ethical implications – it means the student cannot learn to be a vet without the recognition that the lively materials they are handling act back.

Secondly, it needs to be acknowledged that this hands-on knowledge is held in place by sets of ambiguous ontological relations. Working with the model creates sensations of both embodiment through the movement of the student into the model’s body, and disembodiment as the model is only a vague illusion of the ‘real thing’. It does not resist touch.

All of this opens up difficult questions about the geographies of touch and care. It can be easy to valorise touch as somehow leading to *relations that are more evocative* because they are less easily explained away or, that touching instantly brings one closer to another’s experience. In this framing, it is possible to conceive the notion that palpating the horse model extends into care for other, living horses. This may be the case, but it is not a utopian vision. It should be noted that the model horse did not give permission to be touched. In saying materials are no longer inert because of their contingent ontologies, it

does not mean that consent to being touched becomes unimportant. Maria Puig de la Bellacasa's (2017) essay on touch and speculative ethics is vital here as she states:

“My point is not to refute faith in the ungraspable, nor the appeal of touching the concrete. I am just realising how easily an inclination for touch as a way of intensifying awareness of materiality and immanent engagement can get caught in a quarrel about what counts as real and authentic, worth of belief and reliance” (2017: 102).

The model horse does not offer a perfect, suspended reality in which students can learn an exact clinical science and it does not solve the ethical issues of learning to do invasive procedures on animals. The haptic knowledges of working with the model do however provide students with new spatial and corporeal skills which bring with them new ethical uncertainties.

Concluding remarks

Beyond veterinary necromancy: possibilities of a posthumous more-than-human empathy

This chapter has worked to explore how practice-based veterinary medicine is developed in the site of ‘the laboratory’ which includes the anatomy lab and clinical skills facility. The focus throughout is on touch and haptic geographies, and how these form particular veterinary skills which are affective and ethically ambiguous. Beyond just providing clear answers to the questions noted on the worksheets, students discover their own skills and knowledges in relation to the animal specimens and materials they handle. It is an inherently textural, aesthetic and dexterous task that requires close attention to one's bodily sensations and the feel of other's.

Following Patchett (2012a; 2012b) and Dixon and Ruddick (2013), the laboratory is a site of an embodied veterinary skill which works between the boundaries of interior/exterior, living/dead, human/animal and science/emotion. The tactile ability to work with animal specimens and models – predicated on sensitive cutaneous touching and an embodied multispecies proprioception - allows students to ontologically question and speculate the nature of veterinary medicine. It becomes less clear as to what constitutes ‘normal’, ‘animal’ and ‘objective science’.

This transforms both human student and nonhuman animal body/specimen in that the student recognises the porous vulnerability between themselves and the specimen, attributing the specimen with a form of vibrancy: “Touch allows us to produce knowledge with nonhuman animals, be they dead or alive” (Straughan, 2015: 375). It is a form of more-than-human empathy not based on feeling sorry for another (the students do not care about the animals’ death *per se*), but formed through the recognition of the mutability of flesh - it is not possible to become a practically skilled vet without listening to the haptic response of another’s body through the fingertips. The student vet goes inside the animal both literally and metaphorically, and more-than-human empathy is co-produced in the process.

How far this form of care can go though should remain at the critical forefront of more-than-human debates, so too an awareness of the ethical and consensual complexities of touch. Whilst it may seem that the specimens and models are brought back to life through vibrant materialisms and more-than-human geography, we need to note the ethical differences between different types of matter, as done so in this chapter, and attend to them accordingly. This is why a more-than-human empathy needs to be materialised and site-based. The haptic geographies of the laboratory offer up new tactile knowledges at the tips of students’ fingers, shows how veterinary medicine is not ontologically watertight and prepares them for working in a world full of uncertainty.

6. On the university farm

Introduction

Becoming a vet involves more than working with dead specimens and the pets that we keep in our homes, as close as family. A vet must be capable of medically caring for all species and almost all different ethical circumstances. Aside from small animal veterinary medicine and, to some extent, equine veterinary medicine, vets are employed in *large animal* veterinary medicine and this field differs considerably from the veterinary worlds we have investigated thus far²⁹. In this chapter, we move away from the main vet school campus and onto the university farm where I explain the distinctiveness of the farm as a site of veterinary education, focus on its socio-material hybrid geographies and what this means for the more-than-human ethics of veterinary medicine³⁰.

The geography here is perhaps more infrastructural, made through a clear spatial control of animals, students and architectural technologies, and there are many more barriers, boundaries, fences and distinctions between things. It is a world that can feel harsh and unforgiving at times, a place that shuns emotional involvement with animals in favour of their death and disposal. Through approaching the university farm as a site of contingent, more-than-human ethics however, this chapter resists such dichotomous understandings of the farm and instead offers a critical insight into the practical relations between care and harm in veterinary education. Either way, it is not like James Herriot.

I begin this chapter with discussing the economic geographies of the farm and large animal veterinary medicine in general, so that it is clear how large animal (LA) veterinary medicine differs from small animal (SA) veterinary medicine. This will detail how veterinary education ‘fits in’ and even serves the business model of the farm whilst laying out the associated cultural-ethical landscape of large animal veterinary medicine and society. It is a very tricky terrain to manoeuvre, where wider ethical debate is often dualistic and angry:

“What to make of the violent death of a livestock animal? The question pulls like a current; relax and let it take you to calmer waters or connect with the undertow and remain propelled by its agitations. If the violent death of an

²⁹ For definitions of the terms ‘small animal’ and ‘large animal’ veterinary medicine and ‘equine’, please see the Glossary.

animal is to be an event of violation, then call upon rights. If industrial animal violence is to be an occasion for reform, then call upon welfare. But if it is to be conceived as an opening, a zone of transformation or a rupture of thought, then call upon the world of encounters” (Todd and Hynes, 2017: 1-2).

A primary aim that runs throughout this chapter is thus not to align the arguments to one ethical position and shut down others, but is to freely explore the tensions between care and harm in order to re-imagine an *affective animal husbandry*. It is crucial to push and investigate common-sense understandings of animal harm in such evocative and creative practice so that we might better grasp human-animal relations beyond the anthropocentric structures of logic and justice (Donaldson and Kymlicka, 2011).

Discussions around farming and farm animal welfare often become two-sided and related to one’s position on the killing and/or consumption of animal products. I will show throughout how one can remain critical of the systemic more-than-human violence caused by the neoliberal farming model, whilst attending to human-animal relationships based on compassion and multispecies friendliness. Large animal vets and student vets – often overlooked in their role as actors within the farming network - are essential in these debates and this chapter works to take them more seriously.

This chapter continues by considering the mutable practices of spatial control on the university farm, and what this means for the nonhuman animals and students involved. It is this infrastructural control, recognised in the relations between the farm’s actors, which aims to increase the productivity of the farm business, ensure multi-species biosecurity and create a particular form of large animal veterinary professionalism. Borders become essential here and the physical divides between humans and animals are seen as a protective force, a site where more-than-human embodiment is almost tantamount to an invitation to zoonotic disease. These boundaries are permeable however and the divides of control/resistance, inside/outside, care/harm, cleanliness/dirt are shown to be in tension. We wash our boots diligently before we enter the farm premises and our waterproof leggings are pristine, only to be covered in shit and everything else by the time we leave.

Following this, the chapter specifically considers how the aforementioned socio-material infrastructures relate to more-than-human empathy in the context of the large animal veterinary education. Firstly, I consider whether it is necessary for veterinary practitioners to place limits on more-than-human empathy in order to proceed through the veterinary education system successfully - this is certainly a viewpoint that I am told

repeatedly by both students and staff within the vet school. In practical contrast to this, and in line with the affective approach to animal husbandry that I propose, I move onto to explore how more-than-human empathy and a speculative ethics is enabled by large animal education through a story involving the violent death of a lamb and through further tales of practical resistance made by animals. These stories are supported by a close reading of Temple Grandin, John Berger and other stories of farm animal love, which help configure farm animal-human relationships beyond that of victim and murderer.

The chapter concludes by reviewing and critiquing the role of the vet in farming as a whole, and the potential futures of veterinary students in this field. It is a contentious topic – are vets complicit in the industrialised violence towards certain species of animals, whilst venerating others? Do they ensure these animals are killed with kindness and live lives free from harm? What role *should* vets play in farming? And what might happen if this is re-framed through a lens of affective animal husbandry?

The economic-legal geographies of large animal veterinary medicine

Situating the university farm

The vet school has a farm, called Stratherrick, situated in the outskirts of the city. I hadn't heard about it before starting this research, but I suppose it makes sense for the university to have a place where students can learn about large animal work and gain practical experience with cattle and sheep. Even though it is very much encouraged, some students do not have farm experience by the time they reach the first year, especially those students from Hong Kong where there is little space for livestock farming. It is funny to think the university has a farm that most people likely don't know anything about, never mind its location.

Stratherrick Farm was bought by the university in the 1950s and currently covers 850 acres of land and houses 90 Holstein dairy cows, 25 cows with calves, 500 Scotch Mule ewes and their lambs and 25 Texel ewes and their lambs. Occasionally there are horses, although horses come under the title of 'equine' and not large animal veterinary medicine.

Stratherrick Farm is actually formally named 'Stratherrick Farm and Research Centre' and aside from being a working, commercial farm it is also a facility for research on farm

animal production, epidemiology, reproduction and nutrition. The research centre contains Home Office designated facilities and is used by 'external clients' within the university, such as research groups involved in animal welfare and ecology. The farm is thus a centre of expertise in large/production animal veterinary medicine, and a range of consultancy services are available for farmers with on-farm problems, whether they be with individual animals or herd-based problems. The farm has its own vet, who is not a member of staff within the vet school but is employed by the university.

Imagine your ewe has been coughing and losing weight and sometimes she struggles to get up. You call your own vet to see if she can help, maybe a dose of antibiotics will help. The vet takes a blood test from the ewe (itself expensive) and finds out it is *Maedi-Visna Disease* which is untreatable and progressive. Your ewe is now worthless but the vet raises an eyebrow. This is an interesting case that doesn't come around too often and so you call Stratherrick Farm to see if you can donate her for research. New treatments might be tried and in the very likely event of her euthanasia, students may watch her post-mortem – there is much more intellectual worth to be reaped from this ewe. You, the farmer, has a look on the Stratherrick website to learn a bit more about the donation process:

Refer an animal

— Information for farmers

- Your vet will contact us directly to arrange for the animal to be donated to the University
- We will then contact you to confirm details and arrange collection of the animal
- It is not possible for animals to return to their farm of origin, although full details of the diagnostic workup your animal receives (including a post-mortem report) will be communicated to your vet



Figure 11 - How to refer an animal

You won't get her back because research animals do not return from Stratherrick or indeed any animal research facility, as per the Home Office regulations. She will live out her life on the university farm as a 'research animal' or be euthanised.

The 'commercial animals' on Stratherrick however are not supported by the same legislation as the 'research animals' and can be bought, sold and transported in line with legislation set by the European Union (EU) (Council Regulation (EC) No 1/2005). Unlike the research animals, these are working creatures, whose worth is measured by their productive capabilities, not their scientific interest. Both these groups of animals, though divided by the policies that structure their lives, are used in teaching for vet students.

In order to understand more about how these legal-economic geographies are negotiated in the distinct spaces of Stratherrick Farm, I spoke with Sean Ferguson, the director of Stratherrick estate and senior lecturer in animal husbandry within the BVMS degree. Learning this information about the animals living on Stratherrick was an experience that unfolded within a tense atmosphere at Sean's Stratherrick office. Our conversation's revelatory nature is central to the story of the university farm.

MD: What kind of animals is it you work with?

SF: Sheep, cattle, horses. Used to be pigs and poultry but not any more. And there's the research animals.

MD: What's the difference with the research animals?

SF: There's a bit more strict limitations on their use so we do have a clear policy where, for example, the sheep, they're... So we do, it's not just the fact they're research animals, they're research animals that are under Home Office license. I don't know if you've come across this?

MD: No, I haven't.

SF: Ok, so the Home Office basically regulate animal experimentation in the UK. Only, animal experimentation needs a license and the reason you need a license is because in theory what you're doing may cause pain, suffering, harm, distress. There's a huge spectrum of things, so for example, if you were doing a research project to take one blood sample, that would still require a home office license if it's under the context of research, whereas if you were taking a blood sample for a diagnostic purpose, that's fine, it's just covered under the vet. So that's the difference.

MD: It's legal.

SF: So it's a very, very different legal aspect underpinning it so because of that, animal welfare very much comes first within that so...

MD: Yeah.

SF: So we decided in conjunction and we ran it through the Home Office inspectors and they were happy with this. Say the sheep I've got, I hold most of the licenses, so the sheep that I've got on research studies here can be used for practical handling teaching but on any one day, they cannot be caught and restrained any more than twice.

MD: Aw, right.

SF: Whereas the normal commercial animals in theory will, have not actually got any defined limits, it might be half a dozen times for example, we set an arbitrary limit on their use.

MD: Yeah, I had some awareness of animal research but not specifically in that context, it's really interesting.

SF: But, and that's not a hard and fast thing, it was a negotiation.

MD: Yeah, yeah.

SF: In between me and the Home Office and it was actually me who was proactive and said, because I suppose, it was down to a resource issue, do we keep or do we buy certain batches of animals purely for teaching or do we, can we, utilise some of the research animals which are here anyway and actually weren't doing very much, for teaching. Do you know what I mean? So you're using less animals overall.

MD: Yeah, so when the research animals aren't doing anything, aren't being researched, like not being handled, they just...

SF: They're just living the life of luxury. They don't get pregnant, they don't have lambs, they're literally, we get paid a fortune by a pharmaceutical company to do some work for them so. So, if they're not on study, which they've not been on now for 6 weeks or two months, they're just sitting in a shed. Still earning us money but should I buy another twenty sheep for the practical classes just when they're just standing in the shed doing nothing?

MD: Ah ok.

SF: So see what I mean? So it was why put in additional resources when there's capacity within the resource base that we've got.

SF interview, p.2

Here then, we learn that the university farm is partly formed through the legal infrastructures of the EU, Home Office regulation and the economic needs of the farm as a business. It operates as a space of animal research, of commercial venture *and* of veterinary education. This sets the scene for veterinary students who, as professional vets, will have to manoeuvre this legislative landscape of animal welfare and agribusiness.

In relation to his animals, Sean suggests that they have to earn their keep. For the commercial animals it is a matter of countering how much they cost to keep versus how much they can they and their products can be sold for at market. For the research animals, the economics are more complicated. Whether the research animals 'work' or not depends upon relations between pharmaceutical companies and the vet school. This work may include relatively non-invasive procedures or may include their eventual death. Outside of being involved in experiments, these animals live 'a life of luxury' whereby they continue to get fed but do not have to produce anything in return.

This economic-legal structuring of the university farm defines animals as producers for human need, be that profit, consumable produce or scientific progress. Following Gillespie (2014), these animals are commodified and subjugated, processes that strip them of their rights and agency. These animals seem hidden and disembodied. My surprise that a university farm existed reveals the distance set up between the human urban metropolis and rural animal outside: "Animals have been so indispensable to the structure of human affairs and so tied up with our visions of progress and the good life that we have been unable to (even try to) fully see them" (Wolch and Emel 1998, xi).

Needless to say, this conceptualisation of animals differs greatly from that of small animal medicine. Large animal veterinary medicine involves certain species and not others: cattle, sheep, pigs and poultry fall under the remit of large animal medicine, whilst dogs, cats, 'small furrries' and reptiles are part of small animal medicine. The differences between 'large' and 'small' veterinary medicine are not formed by size of the animal per se, but rather are created in relation to wider cultural, animal geographies and ethics.

The university farm, at least as an economic-legal structure, specifies the relations between humans, animals, the state and the market. How, though, do these economic-legal structures work in practice? What of the more-than-human relations between control, harm and care in the university farm? Is it possible to go beyond languages of

animal subjugation whilst also remaining critical? These questions will be grappled with in the following section as we enter the farm itself.

The mutable practices of control in large animal veterinary education

The myth of the enclosed system

In order for processes of the university farm to take place, the lives of production animals need to be closely controlled. The above section details how this control is enacted through legislation and gives a small insight into the intimate workings of this at Stratherrick. This section, in contrast, focuses on the small and perhaps more banal practices of more-than-human control at Stratherrick as they occur between architectures, technologies and bodies. I approach the farm as a site of more-than-human ethics as this allows for a particular focus on the affective interactions between material technologies, farm workers, students and animals. Following Greenhough (2012):

“The focus is, therefore, not so much biopolitics but ontological politics, the materialities of human and viral bodies, the socio-material worlds they inhabit and the ways in which they accommodate each other’s presence and agency. (2012: 294).

Despite the aim of spatial control, the farm is not an enclosed system (Hinchliffe *et al*, 2013). The focus on relational interactions reveals how the university farm and large animal veterinary education is co-produced across perceived borders of inside/outside, care/harm, cleanliness/dirt and control/resistance. This means that the ethical landscape of the farm is never truly fixed and that students must navigate it with their veterinary experience – no easy task when ethical debates surrounding farming are often two-sided. Veterinary experience and large animal veterinary professionalism are shown to be created through ‘being with’ the cattle we meet, as opposed to knowing about them. It is an immersive “education of attention” (Grasseni, 2007) into a culture that seems fixed, but which is always leaky. To take account of these mutable practices of control and education, an *affective animal husbandry* develops throughout this section.

Into the byre

I had very much prepared for the visit to the dairy by gritting my teeth and bracing myself for the farming culture I had experienced so often before. It was not that I was afraid of

standing out on the farm, but more that working at this site required restraint and brusqueness, something that feels like an unnatural performance to me. Sean Ferguson, director of Stratherrick, had told me to meet with Phil Baillie, the farm manager. I had my wellies prepped with the leggings outside them and an XL royal blue fleece (I knew what I should look like), and was ready to step in.

It was relatively easy to drive to Stratherrick and I eventually ended up in the right place. I knew what a farm office looked like from experience – concrete, door always open, industrial sized Nescafe – and knew how to park my car as to make sure farm traffic could still move easily. As I approached the farm, I saw some rams and horses grazing, and then some beef cattle. It was February and the grass was crisp, glistening in the low winter sun. For a farm near the city, it seemed an imaginary rural idyll and I felt somewhat at home in this environment, or at least felt like I could hold my own. A conversation in the farm office was overheard and I knew that if I did not just walk in and announce my presence quite loudly, I'd miss out on that essential first impression. Be polite, with a firm handshake and demonstrable practical ability. Do not look lost. Do not look like a townie.

“HELLO?”, I bellowed.

“HI, MEGAN?”, a voice echoed.

“YES, I'M MEGAN, PHIL, IS IT? PLEASED TO MEET YOU”.

(I steady myself for the impending muscular handshake and then I was a part of the fraternity).

Phil was a strong, tall man, who was bald and English, firm and kind. He told me the students should be arriving soon on the university mini bus and he'd be back out to meet me then. I asked where the boot wash area was and he pointed vaguely to the shed.

“THANKS”, I said.

I looked around. Hoses. Old waterproofs hanging. A machine of unknown use or name. A cow, in a pen! I was quite close to it and so counted this as my first large animal encounter in my fieldwork. It looked at me briefly and continued munching and I suddenly felt a pang of excitement when I remembered that my research was all about animals, and

I love animals. I could smell cow shit although at this stage, with just that one cow, it was only vague.

Phil came back out and we walked together to meet the students who had gathered outside the shed at the back. “I’ll leave you to chat” he said and the students heard him. I finally had a chance to talk properly, with their attention focussed on me in a comfortable way. I was wearing a hat, scarf and waterproofs as I knew it would get cold – I’d done this before. A small, cheery girl asked me: “Are you cold or something?!” A ripple of laughter was sent around the group but I was simply grateful of the inclusion. I turned to three other students and asked how they were getting on – they previously had been learning about feeding procedures and were quite bored. They all laughed at their matching boiler suits and how clean they were at this stage. One girl lived on a farm and the others kept horses, unperturbed by the smell, which, in this position near the heifers, was higher on the odour scale. We chatted about how likely they were to get covered in cow slurry, and what the messier jobs would be.

Student 1: “We’ll probably be knee deep in shit y’know, literally”.

Student 2: “Eurgh, I really hate it, it smells so bad. I actually like horse poo, it’s fine.”

Student 1: “Yeah, I don’t mind cow or horse shit, cos you know what they’ve eaten, probably.”

Student 3. “I know, like dogs, who knows what’s in there”.

Even in the beginning of their time on the farm, the students are expecting a high level of intimacy with the animals they work with, perhaps even delighting in the filthy proximity between themselves and the hard-to-control non-human excreta. In fact, these faecal experiences are not expressed as disgust per se, but as a measure of how much one was suited to the veterinary life. There is no way round it – you cannot remain ‘clean’ here.

Phil stood at the top of the group and gathered everyone round to say that he was going to take us through the life cycle of a dairy cow by touring us along a certain route round Stratherrick. Each new area we entered enclosed a particular stage of the dairy farm process and each stage was marked by a particular bovine body, defined by its stage in the life cycle. This enclosure and division of animal bodies by agricultural technologies

facilitates the emotional, embodied and reproductive control of the cattle, which in turn provided the farmers with confidence in the herd's health and profit. For the students and I at this stage, the cow seems to be part of a process, a cog in the machine.

*

Dairy farms in Europe and North America have developed to house dairy cattle almost exclusively inside, with the occasional period spent out on the grass. The image of black and white cows against a lush, green pasture is no longer common. This is often considered a positive for animal welfare as, being inside, the farmers and managers are better able to monitor their herd, to notice health problems and provide almost absolute control over nutrition. Seasonality is perhaps a less defining aspect of indoor dairy farming – cattle are no longer quite so dependent on good grass and weather to raise their calves when they are kept in temperate conditions inside the byre. As a result, calves can be born all year round and the process is less restricted by 'nature'. This is the context in which the dairy tour of Stratherrick begins.

*

We started by walking into the byre where the calves were kept. They were the youngest cattle here, a number of weeks old. There are squeals of glee as we walk in and see the tiny, tiny calves for the first time. They are precious and I almost feel like crying just by looking at them with their big, anxious eyes and wet noses. Each has their own pen with a whiteboard on the wall behind them explaining their statistics such as age and weight. Phil stands next to one and the calves all reach out their heads – I don't think I know of a more apprehensively inquisitive animal than a new calf. Phil tickled its nose and the calf suckled on its finger, eager for something. We are told these calves are taken from their mothers at six hours old and fed colostrum from a colostrometer³¹. The reason calves are taken away from their mothers at such a young age (i.e. immediately) is so that the calf can be fed straight away with quality colostrum and does not need to be able to stand in order to suckle from its mother (Beever and Bach, 2016). The calf is perhaps suckling then, because it doesn't know what else to do at this stage.

³¹ Colostrum is the first milk from the mother which contains necessary antibodies and nutrients calves need to develop immunity and kick start good health. A colostrometer is an instrument used to measure the quality of colostrum from the mother in order to feed to newborn calves (Beever and Bach, 2016).

This statement proves divisive amongst the group. Some have hands thrust stoically in their pockets whilst others perhaps less farm-experienced, sigh, gaze compassionately at the calves and ask why. I knew of this practice before but it is another thing to see these estranged animals reach out for affection. My dad told me that the mothers bawl for days when they are taken away from their young. Maternal instinct can be used to keep female creatures in their place (a mother gives a unique form of care not possible from others) and can be over-emphasised as a physiological and hormonal behaviour (it is just biology, not real feeling). Beyond these maternal dichotomies, there was an intensity in the atmosphere of these pens, a thread of cruelty that ran through what felt like a weary acceptance that this was just the reality of farming.

We all watched the little calves for a while in their individual pens with their individual statistics. I start to wonder how much they interact with their neighbours. Phil says this method of separating the calves is more fair though, as they become less attached to one another. I know that farm work is harsh but I have to go along with these explanations, as do the students. Some students fawn over the calves (I wish I could) and tickle their noses and photograph them, some are clearly not bothered by this workaday scene.

I don't aim to sound saccharine here or necessarily abolitionist in my stance towards dairy farming. My job is not to select an animal rights point of view (Regan, 1975) or propose there is nothing wrong, but rather it is to extend the ethical landscape beyond the two poles of pro- and anti-farming. It is through the *picking apart* of the lives of dairy cattle that it is possible to see how farmers, vet students and cattle interact to create the notion of the dairy cow as a producer and product, an approach to animal ethics and care more in line with Donaldson and Kymlicka's (2011) political zoopolis and Law's (2010) sensitive take on the heterogenous practices of care and killing within biosecurity. This means, vitally, that the control of cattle via assemblages of architectures, technologies and cultures is not watertight. These boundaries – material and cultural - are permeable because some people think otherwise and some cows stick out their tongues at the audience.

Within this tour, there is very little organised physical interaction between the cattle and the students and so we are made to watch them as a collective herd. The cows very much know we are there and glance at us showing the whites of their eyes. They are not afraid but hesitant, tip-toeing forward then rushing back as we approach them in return. Such weighty bodies they carry around on legs like spindles. En masse, they have a

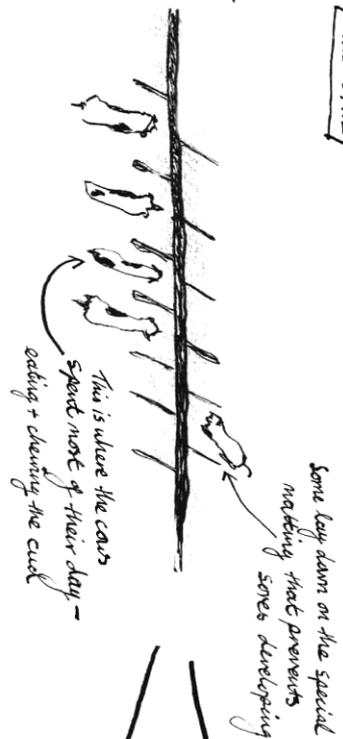
collective humorous character with their jittery movements and indecisiveness, but also an imposing strength. Constantly, we were wary of our bodies as one had to be when working with such large animals. Despite their size, the cows had extraordinary haptic capabilities and speed. The steel gates and cattle crushes³² designed to keep cows enclosed for both human and animal safety sometimes worked against vets. A cow's weapon is its weight and there are numerous tales of vets and farmers being crushed to death against byre walls. Cattle, especially mothers with calves, are prone to charging behaviours which can kill weaker members of the herd as well as humans (Grandin, 1993).

³² A cattle crush is a livestock management device involving a metal yoke that the animal places its head in. The yoke then safely closes around the animals' neck to keep the animal in place. This allows vets to carry out procedures on the animal without it moving (Health and Safety Executive, 2018).

THIS IS WHERE THE DAIRY COWS SPEND MOST OF THEIR LIVES



TO THE MILKING PARLOUR



Some lay down on the special matting that prevents sore developing

This is where the cows spend most of their day - eating + chewing the cud



Some cows are very inquisitive + come out of nose to see what we are up to



UDDERS HEAVY WITH MILK

is this what we are here for?

In the byre, cows could use the rotating cow brush by rubbing their bodies into it as + when they washed - it looks like a car wash

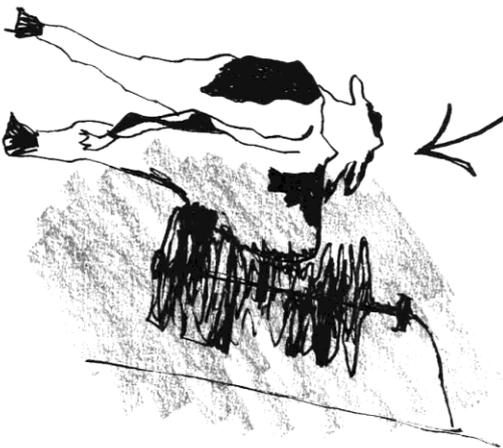


Figure 12 - Cows in the byre

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There is another tension to investigate in relation to this more-than-human control here. Whilst so far the careful steering and containment of cows has been in order to maximise production, provide immersive education and attend to the state sanctioned requirements of Biosecurity with a capital B, containment does not eliminate risk but can instead keep it on the inside. Following Hinchliffe *et al* (2013): “That which is enclosed may be subject to threats from within” (2013: 535). Safety cannot be presumed through the spatial control of the cows, which is little more than an illusion, albeit a strong, comforting and disciplining one (Holloway, Bear and Wilkinson, 2014a).

The notion of mutability (after Hinchliffe *et al*, 2013; Greenhough, 2012) helps to analyse what is going on during the dairy tour. The experience is at once secure and impossible to contain. Sensory surprises and affective resonances potentially meet everyone at every turn meaning Phil cannot teach one flat and exportable curriculum. We get the feeling he knows this through his teaching style: loud and open, he portrays experience as a recognition of his own role in the mutable relations of the farm. He is a *manager* but his skills related to teaching the farm come from his abilities to adapt. This “allows non-coherence to be dealt with by striking imperfect, provisional and adaptable balances” (Enticott, 2012: 155).

In writing through the connections between cattle and the technologies that are meant to control them, it is essential to focus here on Holloway and Bear (2017) and Holloway, Bear and Wilkinson (2014a; 2014b). Working specifically with automatic milking systems, Holloway and Bear (2017) discuss how this changes human and cow (inter)subjectivity and agency. Although the context is somewhat different (the milking system on Stratherrick is not automated), this approach to reconfiguring the cows as ‘active agents’ within farming infrastructures is important. The cows agency to work with and against technologies (gates, crushes, head collars even) means they are ontologically a part of the relations which allow them expression and which also exploit them. Focussing on cow agency then does not allow ‘a way out’ of the ethical mire of farming but draws attention to the intimate politics of “the embodied human and non-human experiences, and the discursive frameworks, surrounding these changes and the human-animal-technology co-productions involved” (2017: 217). *This* is where affective animal husbandry is situated.

*

We get to the main byre where the milking heifer cows are kept next to one another in stalls. These cows are in their prime and are milked twice a day. The milking shed is to the side of their stalls and they are manoeuvred there along a specially designed concourse which aims to provide as little stress to the cows as possible. Cows being cows, they will willingly follow each other into the milking shed, head to tail.

Phil again instructs us to watch the heifers and judge their bodies by looking at their coat, weight and eyes. The coat should be glossy like their eyes and bodies should be thin as much of their energy goes into the production of milk, not muscle. They have jutting, narrow hips and heavy udders. 'Don't worry if you don't know right now', Phil tells us, as it is a skill based on experience and knowing the cows as a herd. This is a form of knowledge different from the touch-based skills of the anatomy lab, although it is still a haptic engagement. Whilst in animal geographies there has been rightful criticism for overlooking the individual animal (Bear, 2011), there is a particular embodied skill in sensing the movement of animals and acting accordingly.

I realise now, there is little clear explanation throughout this farm tour - it is about feeling the farm for oneself and as a collective of learners that is important. Phil is right in saying it is all about 'experience', that ubiquitous and ambiguous phrase of the vet school. This is the phenomenology of veterinary work Phil teaches, with a focus on being with rather than knowing about. Following Ingold (2000) and Grasseni (2007), the farm tour thus provides one way into the taskscapes of 'skilled vision' of large animal veterinary medicine for vet students. Not only does Phil enable a tactile enskilment with cow bodies, but through the tour he invokes a particular place-based history of animal husbandry that encourages care for the system as well as the individual.

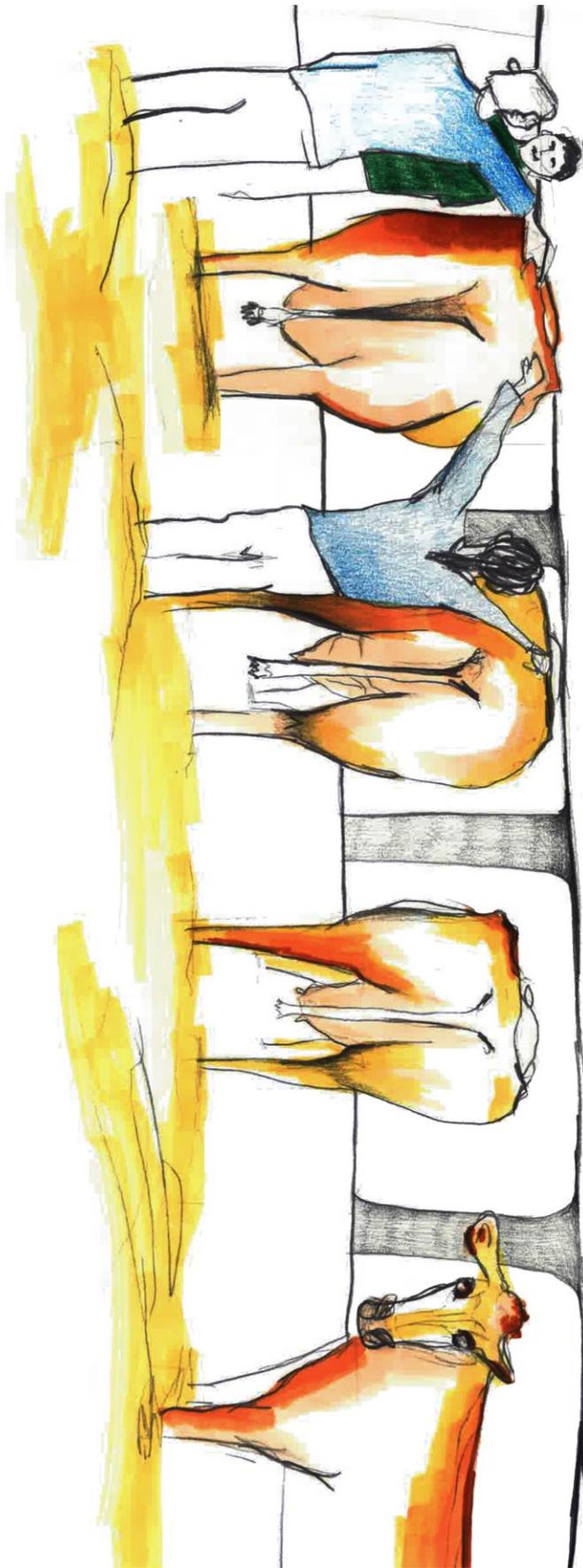


Figure 13 - Don't worry if you don't know yet

Care in the midst?

Whilst so far we have seen the harsher side of control at Stratherrick, there is care within these possibly cruel practices. Phil riffs when he talks about farm experience and tells the class that the most important thing is attention to detail at all stages. Firstly, a careful look into the milk yield statistics on the computer connects Phil to the welfare of the herd as these statistics are the cattle in data form. Phil then looks at the different parameters of welfare to think how his data could be improved. More food? More rest? Yes, this is an affective animal husbandry mediated by technology and the cows are seemingly objective data, but it is care for a system within which the cows are central. Aside from this, there is a different kind of care, a more intimate one where the word 'love' is breached.

This other kind of care Phil mentions is characterised by patience with the cattle, a countenance which comes from his love of the herd and a respect of individual needs. I witness his affinity with his cows which some of the students try to mimic – a calm voice when speaking to them, a firm pat on the rump, sheer delight at their bovine behaviour he knows so well. It is more awkward from some of the students though, and the apprehension is matched by the cow who flashes its white eyes again. The cows need their rest after milking, Phil says, and this is the most important part of the dairy process. Like a benevolent boss, Phil says they must be rewarded with recovery after milking before the stress of working again. Phil makes sure to tell us that each animal is an individual and must be treated as such.

He voices to one particularly boisterous cow: “See this one, she’s always so noisy, eh? Huffing and puffing all the time!”.

She comes up closer and sniffs him as he tries to talk to the class. She shakes her head up and down and edges closer and closer, tentatively winding him up. Phil is interrupted from his talk:

“Are you trying to get in on the conversation?! You’re so nosy!”.

This happened a few times, the comedy of the situation increasing as she got closer and nudged him again and again.

“Oi you, I’m trying to talk!”. He clapped his hands this time and she backed off whilst the rest of us chuckled at her being the disruptive one in class.

Back to work

Then we get back down to the thick of it - work. The vital notion again that this is a *working farm*. Yes, it was clean but the shed where the cows slept smelt especially bad. It was the urine in particular which caused it, a kind of acrid ammonia burning our nostrils. Maybe you get used to it? We had to stand there a while whilst the cows that had previously been milked all trotted past with the relief of lighter udders. Each cow paused with confusion when it spotted our group – this was not part of the cow’s routine. A slap on her rear and she was away again. We turned after that, into the milking parlour.

I was surprised. This was a state of the art affair and I expected something more clinical. Instead, the parlour seemed to be cramped, with the cows angled against the wall in order to get in as many as possible, chomping on the food provided. We were in the black box, the part of the process that most people do not see nor want to see. In goes cow, out comes milk, except here in the mess of the milking shed when so much more was involved. Did the cows know what was happening below, where the metal tubes sucked their udders of 30 litres of milk a day? How willing were they? It is the case that “perhaps, subjectification is something which is done to cows, rather than something they do to themselves” (Holloway, Bear and Wilkinson, 2014: 134)? There is, also, a potential comfort in the twice daily habit which the cows may relax into. Additionally, from a veterinary medical perspective, the cows need to be milked as not doing so increases the risk of Mastitis³³. (Alas, if the cows were not made pregnant to produce milk, they would not need to be milked in this fashion, as they would be suckled by their own calves).

I understand, following what I was told by these experts in the field, that this is probably the most welfare-friendly way to milk cows to make money and research, but this did not calm my discomfort. Over time, I figured out this unease was set in motion primarily by the smell of burnt milk. It made the air stagnant, congealed, stuck to the bottom of the pan. I was glad to get out. When we were on the other side – where everything was clean and distant from the parlour, Phil talked to us about the opportunities to sell the milk to the university to make cheese and yoghurt.

³³ Mastitis is infection of the udder, which is very common in dairy cows and can cause significant economic loss to the farm (Bradley *et al*, 2012).

Controlling more-than-human empathy: a necessary step?

Conversations about empathy in large animal veterinary education

Whilst spending time in small animal education such as in lectures, communication skills classes, the Small Animal Hospital and everyday discussions about the topic, empathy was ambiguous, but it was *there*. It was rarely considered too ‘touchy-feely’ and almost everyone I spoke to and interviewed had some personal understanding of the term. Empathy was seen as woolly, yet there was something about the term that was considered important, even if no-one could pin down exactly what they meant in words.

It was a different case in large animal settings and conversations, where I was told it was necessary to consciously and deliberately limit one’s empathy for nonhuman others. This was not something distinct for vets but involved non-veterinary teaching staff too such as Sean, the large animal scientist in charge of Stratherrick. For example, to breach the subject of science and care as an affective tension, I asked him the following:

MD: As a large animal scientist, would you consider yourself an animal carer?

SF: No.

MD: Em...

SF: An animal scientist is the closest I would say.

SF interview p. 5

This short, yet emphatic exchange sets science and care in opposition – animal science is done by the scientist whilst the caring for animals is done by *someone else*. Whilst there are specific ‘animal care technicians’ employed at the vet school, this example suggests a discursive division being set up between science and care, something which informs later discussions about empathy.

Is it thus the case that students are being taught to be wary of, or even to put controls on feelings of empathy in large animal settings? How can empathy be re-considered in the physical and discursive spaces of large animal veterinary education? Perhaps as an *affective animal husbandry*?

Firstly, it is useful to lay out what two important members of staff had to say about empathy in relation to farm work: Sean Ferguson, who features heavily in this chapter and Sam Earley, the lecturer in animal welfare and ethics, first mentioned in the chapter about the lecture theatre. Both are central in setting the topics for study in their relative sub-disciplines in the BVMS degree, and so have a good understanding of the themes that are evoked in the curriculum.

In my interview with Sean, I asked him whether he perceived any differences when it came to empathy with small, pet animals and large, production animals. We talk about the role of vets and farmers in his experience, although Sean is not trained as a vet himself. He is, instead, maybe best described as the chief academic-farmer at Stratherrick. I had breached the word 'empathy' earlier in the interview and he was not surprised given he knew the issues I was wanting to discuss prior to sitting down together – he warned me he was not well-versed talking about *these things*. Like all of my interviews, I was firstly given the 'party line' on the matter.

MD: So do you think you could have empathy for a cow as the same way as for your pet dog?

SF: (pause) I don't know... I think... Yeah, I don't see why you couldn't.

MD: Cos if the cow wasn't in that system (*of farming*)...

SF: Yeah, I don't see why you couldn't have.

MD: If it was part of farming, do you think it would be difficult, do you think empathy could ever get in the way of being able to produce things?

SF: I think the difference is, you can have empathy but to a farmer it's still a business and sometimes your business head has to override those feelings.

MD: Yeah.

SF: Or else you can't put food on the table, that's what it come down to. But you often will find farmers who really dislike making certain decisions because of that (*empathic feelings*), but they know that for the business, that's the right decision.

MD: And you've just got to work with them (*as a vet*)?

SF: Yeah.

MD: Would you say you convince them or...?

SF: Sometimes, but a lot of the time no, they know, they just know.

MD: Yeah.

SF: Or sometimes, they'll say to you, so sometimes the vet eh, eh, will be trying to encourage a course of action but the farmer might, for all he might want to do it, he's the only one who knows his business and financial situation really and he'll maybe make that decision of no, I don't want to continue (*with the animal's life*).

MD: Do you think that would cause an issue then if the vet...

SF: If he's professional then it shouldn't cos the vet should understand that ultimately, the animals belong to the farmer and that it's a business and the vet might not like it but he should go along with it.

MD: Yeah, so the animal can't come out of that ownership thing?

SF: No, no. That's something that a lot of students have a lot of difficulty with, because it comes up when we do the communication skills, you know, and it doesn't matter if it's a dog or a cow... It's definitely treatable, often the students can't then understand why that wouldn't happen and that they would have to find a way of rehoming or something and you just have to tell them, you can't do that for every animal that comes through the practice door every week.

MD: Yeah.

SF: We don't live in a utopia, there's no room in the shelters, so ultimately if someone comes to you and asks you to put their dog down, you have to do it.

MD: Yeah.

SF: Because if you don't do it and they just let it out of the car in the middle of the countryside, how ethical is that? What's that doing for its welfare?

MD: So they have to learn that early?

SF: Yeah they do, cos sometimes they come in with the James Herriot view of the world, that everything's wonderful about working with animals and you do have to make extremely difficult choices at times. Even here, I have to think... do we prolong this? Even if it's, even the vets will say, I don't know and then ultimately I make the call on whether to prolong (an animal's life) and I don't like doing it.

MD: It's quite a weight of responsibility then.

SF: Yeah. To be fair, the one difference here compared to a normal farm that arguably, we will give the animals a bit more of a chance than they would get on a normal farm. I have done surgical interventions here that would never get done on a normal farm and in a sense, I don't pay for it.

MD: Exactly.

SF: I pay for some of it but not the full amount if you know what I mean and we do it as very much a teaching experience as well so there's animals here I've... That are recovered fully from things that in a normal farm, they would've got shot.

SF interview p. 9

Here, Sean is suggesting that two things come to place limits on more-than-human empathy. Firstly, the idea that 'the farm is a business' and therefore decisions are based on an economic rationale. The primary decision that has to be made as a farmer is 'can I afford treatment?', not 'how can I save this animal's life?'. Secondly, is the notion of animal ownership, a contract that Sean shows can never be breached. In contrast to the first point, the idea of animal ownership is something that applies to small animal veterinary medicine as well as large animal veterinary medicine.

Both of these points suggest that large animal veterinary education (and the profession as a whole) has to work to fit into these ideas and sustain them. Sean alludes that good, professional vets 'just know' that the right answer is to go with business and animal ownership. This 'just knowing' or *experience*, is something that, as I have shown throughout this chapter, is a situated, cultural knowledge, developed over time and in place. The division between rational science and care suggested in the start of this section is seemingly upheld.

This is not a multi-species culture which would be supported by animal geographies inflected with ideas ecofeminism (Collard and Gillespie, 2015) or anarchism (White, 2015). It is clear that capital-centric, patriarchal structures (Sean refers to vets as 'he' continually) fuel the concept of animals as workers, producers and products, and ingrain the objective notion of animal ownership. *This* is what puts limits on empathetic relation between student vets and animals.

It is not the whole story however. Whilst I am fully supportive of the critique that neoliberal relations between humans animals are damaging, to say all the efforts of farmers, vets and student vets are *wrong* is misleading. As Harber (2010) suggests: "... at a macro-level care can simply be interpreted in terms of economic necessity, care at a micro-level cannot" (2010: 148).

Keeping with the thread of ontological tension that runs through this thesis, Sean hints at the ethical difficulties students face as they come to terms with farming realities. These changes are not epiphanies, but are wavering ethical tensions between what students feel is acceptable and what is not. The farming landscape is never set before each student enters it: there remain possibilities for more-than-human empathy.

Sam, in contrast to Sean, very much had answers for the question of empathy – answers that were thoroughly researched and referenced. Sam's research centres mainly on beef cattle welfare but when she took up her role as lecturer at the vet school, Sam had to learn animal and veterinary ethics, in order to teach that as well as animal welfare. Sam was very reticent to speak about anything that was not backed up by academic research and, in a way, that she seems to cite her speech. Occasionally, other things slip through, but this *other, more affective information* is hard to access. The interview was held in Sam's office at her request and thus the interview remains somewhat formal. I felt like a student called in for assessment.

MD: Em, so do you think empathy can be taught? Human empathy for animals³⁴ - do you think that can be taught?

SE: I don't know, that is a really good question, we've discussed this in the veterinary side and it was actually a question that was asked to a colleague of mine and he said, we can teach students to *sound* empathetic.

MD: Yeah.

SE: So we can teach them communication skills, they can come over to clients with empathy and what we do is we try to talk to them and say try to talk to this person as if they were a friend of yours so we try to get that connection. If they (*the client*) are going through a tough time. Not in a massively over familiar way y'know but, what we'd say to a friend here, say that to this owner. So we try and get those sorts of things going... but that's

³⁴ Although more-than-human empathy is not the same as 'human empathy for animals', this is how I adapt complex academic language for my interviewees. Alongside this term, I use 'animal-focussed empathy' in interviews. All are a 'lay' version of more-than-human empathy.

more about empathy for humans. Empathy for animals...I don't know, I honestly don't know. I think there may be some other research on that. I definitely think some people are more empathetic than others and I think that's probably reasonably innate... Em, I think some people get into veterinary because they love animals and they have a strong empathy with animals and always have had. I think other people get into veterinary because its a profession that they're interested in, they're interested more in the scientific, clinical perspective...I also think, and I'm sure you're aware, there's work by Liz Paul, down in Bristol, that shows that empathy decreases in vet students throughout the vet degree.³⁵

MD: Yeah.

SE: So whatever where doing in veterinary medicine, that's quite an old paper now, but whatever we're doing in veterinary education, we're decreasing empathy. But I think that's probably just hardening.

MD: Yeah.

SE: And a necessary, slight withdrawal from empathy, because otherwise, its too difficult to do the job.

MD: Yeah, I would...

SE: There's a constant tension I think in veterinary medicine, between really liking and loving animals and wanting to help them and having to do things which aren't very nice towards animals and having to be engaged in activities and professions and contexts like farming that really don't promote animal welfare very often and they certainly don't promote animal interests. And that's a constant tension and that's why I think it's tough being a vet.

MD: Yeah, I was coming round to think that maybe part of the problem with it in terms of what it means for animals and also what it means for the health of vets themselves is that everything to do with medicine really is quite irrational or it is quite uncertain and you have to apply certainty to this and you have a confidence in your decisions but also in what is expected of you, professionally from the client.

SE: Mm-hmm.

MD: And then, that almost, kind of like a repression of it, might be an aspect in their lack of wellbeing.

SE: A repression of their own actual feelings? I think so, I think so again, if you really think animals shouldn't be killed for food then you really shouldn't be a

³⁵ Paul, L. and Podberscek, A., 2000. Veterinary education and students attitudes towards animal welfare. *Veterinary Record*, 146 (1), pp. 269-272.

vet, or at least a large animal vet. But Bernie Rollin, a famous veterinary ethicist.

MD: Yeah.

SE: I'm sure you've heard of him, he, he said there's a fundamental issue which is this clash between one's reasons for wanting to get into animal work, as he calls it, and what one is in fact being asked to do and I also don't know whether people who decide to do veterinary, well, they are actually careful in that they have to do so many hours at the vets, so they know what the job is... because I think a lot of the y'know, the cliché is like the fifteen-year-old girls who go, 'oh I want to be a vet' and they don't actually know what that job is, that they'll have to kill things, that there will be unsavoury aspects to it as well. Em, so yeah I think that's very problematic. I think for me, the RCVS³⁶ thing is not a big deal. I think those are really basic principles and that most, most people don't find them hard to follow. There's not going to a lot of cases where you're moral dissonance will come from the fact that you want to do something but the RCVS doesn't allow it.

SE interview p. 11-12

For Sam, empathy is a demonstrable skill which is necessary to fulfil the needs of clients and not necessarily their animals. It is something that can be taught through communication skills classes and is seen when the vet shows friendliness to the owner. In this anthropocentric conceptualisation, empathy can be thought of as an additional emotional labour to be performed within the contract of animal ownership and the vet-client relationship.

On the topic of a more animal-focussed empathy, Sam tells me that research suggests students' empathy decreases over time during veterinary education (Paul and Podberscek, 2000). Aside from the outcomes of this research (that students believe in animal sentience and 'emotional empathy for animals' lowers as they move through their education), what is interesting is how empathy is perceived to be *measurable*. The questionnaires used in the study are based on an 'animal empathy scale' which:

“consists of 28 statements concerning animals which suggest either empathic or unempathic sentiments for example, 'It upsets me to see animals being chased by and killed by lions in wildlife programmes on TV', 'People often make too much of the feelings and sensitivities of animals' (2000: 270).

³⁶ The 'RCVS thing' that Sam refers to here is the Royal College of Veterinary Surgeon's Code of Professional Conduct, a document which must be adhered to when practising veterinary medicine in the UK. It is enforced by the Royal College of Veterinary Surgeons (RCVS), the statutory regulator of the profession. Please see Chapter Four and the Glossary for more information on these terms.

Although the study aims to tackle empathy in veterinary education, the research and Sam's referencing of it, shows empathy as a cognitive skill - an ability to think through one's feelings in relation to animals. These feelings can then be designated as either 'empathic' or 'unempathic'. In a way then, approaching empathy in veterinary medicine through this scientific method plays a role in the control of empathy: by ordering empathy in such a way, it *allows for its control*.

Like Sean, Sam believes this 'hardening' and 'withdrawal from empathy' is necessary so that vets can do their job. This is especially important in 'contexts like farming that really don't promote animal welfare very often'. Sam distances the role of the RCVS Code of Professional Conduct in causing ethical unease within students and instead states that what causes this unease is the dissonance between students' feelings about animals and what the profession is asking them to do. At best, this underplays the point that students are already relationally a part of RCVS network and the professional culture through their involvement in veterinary education. At worst, this statement justifies emotional hardening in veterinary medicine and puts pressure on students as individuals to adapt.

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A note on emotional boundaries: I am not proposing that an endlessly open, utopian form of more-than-human empathy is the answer to the control of empathy. What I do wish to discuss is a more critical, affective and relational approach to more-than-human empathy which allows for a closer understanding of the sensibility. Sometimes empathic boundaries are important but in the case of this discourse, it is essential to see how controls of empathy can engender a wider culture of emotional resilience in a caring profession.

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Summarising these interviews, I suggest that students are discursively being taught that empathy should be controlled in large animal practice. This is because there is no other alternative offered to them - the neoliberal structures of farming and animal ownership are shown to be too strong for a student vet to overcome. Additionally, the construction of what an animal-focused empathy is - a cognitive ability to review one's feelings about animals - plays into this notion of emotional control. Empathy as a concept is being set in opposition to a detached, neoliberal veterinary science through these educational discourses and practices.

To draw upon Harber (2010) and Law (2010) again, this doesn't mean that more-than-human empathy isn't there. These interviews provide the evidence that a more affectively-attuned approach to large animal veterinary medicine is necessary. Below is one such story of affective animal husbandry.

Between care and harm: Laura kills a lamb

This was the second time I was speaking to Laura, a third year student vet from the United States. It was a good interview because Laura did not hold back on how she felt about her time as a vet student and was able to tell me stories which struck her as somewhat uncomfortable, even wrong. She described herself as angry, although she did not go into what she was angry about. Laura struggled with the human side of veterinary medicine and found it hard to keep patience for clients who were rude or took part in poor breeding practices, for example. Often, she told me, it was the sheer social effort of meeting new people every day and having to be polite to them that made her job as a student vet difficult. Like many students, Laura was in it for the animals and did not find it hard to imagine a more-than-human empathy. I asked her about Sam's claim (backed up by Paul and Podberscek, (2000)) that empathy decreases over the time one studies to become a vet:

LH: I don't know, I think I can see where, for me personally, if I lost empathy, it would be because my spirit would be like beaten down by clients who don't want to do things for their animals y'know, and after a while I may as well just be like, 'well fine you don't want to do it, whatever'. But I feel like after so much rejection or so much resistance from owners that, after a while, maybe y'know...

MD: And if you see other problems within animal stuff like breeding and horrible genetics stuff, I don't know, it annoys me and I don't even have to do it.

LH: Yeah and you can't like say anything to like the breeders, you can't be like 'you know what, what you're doing is not great' (laughs).

LH interview, p.3

Neither of us seem particularly sure about these issues, but we try to work it out together. We then move on to her time on a Welsh farm, where Laura spent a few weeks lambing – this was not clinical extra-mural study (EMS) but is necessary for vet students so that they better understand how farming works.

MD: So how did it differ working with farmers as opposed to small animal clients?

LH: I didn't nearly have to put on as much of a show for them as I did for... I was pretty much my whole self, I didn't have to act like really smiley and stuff the whole time, it was no bullshit, they just say it like it is, which I really like.

MD: Yeah exactly, it's funny you say that, obviously there's the small animal performance but I feel like every time I was on the farm, I had to make sure I was a bit stronger you know, like.

LH: Yeah.

MD: Say you're going to pull up a fence or something like that and you don't do it strong enough, I always think they think I'm really weak.

LH: Yeah.

MD: It's hard to explain, its kind of like the whole no bullshit thing. Do you have like coarser chats and things, just not so worried about being polite and they already know a lot themselves?

LH: Oh exactly, yeah, in, at that point, they might ask me about something they didn't know about, like a weird case or something, they'd be like why is that and I'd be like eh I don't really know, I'm a first year!

MD: Yeah, sure.

LH: But like as I've been going back, I've obviously known more, but I mean they do know a lot. Or they have their routines like if a ewe was down, they're going to inject it with this y'know and not really care why, they're just going to do it.

MD: Yeah so how does killing animals work there? Cos it is euthanasia I suppose but its also just killing and death, so how does death work on the farm?

LH: Well they for the most part, would just let things die if they were going to die.

MD: How did they know they were going to die?

LH: They just couldn't get back up or were like down for too long or they were just sickly and off their food. Those ones they would just let go or they would try and inject and if it just looked a little bit off they would inject it³⁷. But as for actually killing things, they never actually killed anything. I mean, last

³⁷ Laura is referring to an injection to save the animal's life (perhaps with antibiotics), not a lethal injection.

year I had kill a lamb because it had an out pouching in it's stomach that had some organs in it and the son wanted to open it, so he opened it and then it all just fell out and I said you can either take this lamb to the vet and spend money on it to save it or you can kill it, and they were like, I guess we're gonna kill it.

MD: Mm-hmm.

LH: But they had never killed anything before so they didn't know how, so they tried to do it but they couldn't do it, so I had to do it.

MD: Oh ok, what did they do?

LH: So I told them they could like hit it really hard on the head with something which the son didn't want to do and then I said well you could swing it really, really hard against a pole or like a cement wall. And he tried against a pole but didn't do it nearly hard enough, so it was really bad so I ran out there and grabbed it from him and just like...swung it so hard, I don't know...

MD: Eeugh.

LH: It was so horrible, I had nightmares about it.

MD: That's really grim.

LH: Yeah.

MD: Um so, could they not have injected it with something? *(to kill it)*.

LH: No, they don't have stuff like that so.

MD: Oh ok.

LH: Cos they can't carry the full stock of drugs and stuff.

MD: And do they just burn them and stuff afterwards?

LH: Em, well they had a couple of... I don't want to call them crates, more like big plastic bins that they had weighted down and they would put any dead ewes or dead lambs in and I don't know what they did with them after that... I guess they would have them burned, like taken off and burned or do it themselves.

MD: Or like the knackery.

LH: Yeah.

MD: Cos I was thinking, there aren't really any laws for these kinds of things, I thought it was just like vets but its like policemen too (*who can kill animals*).

LH interview, p. 9-10

What do I do with this uncomfortable embodied tale about the in-betweens of life and death on the farm? Is it a clear-cut story about the lack of empathy in large animal practice? Or, by attending to the specificities of site, can it be considered a discomfoting more-than-human empathy? At the very least, this conversation demonstrates the close relations set up between farmers and vet students, as opposed to the vet student advising from the outside or being advised by the farmer themselves. Violence, death, care and empathy become wound up in strange ways here, making it difficult to tell one from the other.

There is also something in the telling of this story and the quality of it's narrative that tells us something about empathy. It is an experience that lingers in Laura, a nightmare which she can recall in fine detail. The sequential logic of the story is a cold veil over its emotional impact and relevance to how vet-large animal relations play out. Laura just got up when she was needed and did her job, which was to kill the lamb quickly. It wasn't a gentle injection of lethal drugs which killed the lamb, as it would a pet dog, but a deathly, swinging bludgeon. Is this violence? I imagine Laura's rough hands clamping the lamb's hind legs, her horror at the lamb's guttural state transforming into the almighty force which ended it's suffering. No, this is not violence, not at this precise moment, but more-than-human empathy, even if the lamb was tossed in the rubbish afterwards.

Concluding remarks

Contentious ethics and affective animal husbandry

What is being asked of a vet student when it comes to the large animal section of the BVMS course and what are they to do about it? This is an ethical question that gets to the heart of more-than-human veterinary care and characterises this chapter. This is not a question commonly asked within the BVMS course but is one that I have raised in order to investigate the site of the university farm using a more-than-human geographical approach.

The university farm is shown to be a site which creates a distinct ontological politics of control. It manages to run as a agribusiness and as a place of research because of these spatial, technological and emotional controls. As a result, the animals of the farm are formed as producers and as products, carefully managed and exploited for greatest profit and teaching use. Students are shown to have to adapt to this pre-existing ethical terrain, to control their empathy with animals and immerse themselves in a particular agri-cultural geography.

In taking a critical, political and animal-focussed stance as I do, it is easy to see this as a landscape of transhuman harm. A land of exploitation, violence and hardened emotional resilience. This is a truth – there is an unequal balance of power between the species and modes of knowledge on the university farm, and the vet school is working to maintain this. Student vets are being asked to be complicit.

However, my approach is also a site-based and more-than-human approach, which allows other sensibilities to be acknowledged within the university farm. This is not about providing a counter-point which says ‘actually when you look at it *this way*, everything is fine’. It does not excuse harm. It is a speculative re-working of the farm that takes seriously the ethical tensions and mutable practices within the chapter. Students are at the crux of this tension as they live through the unease of working on the farm, often having to do things to animals they otherwise would not do. To just call this ‘harm towards animals’ undermines the difficult ethical work that students do. Animals, on the other hand, are not just passive receivers of large animal veterinary work, but are a part of farm as a socio-material assemblage. This also tells us something about the development of embodied skill in a distinct, place-based taskscape: like ethics, more-than-human veterinary skill is not replicated the same in each student to create a standardized large animal veterinary medicine. Instead, this enskilment is mutable: “In other words, it is through instability – the small differences upon which continuity depends – that craft and skilled practices gain temporal duration and spatial extension” (Patchett, 2016: 415).

Affective animal husbandry, a thread drawn through this chapter, has draw attention to how large animal-vet student connections are made not just through the overarching infrastructures of the farm, but through more-than-rational, affective relations that seek to create “as well as possible worlds” (Puig de la Bellacasa, 2017). To quote Sean again, ‘we don’t live in a utopia’.

7. Inside the Small Animal Hospital

Introduction

Placing the Small Animal Hospital within the wider veterinary profession

Within the vet school as an institutional educational facility, it is in the latter stages of a vet student's undergraduate degree programme that time is spent in the Small Animal Hospital (hereafter SAH, or hospital). Students have limited flexibility in their degree structure until their final 5th year of study when the timetable is split into multiple 'blocks' with each block around 2 weeks in duration. Students at this stage can choose how they wish to populate these blocks. Some students may have a particular interest in large animal medicine and so spend much of their time within farm practices. Others may be keener on research and so carry out blocks in pathology labs. Reflecting wider trends within veterinary medicine, the largest proportion of students dedicate time to small animal medicine. The Small Animal Hospital is a place that signifies many things to students: the pinnacle of their veterinary careers to date; a significant step closer to full-time clinical work; and, their ultimate development into veterinary professionals.

The Small Animal Hospital is a large building on the outskirts of the vet school estate. It was built in 2009, and met with acclaim from architecture critics and commentators. It is difficult at first to appreciate its scale as the building is nested into the landscape with a grassy roof concealing its interior grandeur. In this respect, it is like a stylish set from a sci-fi movie – there is an evident commitment to detail in the building specification and a high budget behind the SAH. The designers clearly wanted to avoid giving the impression of a cold and aesthetically clinical institution, and this is central to its overall aim of being an approachable home for specialist clinical veterinary medicine.

The SAH is unlike a standard 'first opinion' veterinary practice and the usual sort of undergraduate clinical training facility. First, the SAH differs from first opinion veterinary practices in the way it is a *referral centre*: similar to the relationship between an UK NHS hospital and a general practitioner (GP), the SAH as referral centre takes on cases which the first opinion practice is unable to take further, ordinarily due to limited facilities or lack of expertise. The SAH is thus a site of specialism in diagnostics, treatment, research and, as I will soon explain, of teaching too. It is not so much that first opinion practices

are lacking *per se* but rather that the structure of Western veterinary medicine makes it necessary to have a tiered system of specialised care, set in a separate location and generally proximate to university-based research expertise. Specialisation in veterinary medicine is relatively new and has only developed since the creation of the Veterinary Surgeons Act (1966). Following a consultation by the RCVS (Calman, 2011), the profession has formalised the process of specialisation in line with changes to the RCVS Code of Professional Conduct so that all specialists: “must be registered with the RCVS and be included on the RCVS specialist list if they want to practise and use the title ‘specialist’ in the UK” (RCVS, 2016).

All patients who are referred to the SAH will have previously been seen by a first-opinion vet who will have recommended to the client that more specialist veterinary care – and procedures that cannot be offered ‘in-house’ - is available at the SAH.³⁸ If this is suggested correctly, then the client should be under no pressure to go ahead with the referral and may decline the offer. Referrals are made for differing reasons: for further, specialist diagnostic testing with state-of-the-art medical technology; for complex surgery or for access to specialisms which are not readily covered in first-opinion practice, such as oncology or neurology.³⁹

An important difference between human and veterinary medicine should be noted at this stage. Whilst it is expected for humans to receive all the necessary specialist treatment as part of NHS care in the UK, access to a veterinary referral hospital is always a choice by the client and one that often results in very high and sometimes unexpected costs. This specialist medicine is at the forefront of veterinary science and care but is also one of the central ethical debates within the profession. Is it fair to put animals through stressful and often invasive procedures when they cannot imagine their future selves? Has veterinary medicine gone ‘too far’ (Taylor *et al*, 2018)? Is specialism all about the God-like heroism of the surgeon who arbitrates over life and death as if to prove their skill? How do we confront and question the costs involved so that vets are paid fairly and clients feel ‘value’? What are the relations between risk and cost? Although sometimes prone to

³⁸ There are some occasions where referral does not take place. The SAH also provides emergency services in order to help local first opinion practices.

³⁹ However, this is gradually changing due to the buying up of small practices by large veterinary conglomerates who then provide high investment in continuing professional development (CPD).

simplification of complex situations, these are the populist questions highlighting key tensions within the SAH.

The second role of the SAH is as a teaching hospital that provides students with real life clinical experience in a centre of specialist veterinary medicine. Its location within the vet school campus is therefore essential as staff roles meld into one another – teaching and research staff are sometimes also clinicians and so expertise develops through combinations of theory and practice.

Students can carry out Extra Mural Study (EMS) with the hospital or, as mentioned previously, can fill their 5th year blocks with time spent in the SAH. The role taken on by students is rather a “grey area”, having neither the status of formal labour, nor of pure observation. Their time is not paid for, despite the hard work undertaken, especially within the less glamorous roles of cleaning and checking patient statistics. Still, it is expected that students put in the hours and have responsibility for the smooth workings of a very tightly-run operation. Aside from this spirit of ‘mucking in’, the vet students undertake observation. They observe the expert diagnostic skills of clinicians and tactility of experienced surgeons. One has to be careful to get the balance between doing and observing right – too much doing and you get over involved in the time-consuming, hands-on tasks that no-one else is keen to do. Too much watching and you ponder too much and don’t develop the pragmatism and “hands-on” knowledge required to be a vet.

What then is it exactly that the students are doing in the SAH, if they are not employed professionally as vets? This chapter tackles this question by laying out a narrative of the SAH as a distinct *place* where students develop clinical experience through their complex, multivariate roles, and where animals are shown to be actors in medicine as opposed to objects of medicine. Additionally, the SAH will also be examined as a facility itself comprised of multiple *sites* where different ways of being within the veterinary clinic are figured out. Whilst SAH as place invokes the phenomenological experience of human and nonhuman animal actors in, what might be called, the ‘place ballet’ (Seamon, 1980) of the hospital, a focus on sites in the SAH allows for an explanation of how practice-based clinical veterinary medicine is made and re-made through encounters between multiple, more-than-human actors.

What is a clinic, and what might a veterinary clinic be?

In order to understand what the veterinary clinic and veterinary clinical expertise are in the SAH, critical consideration of relevant works by Michel Foucault is helpful. *The Birth of the Clinic* (2003 [1963]) is the seminal sociological-historical text for understanding 'the clinic' from a post-structuralist perspective and so provides many analyses appropriate for the veterinary context.

Of primary importance in the context of the SAH is the 'clinical gaze' and the primacy of the descriptive and the visual to the creation of the clinic and clinical experience. For Foucault (2003), the clinic is a discursive phenomenon aiming to investigate disease and find medical truth through the processes of diagnosis and a scientific approach to the doctor-patient relationship. As such, the clinic is presented as a place where medical truth and disease is formed and is not inherently self-evident (as is the philosophical basis of post-structuralism):

“It is description, or, rather, the implicit labour of language in description, that authorizes the transformation of symptom to sign and the passage from patient to disease and from the individual to the conceptual” (Foucault, 2003 [1963]: 140).

Whilst this is integral to the clinic, it is important to point out how the veterinary clinic might differ from this anthropocentric conceptualisation. Perhaps the clearest difference between human and veterinary clinics is that the nonhuman animal patients themselves do not verbally report to the vet what they understand to be wrong with them. Symptoms cannot be relayed between vet and patient to create a wordy, discursive language of disease in quite the same way. Here lies the obvious difference between human and veterinary medicine and therefore Foucauldian accounts of a distinctly human medicine must be used with caution within this chapter so as not to erase the centrality of nonhuman experience⁴⁰.

⁴⁰ Srinivasan (2014) discusses how Foucault can be used to consider nonhuman others, such as in her experience of species conservation, but notes there are limits when thinking though nonhuman individuals and agency.

Going beyond the discursive: from the clinical gaze to multiple ontologies of veterinary clinical practice

To account for the development of a more-than-human veterinary clinic that is always beyond the verbal, it is useful to understand the veterinary clinic from the perspective of multiple ontologies (Mol, 2002). As Mol (2002) states when following the stories of one particular condition (*'atherosclerosis'*), disease is created through multiple bodily enactments which form different 'sites' and realities of the disease, depending on who is taking part in the disease. Thus the disease is made through the 'doing' of it, and not just in discussions about it. This analysis is acutely geographical and because of the focus on the situated materiality of disease, usefully more-than-human:

“The praxiographic 'is' is not universal, it is local. It requires a spatial specification. In this ontological genre, a sentence that tells what *atherosclerosis* is, is to be supplemented with another one that reveals *where* this is the case” (Mol, 2002: 54).

This chapter adapts this focus on the doing of clinical expertise, diagnosis and professionalism primarily through the experience of a learning vet student. The vet student goes between the different sites of disease during time spent at the SAH (becoming an actor in them all) and so has a unique perspective in the clinic. The student's time in the hospital allows learning where medical answers are formed and professionalism performed, but also exposes the individual to the multiplicity of ethical relations emergent in the hospital.

Additionally, there is a focus on how emotion and affect in particular generate ontologies of disease, clinical expertise and professionalism. As with Mol (2002), these ontologies are accessed through the encounters that occur at multiple sites in the SAH. These sites are not only tangible spaces such as the consulting room, but refer to mobilisations of momentary charges which are “suspended in thin air”, such as the time-pressured reading of a patients' clinical history.

Collective affective atmospheres are one crucial way of making sense of these tense moments which rise and fall within the SAH and which have real influence over what happens in the clinic. Collective affective atmospheres exist as a tension between different affects and de-stabilise the apportioning of subjectivity or objectivity to actors, and the status or quality of certainty or uncertainty (Anderson, 2009). They are not sourced from one actor or object and thus are inherently more-than-human. Affective atmospheres are

therefore able to draw attention to particular moments that, however fleeting or lasting, are evidently creative of veterinary clinical expertise.

In summary, I use this chapter to think through 'the veterinary clinic' both as the tangible space of the SAH and as a set of doings, processes and atmospheres which enact more-than-human clinical expertise and produce particular forms of veterinary experience and professionalism.

The chapter begins at the start of my time at the SAH, when vet student Natalie and I take part in our first case together – a dog called Tessa is referred to the hospital with a complaint of a painful back. As we move through three different sites of Tessa's disease (the pre-consultation history, the consultation room and the neuro exam room), the section disentangles the actions of multiple actors who come together to create a veterinary diagnosis. It grapples with the meaning of clinical experience via affective atmospheres and explains how the practices of diagnosis can be understood as more-than-human entanglements which produce the veterinary clinic.

Second, by considering the tangible spaces of the hospital and the geographies of those bodies that move within/with/against it, I detail how as a site the SAH is a never-entirely-stable. As will be shown, the SAH is a space structured by and for humans and so attempts will be made to better imagine nonhuman experience and resistance in the hospital. The focus of my analysis alights on the physical arrangements of the SAH – the layouts of rooms, the doors that contain, reveal and conceal, the attempts at containment, both social and material – and how they produce certain emotional and affective geographies.

In particular, this form of socially-situated analysis requires consideration of the performance of clinical professionalism by students. By looking closely at pre-clinical training in communication skills classes (held outwith the SAH) and the emotional geographies of the front-of-house and back-of-house, I will detail how students' geographies result in the performance of a distinct form of professionalism which both enables, and at the same time limits, care with nonhuman others whilst embedding a culture of emotional resilience which fails to fully recognise the emotional labour required to be a vet.

Finally, through an extended conclusion, this chapter moves the focus to more-than-human empathy and the tensions between care and harm within the SAH, which are at the heart of this chapter.

How to work with infinite bodies – diagnosing a case in neurology

Entering the Small Animal Hospital

Natalie is a cheery vet student from Scotland in her Fifth Year at the vet school and, incidentally, the only student to answer my email sent to those working in the SAH during Block 10 of the Fifth Year timetable. She replied to say she would be happy to allow me to follow her around the SAH during her placement there and so I began my participant observation of *her* participant observation of the workings of the hospital. Although we only spent two weeks together, we managed to build trust in one another, talking, perusing, drinking tea, doing our tasks and watching this place unfold with us at its centre. As such, my ethnographic account of our time shared is intended to offer social depth to this experience.

On the first morning of my time in the hospital however, I first had to meet my SAH gatekeeper, an ultrasound specialist called Liam, at the reception. He led me into the hospital's 'back of house' section, an area free of clients and nervous dogs, and full of people rushing around in different-coloured scrubs. I am told where to change into my own set of scrubs and I do so and then tie up my hair and remove my watch *as per* health and safety requirements. I catch myself in the mirror and I appear entirely bland and fit for purpose, a blank canvas ready for instruction. Although my scrubs are neither vet school branded nor the precise shade for students (royal blue), I feel like I am meant to be here. The SAH is a thrilling place, even before anything happens.

Pre-consultation: interpreting the case history of a dog with a sore back

We begin in the computer cluster room where students gather to complete all the necessary SAH paperwork and also work on their coursework assignments. Natalie and I greet each other. Fellow students in the small room offer their hellos. They seem open, personable and happy to involve me through their smiles and upbeat nature. I am unused

to intense social interaction at this time in the morning, but the hospital never stops and one must demonstrate a professional willingness at all times.

Natalie tells me she has a new case, beginning with a consultation at 10.30am and so 'reads up' on the case history. It is 'Tessa', 'canine', a 'boxer dog with a sore back'. Anna, another student and friend of Natalie working in the computer room, looks at the history of another dog with a suspect brain injury as both Natalie and Anna are working within the neurology department this week. I watch them scroll through the patient file on the computer containing details from all pre-existing consultations with the patient's usual, first-opinion vet. Sometimes this takes a long time but sometimes there can be an error and the first-opinion practice fails to send through the history to the SAH. Natalie is time-pressured as the client consultation where she will meet this dog and her owners is due to take place very soon – how does Natalie know what is relevant when she cannot possibly read or remember the whole history? How does she interpret the language, the long lists of acronyms used by first-opinion vets, themselves with little time to write concise histories? For Foucault (2003 [1963]), continuity of description in medical histories is important: "Descriptive rigour will be the result of precision in the statement and in the regularity of the designation" (2003 [1963]: 137). But shortcuts can be helpful. Natalie and Anna tell me about some tricks they use when interpreting the history:

Think about how far back in the history you should read and locate the body part and/or body system in question. (Natalie's case involves a 'sore back' so she looks for the earliest mention of anything to do with the back area – the word 'spinal' for example).

It is then necessary to understand the symptoms of this body part and/or system – what is the *nature* of the symptom? When do the symptoms seem to appear and disappear in the history?

What do the acronyms mean? ('V+D' means vomiting and diarrhoea; 'V+D++' means severe vomiting and diarrhoea).

Has the first-opinion vet done any diagnostic tests and then inferred a diagnosis?

Has that vet then issued any treatment?

As we are in a specialist referral hospital, this following point is the most pertinent: *what is the most important and relevant reason the case was referred in the first place, and, what is it that the first-opinion vet and client want the SAH to do that they cannot?*

All this specific information has to be noted so Natalie prints off the history and highlights the essentials - she needs the comfort of words on paper at this stage. She tells me that getting the history wrong in front of the clients (mentioning the left leg instead of the right for example) is something that clients instantly pick up on and which might easily lead to them losing trust in the vet.

To Natalie though, in the computer cluster room of the SAH, the animal patient is only a spectral representation of animal sentience, made up of sets of historical data with the name 'Tessa, canine, neutered female'. Whilst a set of relations now exist between Natalie and Tessa, there is no acknowledgement that Tessa is a living body which might impact upon the process of diagnosis. Natalie maintains power at this site, however inexperienced she might feel. Whilst empathy may occur between Natalie, Anna and I through our recognition of the stress of speed-reading patient history, empathy is not extended to nor generated from the animal in question. For the time being, it remains 'it': a disembodied case file and an object of verbal interpretation.

Natalie then accesses another form of knowledge contained within her body, the deep anatomical knowledge she was taught in the lecture theatre and in textbooks about neurology. She thinks back to anatomy classes on the brain too, and how that sticky, grey mass might bear some resemblance to today's problems.

Natalie: "Can you remember that class, Anna? The one about that thing?"

Anna: "Oh yeah, I know what you mean" (Anna is in the neurology mind-frame too).

Anna: "I can't remember either though, look it up online?"

Natalie does so but is still unsure about the thing she thinks might be relevant. The precise name of the 'thing' which Natalie and Anna try to remember here is not what I believe is most important about this exchange. Instead, it is the way in which they mobilise an idea to create an object, this *thing* which comes into play within their diagnostic practice. Recollective asides between colleagues like this – muttered from

behind a computer screen – are significant because they spark a collective memory about another time and place causing an atmosphere or, as Stewart (2011) puts it, a ‘pocket’ to arise:

“Looking for pockets is a labor of attending to a space opening out of the charged rhythms of the ordinary. There’s a pause, a temporal suspension animated by the sense that something is coming into existence” (2011: 446).

Few words are exchanged but Natalie and Anna feel they know what they are thinking about, as if they are at the cusp of some shared idea. Maybe they are, or maybe they aren’t, but either way this is more-than-representational peer-learning at work and part of the dynamism of learning and communicating in the veterinary clinic. It cannot be pinned down to one mind, one isolated train of thought or textbook example, but is constantly being generated through moments of interaction such as this.

Natalie does not have to worry about a final diagnosis at this early stage but instead must compose what is referred to as a *differential diagnosis*.

*

Differential diagnosis is a logical technique used within veterinary medicine (and human medicine) to diagnose a problem/condition in an individual. Gough (2007) explains differential diagnosis as the approach underpinning “problem-oriented medical management (POMM)” (2007: xiii). A differential diagnosis is, simply, a list of things that *might* be causing a specific problem. Gough (2007) continues:

“A differential diagnosis list should be made for each and every problem that is found in a patient, whether in the history, the physical examination, imaging or clinicopathological tests. Although superficially this may not sound very ‘holistic’, in fact, if all the patient’s problems are considered individually, *the whole patient will have been evaluated*, without falling into the trap of presuming that all of the findings are caused by a single condition” (2007: xiii) [emphasis own].

*

At this early stage, a differential diagnosis signifies the moment of learned imagination which occurs before the final diagnosis and is mobilised by the question: ‘given what we know up to now, what could be the final diagnosis, the *actual cause* of the problem?’ Differential diagnosis thus throws open a “window” of possibility, enabled by the vet’s

freedom of thought and informed speculation, before a more formal diagnosis is made. These diagnoses require being held up for inspection and passed around between everyone involved in a particular case, as we will continue to see throughout Tessa's story.

All we have at the moment is the history and some informed, educated guesswork about the differential diagnosis. The differential diagnosis can only truly be laid out for consideration once the consultation and then the clinical examination (neuro exam) have taken place. Anna tells me that many students have 'neuro-phobia' as the brain is perceived as especially complicated, mystical and subjective. One can see muscles and tendons working, but the brain is somewhat intangible and therefore signifies a limit on the perfect clinical answer sought by students. This causes fear perhaps because the student-vet does not have at their disposal a central mark of medical respect: their clinical gaze which makes visible things *knowable* and conquerable:

“it is to see and to know at the same time, because by saying what one sees, one integrates it spontaneously into knowledge; it is also to learn to see, because it means giving the key of a language that masters the visible”
(Foucault, 2003 [1963]:140).

And so having covered the discourse of the case history, Natalie and I move on to the distinctly body-focused aspect of clinical experience, where the multiplicity of medicine becomes at once clearer and messier, namely the consultation room.

The consultation room: multiplicities of the vet-client-patient relationship

Natalie receives some moral and technical support from Cath, the resident vet working on this case.⁴¹ Cath assures Natalie that she is well-equipped to do this consultation and that she is on hand to help if required. I am surprised with how casually Natalie accepts the responsibility of carrying out a consultation and wonder if she feels her chest pound slightly with fear and excitement. There is a thrill as we step across the boundary between the back-of-house and the front-of-house where the clients sit. The reception is expansive with plenty of natural light streaming through the floor to ceiling windows. A TV mounted on the wall shows something like 'This Morning' as if its purpose is to calm

⁴¹ *Resident vets* are postgraduate veterinary students who already hold a veterinary degree and who carry out clinical 'residencies' in the SAH as part of their postgraduate work in a particular specialism.

both staff and clients with banal content. Natalie strides, smiles warmly and calls out the client's name: "Mr and Mrs Robertson?"

Handshakes are firm and the relationship between the professional vet and client-in-need has begun. Natalie leads us to the consulting room and I follow behind feeling neither professional nor necessary. Inside, Mr and Mrs Robertson take a seat with shaky Tessa on a lead by their side. Natalie immediately gets to her knees to greet Tessa on her level. No longer is Tessa just a set of notes but a very real individual – this act of dropping down to the same height as the dog is important as Natalie and Tessa can correspond within the same body space. Tessa is terrified though, and Natalie verbally acknowledges this, not that the dog will understand her words.

"Oh Tessa, you poor thing! It's ok, it's ok", she says to Tessa.

Tessa continues to shake but she leans into Natalie's hands as they stroke her forehead and sturdy body. There is a firmness to this touch which provides assurance to both Tessa and her owners, who relax their shoulders. It provides a release of tension and Tessa concedes with a faint tail wag. Natalie knows what she is doing and knows it is her job to manage the emotional geographies of the room.

I am introduced as a PhD student, here to observe the work of student vets and I smile at Mr and Mrs Robertson, assuring them I am just here as a neutral observer. They agree to allow me to stay in the room. Extra people in the consulting room are common in the SAH, as students are frequently observers and not those carrying out the consultation like Natalie. As such, I observe like a student by furrowing my brow at the correct points and standing with my hands behind my back in deference to the whole procedure.

Natalie then assumes her position behind the consulting table and in front of the computer (see Figure 16). From here, she asks the clients for their story of events whilst highlighting what she knows already:

"So, Tessa has been having some trouble with her back and you are here today to continue to find out what might be wrong. I can tell she is really suffering and it's important we get this sorted", Natalie says.

The acknowledgement of suffering – both of Tessa’s pain and the clients’ frustration – is vital at this early stage. Like the comforting initial touches, it goes a long way in facilitating a caring atmosphere. Natalie then asks:

“Can you tell me when this all started, in as much detail as you can?”

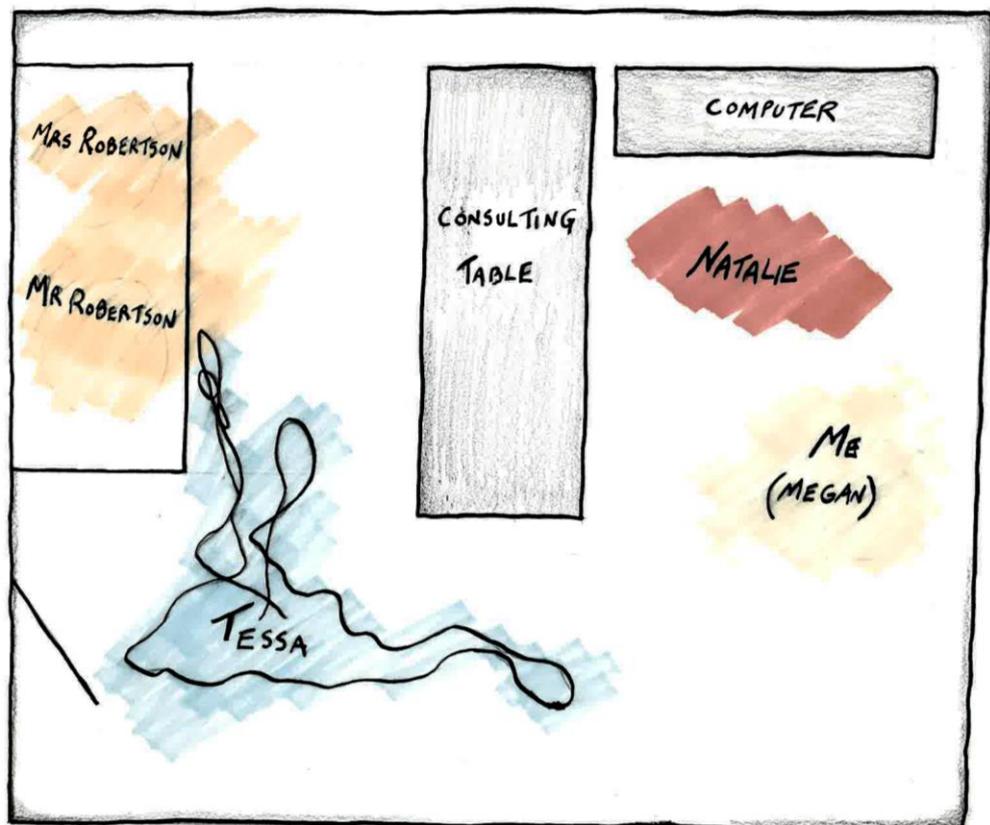


Figure 14 - Bird's eye view of consulting room

Mr Robertson begins his story about when Tessa’s problems began at home and how it has affected their lives. Occasionally, Mrs Robertson butts in to say something like ‘no, it was November, not December it happened’ and together they piece together their understanding of Tessa’s sore back. Natalie types this on her computer but she cannot do it verbatim of course, as it’s all happening too fast. She has to seem interested not only in the ‘facts’ of the story (evidenced by her writing things down) but has to show intrigue in the telling of the story (‘uh huh’, ‘hmm’, ‘yes, I see’ says Natalie). This is a difficult job.

Sometimes Natalie has to interrupt to ask about the nature of something. When Mr Robertson says Tessa limps, Natalie asks:

“Can you tell me when she tends to limp? Can you describe her gait in detail?”

Mr Robertson apologises – he’s got something wrong, forgotten something and has only just recalled it now. Mrs Robertson confirms she also remembers a time Tessa went over on her legs in the park. Maybe this is relevant? Natalie scrolls through her typed notes to add in that memory to the case history.

This all takes about 15 minutes. The result is not a linear story, where pain has a distinct beginning and end. It is not told in the language of objectivism. Sometimes it even contradicts the initial history Natalie read pre-consultation. Together, Natalie and the clients construct Tessa’s history through their conversation to create a case file that is both qualitative and quantitative.

The claim made by Gough (2007) that it is possible to know the patient fully or to completely understand all aspects of the dis-ease through the process of diagnosis however cannot be true. The history-taking and the initial encounter in the consulting room is always partial and flawed. Like Natalie and Anna’s collective re-imagining of the “thing-that-might-have-been-useful” during the history reading, what factors might be relevant come and go in the midst of the consultation. This does not mean that Natalie’s history reading and consultation practice is wrong since she has followed the procedure that she has been taught. This is a ‘holistic’ approach but being holistic is much more than asking as many questions as possible in order to get to the root of the issue. What happened in there, at that precise time, is but one of an infinite number of outcomes. It is Natalie’s job to make sense of these multiple, overlapping lines of the story to create one objective history that can then be shared in the back-of-house, where the process of diagnosing can move on.

The consulting room is thus a place of ongoing possibility but also one with marked micro-geographies of anthropocentric power, geographies that are expressed and mediated through emotion, affect and memory. Natalie’s situating of her body behind the consulting table creates a boundary between herself and the clients, reinforcing her role as the expert who organises the story of Tessa. Natalie is the instigator of touch and the encounter occurs at her invitation. Despite Natalie’s attempts to balance out power between her, Tessa and her owners, it remains the case that the clients and patient are in a diminished position through the tangible geographies of the room layout that enable a professional medical interaction to take place.

And what about Tessa, who continues to shiver and pace the room? We humans talk in the room as if she is the mere object of analysis but she is of course, an actor even if she does not speak.

The neuro exam room: the site of final diagnosis?

The next stage is when we take more of a focus on Tessa's body, having discussed her symptoms and history. Is this the time the body is meant to speak for itself? Natalie instigates this body-practice by politely asking the clients for permission to take Tessa into the main area of the hospital so that she can be examined by fully qualified vets.⁴² The responsibility for this examination does not rest in Natalie's hands for, as we will see, it is dependent on a fluency of tactile knowledge, something it is not possible for Natalie to possess at this early stage in her career.

It is during this journey from the consulting room that the spatial divide between what I have labelled the front-of-house and back-of-house sections of the hospital becomes clear (Figure 17). The front-of-house is where the clients, their pets and SAH staff interact. In fact, the front-of-house is the *only* place that clients are allowed to be within the SAH and is where the waiting room, reception, payment desk (centred on an island in the middle of the space) and consulting rooms are situated. There is a door at the edge of this space requiring special key-card access in order to be opened. It is this door that leads to the back-of house area where vets, students, nurses, animal carers and, of course, animal patients work and reside.

⁴² This is done formally and legally when the client signs a consent form, as is a requirement by the RCVS.

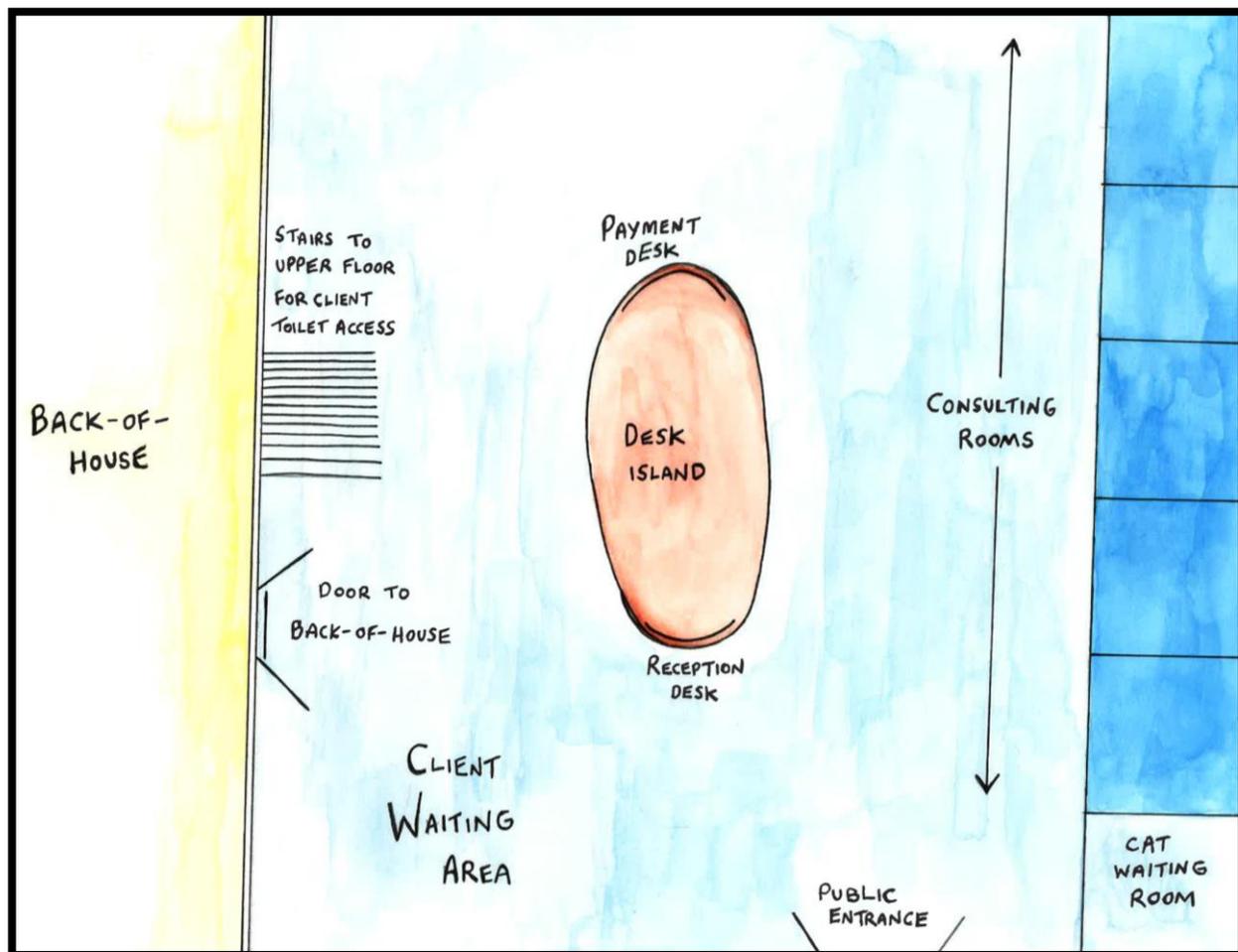


Figure 15 - Front-of-house/back-of-house divide in SAH

This divide – the physical line between one space and another and it's bringing to life through the emotional geographies of the SAH - signifies and contains many things and is central in the workings of the hospital. For now though, this divide means that permission must be sought from clients for the animal to pass through the security controlled doors. Thereafter it is in the hospital's care. The door marks a literal line of consent and so evokes one of the vital aspects of veterinary professionalism: respect for the client. This might result in apprehension for Mr and Mrs Robertson and fear and confusion for Tessa. The journey across the threshold of front and back of house is important to understanding the veterinary clinic and the development of student clinical expertise and so will be explicitly focussed on in the following section relating the unstable landscapes of the SAH.

A lead is slipped over Tessa's neck. Goodbyes are whispered by her owners. They return to their seats in the waiting room. Natalie and I take Tessa through the doors and into

the clinical atrium, the main area located back-of-house. Tessa's legs shake and she salivates profusely, a common sign of a dog's nervousness.

The atrium is a very large, open plan hall. It is segmented into various sections by shoulder-high partitions, with long corridors and offices demarcating the central space. Upon first inspection, the space is just a blur of off-white and varied shades of blue, a cacophony of syncopated beeps from machines competing for space and a general smell of sanitisation. As overwhelming to the senses as this is, I tease out the scent of Hibiscrub, the handwash used by most vets. It is a reminder of childhood, the same smell sensed when my dad would 'scrub up' for operating. It still feels like everyone is watching us however; my dad included.

It seems like chaos but is in fact a careful ballet. Each section is a work-station – one area for nurses, one area for administering 'pre-meds' for anaesthesia, and a few consulting tables for general examination and blood-taking. This only becomes apparent when Natalie later tours me around the space, explaining its multiple uses as we walk. In our interview, brought in later in this chapter, we sketch out the atrium from our memories of the space. The aim of this layout is that everyone can see what is happening at all times and so above this space, just below the high ceilings, are windows in the upper floors from which staff and students can view the atrium below.

Tessa is led along one corridor and into a private room named the 'neuro exam room'. It is like a small office but there is nothing in it except a few chairs lining the walls and some cabinets full of things like stethoscopes. Cath the resident, Katie, one of the neurology specialists, and Anna also enter the room. Cath and Katie kneel on the floor whilst Natalie, Anna and I sit on the outlining chairs. It is a running joke in veterinary medicine that trousers do not last long for vets as they are always on their knees, getting close to their patients on the floor.

Tessa shivers in the middle of the floor and is free to roam the room as she pleases, although she is reluctant to do so. Natalie tells me this free reign is deliberate as it allows the vets and students to see the patient 'in themselves' and thus can be seen as a means of producing objectivity in the examination process. From this position, we can view the whole of Tessa's body, not just the centre of her suffering, her back.

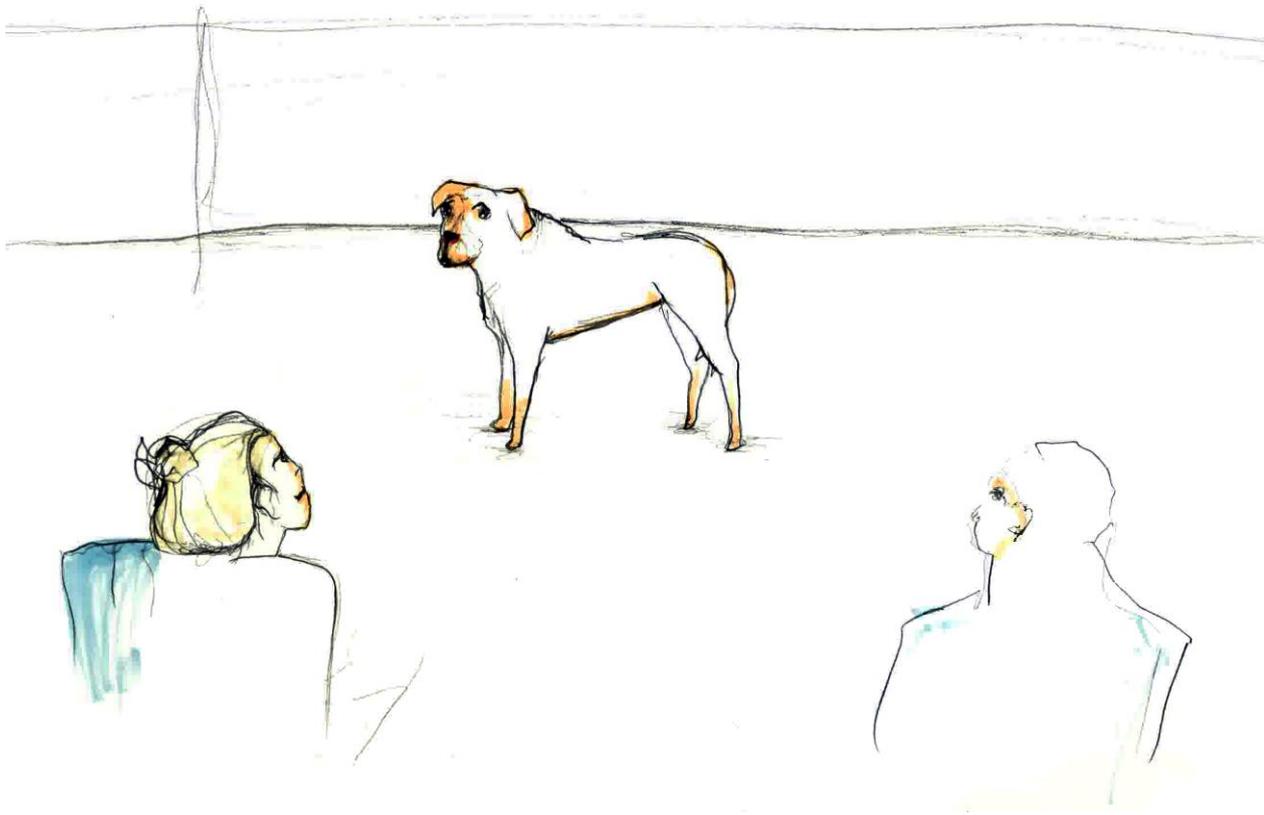


Figure 16 - Tessa at a distance

As if in deliberate contrast to this wide-angle view – Tessa still hovering awkwardly – Cath and Katie now approach Tessa and talk to her in a soothing voice. A tentative pat on the head by Katie is followed by a long stroke to which Tessa responds with the slightest wag of her tail. All of us coo over her calm nature and it is clear that the vets actively like her. I find myself surprised by this response to ‘cuteness’, something I always imagined vets thought was distracting and saccharine. However, this touching is also intended to make Tessa biddable and on the side of the vets as the examination is long and uncomfortable.

Formally, the neurological examination is characterised by a mapping of the body. Neurology relates to everything that is connected to the central and peripheral nervous system, situated in the brain and spinal cord. Hence why one can lose the feeling in one’s leg when it was the spine or brain that was injured. All reflexes must be tested to find out where the bodily failure has taken place or, in more technical terms, to “localize the

lesion in the nervous system” (Lorenz, Coates and Kent, 2011: 2). Knowing this, it is possible to then infer the exact location in the spine or brain that is causing the problem.

To begin the examination, Tessa is being made to lift up each leg in turn. Does it fall back to the ground to support her when Cath lets go? Yes. Then it is not this reflex that is problematic. A rubber hammer is brought out and Cath gently taps it on Tessa’s knee and her foreleg flips forward involuntarily: the correct reflex response. ‘I’m so sorry, wee girl’, Natalie says as she bends Tessa’s paw back on itself to see if that response too is still working. Tessa’s paw does its job and falls back into place. This continues until every part is checked and Natalie and Anna have had a chance to observe and then practice the exam. All the while there are discussions about possible diagnoses – the body does not speak for itself it seems:

“In this regular alternation of speech and gaze, the disease gradually reveals its truth, a truth that offers to the eye and ear, whose theme, although possessing only one sense, can be restored, in its indubitable totality” (Foucault, 2003 [1963]: 137).

“Could it be this issue in her hind leg?”, asks Anna.

“No, I think I know what it is, let’s just keep going with the examination for now, but I think I know”, replies Katie.



Figure 17 - Neuro exam in action (up close)

This apprehensive knowing is Katie's veterinary experience at work. She does not assume she has seen it all before, but a productive tension has arisen between the actors in the room. It makes space for a learned subjectivity that emerges through years of repetitious, careful hand-to-eye interaction but which only appears when the time is right. It is not formally replicable, but it is an essence of what it means to be a 'good vet'. If one were to believe in a truly objective medicine, then this sense would not count for much alongside evidence-based medicine. It is however, the ambiguous quality that a student vet like Natalie wishes to embody.

Tessa is showing signs of what in humans we might characterise as petulance. We all know she is here because of pain and suffering, and the examination is now the cause of more of it. Her tail moves between her legs and the palpations of her lower back done by Kate cause Tessa to expose her teeth in a snarl. Cath announces:

"I can tell she's really hating this, she's holding her breath in pain, I think we should stop".

Tessa is left to wander again and the students and I observe Cath and Katie discuss the differential diagnosis. Their anatomical knowledge is astounding – I hear Natalie sigh in awe when they list of the names of the vertebrae and point out exactly where they are on Tessa's body. From the numerous potential diagnoses imagined by Natalie as she read the history, the vets and student vets have whittled it down to two, maybe even one diagnosis. When Natalie had attempted her examination, Cath challenged her on every occasion by asking the names of nerves and what they did. In this room were three different women at different stages of their careers: Natalie as undergraduate vet student, Cath as a postgraduate vet aiming to specialise in neurology and Katie at the top as veterinary neurologist. No one individual had the answer and the process of the examination was supportive, inquisitive and importantly, iterative. The iterative nature of the investigation is seen again when Cath asks to do multiple further diagnostic tests but Katie reminds her that "there is no point in doing it [a diagnostic test] unless you know what you are looking for".

We are all getting there with the diagnosis however and Katie makes the final statement that the cause of Tessa's pain is in the lumbar spine.

"Yes! I knew it was! I never get the same answer as the neurologist! Finally, I won a bet", Cath exclaimed as a workaday joke.

Katie makes the decision to book Tessa in for an emergency MRI scan later in the day. This will focus on her lumbar area and will provide further supporting evidence as to what the disease is, now the location is known. It is Katie's responsibility as the top clinician to decide this as it carries with it significant financial implications. Natalie and I whisper to each other about how a bill will now be racking up for Mr and Mrs Roberston. I immediately catch the eye of Cath and sense she feels a similar tension about costs to be incurred but it is something that must be shrugged off, otherwise the careful ballet of the clinic would come undone. The emotional and affective stresses on vets are often not caused by big disasters but this daily gritting of the teeth as they consider how the networks of empathy work.

The practices of veterinary diagnosis unfolding here encapsulate three central aspects about the veterinary clinic and about gathering student expertise. First, that veterinary diagnosis and expertise is borne out of more-than-human relations, and not just an objective holism and application of logical deduction. Affective atmospheres are shown to be a key way of recognising and appreciating these tensions between human/animal and certainty/uncertainty. The veterinary clinic is introduced as made up of multiple sites with each one configuring disease and expertise in a different way (Mol, 2002). Emotional and affective geographies are clearly central to each of these different sites.

Second, this case story demonstrates the range of roles taken on by nonhuman animals. Tessa the dog begins as a mere representation in the clinical history and emerges as a sentient and respected patient within the consultation and neuro exam. Although she (as a discursive object and as a vulnerable body) is an actor in each site encountered, it is only in the sites where she is physically present that she can – and does - demonstrate agency and resistance. Whilst it would be simple to say that Tessa is a medical object bent into uncomfortable positions by vets, students and clients, I have demonstrated how diagnostic practice takes Tessa's behavioural choices into consideration and that veterinary practice is not all a matter of forcing nonhuman others into medical intervention. The humans in this story do not carry on regardless but are always *moving with* Tessa. This starts off the discussion about the complicated tension between care and harm that will be critically considered in more detail in the final section of this chapter.

Last, by focussing on the multi-sited practices of diagnosis *with Natalie*, it has been possible to grasp the perspective of a student vet in clinical training, unpick how students learn and understand more about SAH as a place via a sense of intersubjectivity. What is of

foremost importance here is the assemblage of the discursive, the visual and the tactile to create patterns of movement and thought that, together, move towards a burgeoning clinical experience. Through neuroscientist Kate, this experience is shown to be something easy, a rising sensibility or hopeful atmosphere but for Natalie, it is something she tries to mimic and which, for the moment, is still just out of reach. Whilst the traditional understanding of a Foucauldian clinic is evidently relevant, it is the ontological focus on a geography of emotion, affect and atmosphere which develops new, vital insights to veterinary medicine education.

The never-stable landscapes of the more-than-human veterinary clinic

The busyness of being a more-than-human vet student

As has been touched upon throughout the retelling of Tessa's neurological problem, the hospital is brought to life through the busyness of its spaces, the constant movement of people, animals and ideas and the need to be prepared for the unexpected. Compared to the education received whilst taking in a lecture, students in the SAH are required to be almost constantly mobile and develop a heightened sense of spatial awareness in order to learn clinical experience and professionalism.

This section focuses on the students' use of space within the veterinary clinic in order to gain clinical experience and embody veterinary professionalism. After showing that communication skills taught in the veterinary clinic can in theory disallow the agency of animals, the section considers the animal patients' experience. These legitimate actors seek to explore and even escape the spaces of the SAH via senses that cannot be fully grasped by humans – how then might spatial control by humans be experienced and resisted by animals? Together, this multispecies approach to understanding the ever-mobile landscapes of the SAH draws attention to how care and professionalism and the inherent emotional and affective geographies create distinct forms of clinical experience. I finish by considering how these human and nonhuman experiences of movement in the SAH come together to produce uneasy and excessive more-than-human atmospheres.

Pre-clinical training: introducing the communication skills class

Alongside the practical training received through working in the SAH, students take part in communication skills classes from first year to fourth year in the BVMS degree. As

such, it is not that the classes necessarily precede work within the SAH but the aim is still to prepare students for 'real-life' clinical environments in a controlled space. Within the Clinical Phase of the degree, communication and demonstrable compassion are highlighted as part of the Intended Learning Outcomes (ILOs):

3. Demonstrate effective written and verbal communication in a professional context, by a) obtaining a complete clinical history in relation to the disease, b) summarising clinical or production information as a case record, c) communicating historical and clinical data to colleagues and paraprofessionals, and d) communicating with and counselling animal owners in a professional and compassionate manner.

Figure 18 - Communication skills ILO

It is essential to discuss this here as communication skills classes are the section of the BVMS curriculum that most explicitly relate to how a vet student should act, move and respond in clinical environments. As will be shown, these communication skills classes teach students how to embody a particular form of controlled and anthropocentric veterinary professionalism and compassion which is deemed appropriate for the veterinary clinic. Understanding this sensibility, it is then possible to better untangle the emotional and affective landscapes of the SAH, and how this impacts upon care and professionalism there.

The communication skills class feels very different from any other classes in the vet school. It is held within a few rooms in the Clinical Skills Facility, situated in the basement of the Main Building. However, the teacher of the class, Beth, is not wearing scrubs or a lab coat but a flowing black outfit and heeled boots that clack against the hard floor. With a flourish, she greets the students waiting in the corridor for the class to begin. Beth's unexpected elegance subverts the clinical setting and commands respect and openness in return - it seems wholly appropriate that we would be learning about communication from Beth.

The group is comprised of ten 4th-year students who all have previous experience of the class format. Nevertheless, Beth gathers us all to tour us through the rooms that will be

used for today's class. From the corridor we turn into a small room set up like a veterinary consulting room (Room 1): a large table stands in the middle of the room with two chairs either side, rather like the set of a police drama. Beth points out the microphone hovering in the space above the table, connected to a long lead from the ceiling. She points out the cameras in the corners of the room too and I feel my assessment that this space is policed was entirely justifiable. Beth tells us not to be scared or feel watched. The students chat excitedly whilst I remain confused about everything.

We then move into a room on the opposite side of the corridor with a large screen on one wall with the other three walls surrounded with chairs facing the screen (Room 2). Two people who are introduced as actors also enter the room and we all take a seat as Beth finally explains what is happening in the class.

The idea of the class is that each student will get a chance to take part in a 'real-life' consultation in Room 1 with the actors. The topic/scenario of the consultation and how to approach it will be discussed with the whole class beforehand in Room 2. There are 10 different topics/scenarios written on cards and each student picks one at random. Having been briefed, the student braces her (or him) self and moves into Room 1 to carry out the consultation with the 'clients', played by the actors. The actors too have been briefed to respond differently to each scenario.

The microphones and cameras in Room 1 live stream the consultation to those in Room 2 who watch it on the screen at the front of the room. This allows them to watch each of their colleagues and assess their performance in the consultation. Each consultation lasts 10 minutes and afterwards, the student and actors return to Room 2 to discuss how things went. Beth and the students offer advice and guidance about what went well in the consultation and what could be improved on.

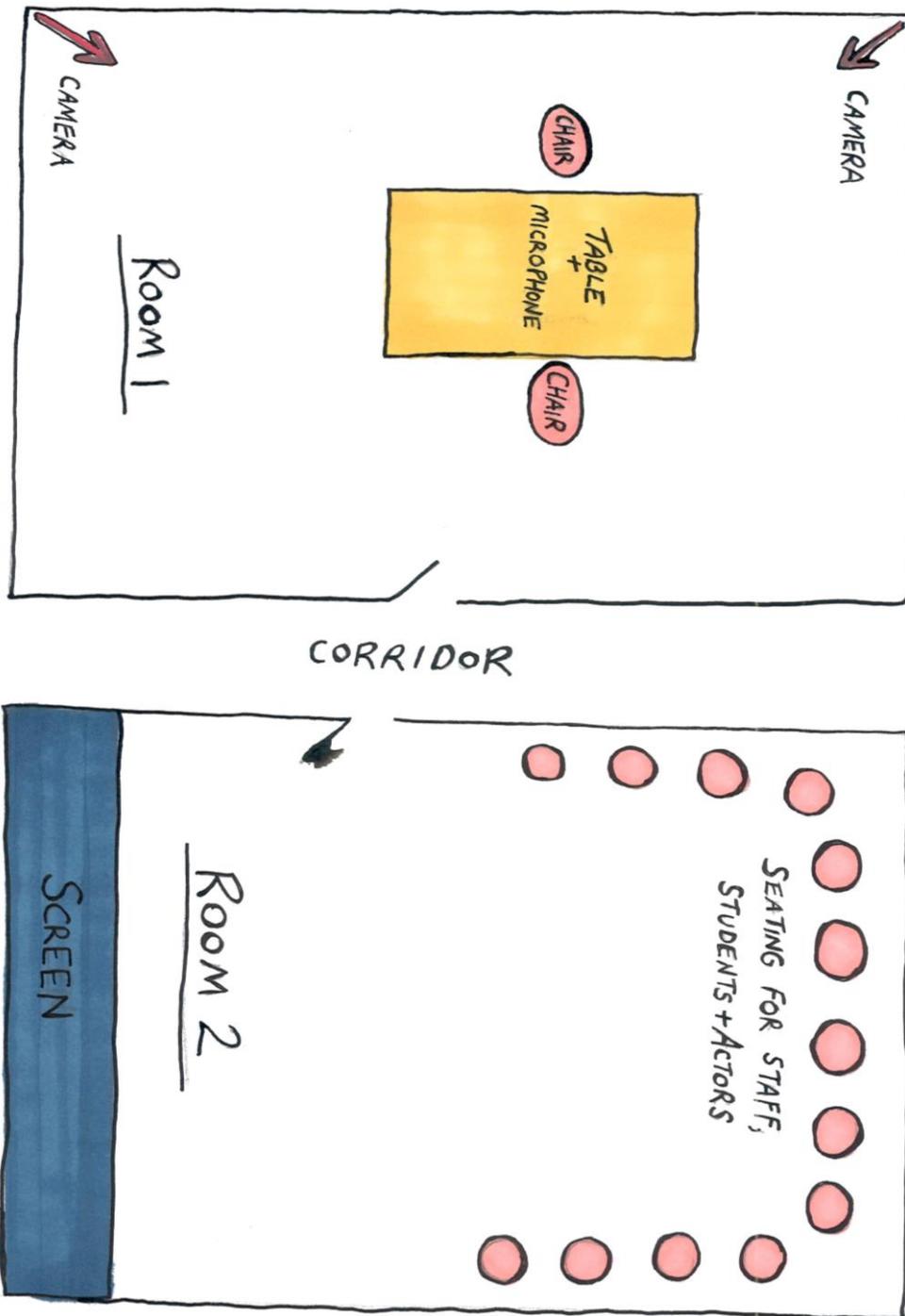


Figure 19 - Communication skills - Rooms 1 + 2

We thus begin the class properly when a young female student picks out her card and reads the scenario in her head.

“Oh God”, she whispers under her breath whilst sinking her head into her hands.

“Tell us what is it!” a classmate asks. By now, we all want in on the gossip of the scenario.

The student in question slowly reads out the following imaginary scenario she will have to act out in Room 1:

“A cat has been left at the practice for an X-Ray and the owner has gone shopping and intends to pick up her cat later the same day. The owner however has returned to the practice earlier than expected to check on her cat. Within this time, the cat has managed to escape out the window in the cattery when it was being taken out of its basket. The student has to break the news that the cat is missing and that it is the practice’s responsibility”.

The whole class wheezes at the tragi-comic set up. Surely the first rule of vet school is not to lose the pet? I imagine the sickness that would rise in one’s stomach in this scenario due to the embarrassment of having to admit to what will surely be considered sheer incompetence, however random the act. This was all to come for the student. We all wish her good luck and others offer her a reassuring backclap. With one final deep breath the student enters Room 1 and assumes position behind the table. She calls in the ‘client’.

We all watch the screen as the student’s body language changes – her head hangs slightly, and lips are tightly pursed. Her hands clasp at her front as if she were stood in front of a grave. This is the embodiment of ‘bad news is about to happen’. The student speaks slowly and clearly to the client, a direct re-telling of the disastrous facts.

We all watch as the news hits the client. An initial expression of confusion turns to anger – a furrowed brow and an accusatory lurch forward to the student. Not violence, but aggression is directed towards the student.

Even though the imaginary vet practice that the student imagines she works for takes the responsibility for the accident, it is still the student on the front line. We all wince as the

student apologises, as this is all she can do.⁴³ She re-states it is an accident and that they are trying everything in their means to locate the missing cat. The student must remain composed and not rise to the confrontational provocations of the client. To do this, she barely moves and assumes a posture full of humility.

Beth then calls an end to the consultation and the student releases her shoulders whilst we all expel the breath we were holding onto during the live stream. A round of applause is offered for the student as she returns, and some friends get up to hug her. I can see her hands shake and her voice breaks as she thanks her colleagues and wipes away nervous tears. Beth assures her she did well.

Soothed by the congratulations, the student then begins the discussion of the consultation. She explains her rationale for her behaviour – she did not say much other than state the basic facts, since she wanted the news to sink in for the client allowing time and space to understand what had happened. The student tells us that, although she wanted to, physically reaching out to the client with a reassuring hand on the shoulder would have done nothing to calm her as the professional trust between vet and client had already been broken. Other students comment on her calmness which she snorts and laughs at – conceding that underneath she was a nervous wreck but just could not let on to the client. Beth confirms that her performance was professionalism personified, and commends her for this. As we move on, with a jolt I remember that this whole scenario was, in fact, a set-up.

This fake scenario is the similar to that experienced by essayist Leslie Jamison (2013) who was once employed as a medical actor in these so-called ‘empathy exams’. Talking of her experience working with medical students, she notes:

“Some med students get nervous during our encounters... Other students are all business. They rattle through the clinical checklist for depression like a list of things they need to get at the grocery store: *sleep disturbances, changes in appetite, decreased concentration*. Some of them get irritated when I obey my script and refuse to make eye contact. I’m supposed to stay swaddled and numb. These irritated students take my averted eyes as a challenge. They never stop seeking my gaze. Wrestling me into eye contact is the way they maintain power – forcing me to acknowledge their requisite display of care” (2014: 4).

⁴³ The RCVS Code of Professional Conduct outlines how responsibility should be managed in the hierarchy of the veterinary practice. The practice as a whole is thus partly accountable for accidents such as the missing cat. See Section 17 entitled ‘Veterinary Teams and Leaders’.

There are three main ways to disentangle the geographies at play in this class and how they manage emotional and affective intensity in the veterinary clinic and produce client-focused professionalism: first, the initial division between Room 1 and 2 with the live stream acting as a point of connection; second, the tension of physical distance between the client and the student vet in Room 1; and third, the emotional release upon finishing the consultation and re-entering Room 2.

First, the physical division between Room 1 and 2 results in students having to emotionally prepare themselves for the crossing of this boundary. In Room 2, with one's supportive colleagues there is comfort, understanding and a collegial empathy felt through knowing everyone will be undergoing a similar experience. It is a space where one is not under scrutiny and arguably is where the students are recipients of care as opposed to carers themselves. This must be left behind as the student moves into the consultation in Room 1, where the student already knows to expect a negative experience. Not only must they prepare for confusion, anger and blame but the student knows they must appear calm and reasonable in response. This anticipatory feeling heightens as the student knows they are being watched and assessed.

Considering this as an emotional geography of care is appropriate as this class requires a performance of specific emotions in order to be considered professional and appropriate for veterinary clinical work. In this example as in other clinical encounters, it is the vet's job to leave emotional space for the client through the containment and suppression of one's own feelings.

This notion can be continued into the second set of geographies evident in the class, those demarcating the lines of tension between the client and the student. The student uses her body to demonstrate humility and respect by reigning in her body to create distance between her and the client. This space between the vet/vet student and the client can be understood as an embodied measurement of professionalism. The student felt like she wanted to reach out to console the client, but she knew that space had to be maintained in order to regain some professional trust. This distance can be flexible, particularly in the case of euthanasia, where vet and client might embrace, but there must always be an embodied holding back on behalf of the vet/vet-student to allow for the client to feel they have a say in veterinary relations. As such, the embodiment of veterinary professionalism disallows for the expression of certain emotions and the

excesses of affect. In place is an appropriate and rationalised performance of a distinctly professional compassion.

Third, the return to Room 2, where the student is seen to physically release bodily tension and become more comfortable showing how she has been feeling all along – nervous, uneasy and now relieved. Compared to the precise physical comportment shown in the consultation, the student cannot hold back here. The way in which her colleagues and friends recognise her feelings by bringing their bodies close further allows for this release and the creation of collegial empathy. This aspect of the class is less like a ‘real’ veterinary clinic, where these sites of emotional release and support do not exist in such a clear way.

There is also the complete lack of involvement of nonhuman animals in the communication skills class that focuses on the verbal and embodied performance of the vet to the client. The assumption is therefore that nonhuman animals are not considered to be involved in veterinary communication and that useful, professional communication can exist between humans only. As Natalie stated in our interview: “People skills is half the battle”. This further emphasises the point that communication skills classes are about teaching how to be rational and emotionally controlled in order to embody veterinary professionalism.

Communication skills classes are a relatively recent addition to the veterinary curriculum in the UK and have been developed in response to calls for more teaching on professionalism, but arguably without a clear or consistent understanding of what veterinary professionalism is, or should be (Mossop, 2012). What has been shown in this case is that the meaning of veterinary professionalism depends on *where* one is carrying out veterinary work - the division between the public-facing performance of professionalism to clients, and the behind-the-scenes spaces of collegial empathy are very clear. Despite the increased use of the words ‘compassion’ and ‘empathy’ alongside veterinary care, despite attempts to think more about the emotional content of the profession, these terms are uncritically falling into familiar categories of traditional, dualistic veterinary medicine where emotion and uncertainty are contained – moved inwardly within the corporeal tensions of vets’ bodies – and are not meant to be extended to their patients, or the nonhuman animals in their care who (once again) are left out of the conversation. Venturing into this relatively uncharted terrain leaves us with two unanswered questions. First, how might it be possible to more fully understand the

experience of the nonhuman animal as it moves through the clinical process? And second, what happens when students' work and move within the veterinary clinic whilst trying to embody this emotionally-contained professionalism, and what happens when this social contract falls apart? These queries will be considered in the chapter's following two sub-sections.

Nonhuman animal resistance in the SAH

While a student can be told verbally about the socio-spatial separation between the hospital front-of-house and back-of-house, and about how to act correspondingly in these spaces, the same cannot be said for the nonhuman animal-patients visiting the hospital. This is not to say that they lack an appreciation of space, but rather that their spatial experiences are not the same as human animals. Additionally, it is not to say that all nonhuman animals experience the SAH in the same way: how a young dog feels in the hospital as opposed to geriatric cat in a basket, or a rabbit carried in a portable container, will be different. Those who work in SAH are aware of this of course, but a distinctly nonhuman-centred approach to understanding the animal geographies of the veterinary clinic has yet to be thought through.

It is fair to comprehend the hospital as a place where nonhuman animals are taken by humans, sometimes against their will, and therefore is a space where there is little chance for the expression of nonhuman agency. After all, animal patients are constantly being controlled by their human companions, carers and counterparts, for example, every dog taken outside to urinate must be accompanied by two veterinary nurses. Instead of viewing nonhuman experience in the veterinary clinic purely through the lens of human control via the structures of the SAH, here I attempt an experiment: namely, to narrate the journey of a patient-dog as it moves through the SAH. My intention here is not to contradict the point that animals' lives are contained, controlled and subjected to harm (Collard and Gillespie, 2015), rather it is to allow for the possibility for nonhuman resistance *within* the spaces of the hospital. It is the telling of a small story of one dog, one that is often bypassed by humans in the veterinary profession. In doing so, it brings the animal into the conversation of its care, politicising both animal subjectivity and veterinary medicine (Srinivasan, 2016).

As indicated in my methodology (Chapter Three), I am not seeking to offer an exact account of what it is to be a dog within the SAH. Evidently, I cannot see, hear, smell or

feel like a dog. I am, lest anyone be momentarily mistaken, *not* a dog. Neither is this an example of one journey that I saw during my time in hospital – it is a composite account of multiple more-than-human experiences felt distinctly through my own body. The aim is to invoke what van Dooren and Rose (2016) call a ‘lively ethnography’:

“The intention here is not to slip into the hubris of claiming to tell another’s stories but, rather, to develop and tell our own stories in ways that are open to other ways of constituting, of responding to and in a living world” (2016: 85).

In attuning myself to a dog’s journey – through imagination and recognition of felt similarities and differences – it is possible to understand the dog as a co-producer of its own care and not just as an object of care and containment. This attunement to animal sensibility within cultural geography is witnessed clearly in Lorimer’s (2006) narration of the journeys of reindeer and their herders at ‘an intimate scale’. Essentially, this is different from writing about animals moving within a space and is more about how animals create space, a consideration of ‘beastly places’ as opposed to ‘animal spaces’ (Philo and Wilbert, 2001). Accompanying the narrated journey is a visual guide to follow alongside reading (Figure 22). This is where more-than-human empathy can be understood as a methodology.

The journey of a small dog

A dog enters the front door of the Small Animal Hospital and is met by a room thousands of times the size of her own body. She might be thrilled as she can sense new bodies around her but cannot see them yet. There are also new scents that can create uncertainty and nervousness, an alien cleanliness that suggests whoever is in charge is trying to erase that animal fustiness. Their efforts are unsuccessful as her senses continue to burn.

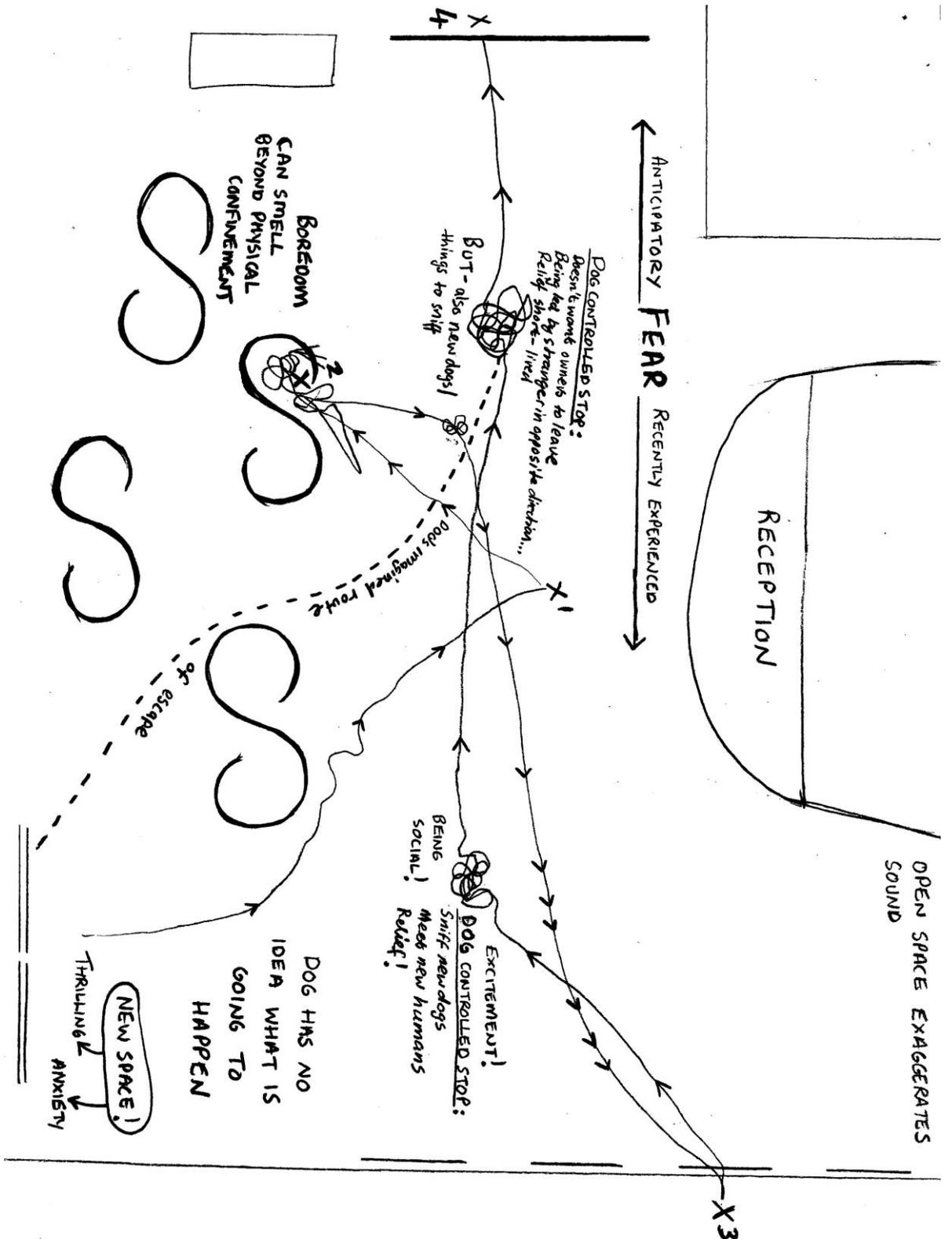


Figure 20 - The journey of a small dog

With her owners next to her, she is trusting as they walk together to the reception (x1) to check in. She pants happily and pads along at their side. They all turn around to sit in the waiting area behind. The chairs here are an odd 'S' shape (x2) and made with curved wood much taller than her. Within each of the curves is a seat and this is where her owners sit. The wood conceals the dog, and she cannot encounter in person that which lies outside her view. This wood smells of past dogs, but she senses there is someone else nearby. There is always something more beyond her body. The chair seems deliberately designed to keep one animal away from another. To lessen the chaos when they meet? For the purposes of ensuring biosecurity? Do they not fully appreciate how canine olfactory systems transcend spatial division? The dog pulls on the lead and throws her paws onto the top of her little containment area. Now she can see what she's been missing so she whines to express a desire to explore. She feels a yank at her neck and is pulled back to heel, her owners' vocal tone changing to sharp and disciplinarian. The receptionist smiles to let the owners know she has seen this resistance before, and that it is understandable.

An age seems to pass. How long exactly? Sounds echo in this open space making it difficult to pinpoint their source, and direction of travel. The dog hears a voice (the vet's) above the cacophony. She is pulled across the wide space. Finally, she can move and see at the same time. A fellow dog enters the hospital at the same time and she all out refuses to continue her human-led journey. The two dogs collide in a tangle of leads and fervent sniffing. In a world where these dogs spend most of their time with humans, the encounter allows for a recognition of one's own. Polite chuckles emanate from the two sets of owners as they try to untangle themselves. 'What are they like!' Something needs to be said in this forced and unexpected meeting. Some sniffing is allowed but the dog feels another pull at her neck, and her paws slide from under her on the concrete floor. She is being dragged towards the consulting room (x3).

Inside, she is prodded and palpated on her sore bits. Why? Procedure confirms the uncertainty she sensed upon entering the hospital and she feels fear and betrayal from the vet who offered up a pat only to bend her leg, just where it hurt. She yowls.

Now the vet puts on a new lead and the consulting room door opens. The dog leaps out alongside her owners but she is being led in an unfamiliar direction – towards a large set of doors with the scent of that strange cleanliness. Anticipatory fear fills her body the closer she moves towards it. Her owners console her with cuddles and gentle words,

making the dog momentarily relaxed. But the owners then move away and she is pulled determinedly again by the human she does not know. The dog stops by tensing her paws as much as possible into the floor because she is desperate not to be taken away into the unknown. Her memory of the space in happier times (30 minutes ago) comes into play and she imagines an escape route – right across the waiting room and out that door she came in. The other option is violence on her part; maybe a quick nip at the vet will make her stop. This awful, concrete floor limits her resistance and she merely glides across it when pulled by the vet. Resistance is futile for a very small Yorkshire Terrier.

Through those doors she goes and they close behind her (x4), cutting off the sounds and scents she was momentarily familiar with. She feels large hands around her ribcage and back end as she is lifted into the arms of the vet. The dog submits, as this vet is what she knows best now in this new space and his hands are gentle. It is too loud and bright in here though, and too *busy*. She is overwhelmed as she is lifted onto a hard table and bites the vet. Another person is called over with a muzzle and she tosses her head as the contraption is pushed onto her mouth. It is too big. She is incensed at her incarceration and bites again and again. “Poor little thing” says one person. “Wee shite”, says another.

Suddenly, there is a piercing pain in her left foreleg and a new, bizarre sensation overcomes her. Her intentions slip away as she loses feeling in her muscles. It is a warm comfort resonating from her insides and she gives in as the chemicals work upon her body. She slips into unconsciousness and the vets can go to work.

By attempting to narrate the journey of an animal patient through the hospital, it is possible to decentre the focus from anthropocentric explanations of veterinary medicine *and* to challenge anthropocentric geographical modes of interpretation.

This is important because veterinary medicine involves nonhuman animals and yet continues to report upon their experiences primarily through statistically-supported evidence from the disciplines of animal behaviour science and animal welfare. In that scientific vein, animals are understood as feeling the effects of factors upon their physiological bodies and are not considered co-producers in their care. This minimises animal experience and disallows other affective capacities from being considered – such as the ability to resist as narrated here. Resistance in this case is so important as it is as much about resistance to tangible spatial constraint as it is about resistance to distinct categories of human and animal, fear and love. Nonhuman animal resistance is a part of

veterinary clinical experience and it defies a human-centred understanding of veterinary professionalism.

This is not to say that nonhuman animals have the same emotional range, or sensorium, as do humans but rather that it is useful to utilise a form of ‘critical anthropomorphism’, one imaginatively entering what might be experienced by others, *beyond scientific explanation*. In addition to approaches in critical animal geographies and some forms of ecofeminism (Kemmerer, 2011), where an animals’ control is tantamount to their slavery, I have shown how nonhuman animal experience wavers between different affective states – from fear, to love, to inquisitiveness – all of which entangle to produce a more-than-human veterinary medicine. It is as unfair to assume that animals only want to resist their more-than-human structures as to assume that vets are unaware about the suffering animals often undergo during medical treatment.

More-than-human anxious atmospheres: the limits of professionalism

In the daily grind of the hospital, there is a tension between how nonhuman animals experience spaces, and how staff and students try to do their professional best, creating a veterinary clinical landscape that is always in flux. The result of positioning the veterinary clinic as inherently more-than-human and formed through affect and emotion is that it is necessary to look at *what is in excess* of the emotional and physical containment of care I have previously explained. Whilst one can be taught to perform emotion in a certain way and in a certain space, this does not mean it is always possible. In considering the layout of the back-of-house and Natalie’s movements through the SAH, I will reveal how the space is marked by an anxious atmosphere when students sense the impossibility of maintaining a culture of emotional resilience whilst performing professionalism and enacting care.

In order to carry out her ambiguous job in the SAH and to appear like she is capable of being a vet, Natalie moves through the hospital with intention. She never saunters but paces from task to task confidently, always wary of the next thing to do. During our interview, we trace out the layout of the back-of-house where she spends most of her time, and we think about how she approaches the openness of the large atrium. I show Natalie the hand-drawn map I made of the space and ask her if it is correct. We talk through it as follows:

NA: Yeah, I think so, the endoscopy is there. Then this would make surgery there.

MD: And these are like, tables?

NA: These would be like, crash stations and these are all like anaesthetic bays and treatment bays and things and then surgery.

MD: And what about the neurology room? The exam room?

NA: Yeah, wait, where is that?

NA interview, p. 1

We go through all the different points in the space so that we have a messy but sensible bird's eye view of the back-of-house atrium (Figure 23). The route taken by Natalie and any animal patient she receives from the front-of house is scraped onto my hand drawn map in a curved zig-zag from the top of the map, to '1st point to stop', to the main treatment area ('anaesthesia, prep, blood taking'), to 'Ward D kennels' on the right hand of the page. This is where the animal patient is deposited.

A point of interest in the atrium is worth naming when it is useful to Natalie as she moves through the SAH. These places only clearly come to into our collective memory when we imagine our journeys through the space. Places are therefore named after the procedure that takes place there (such as 'endoscopy department') or noted for how they make Natalie feel when she reaches a particular point (such as 'Info! Too busy!' when at the Nursing Bay).

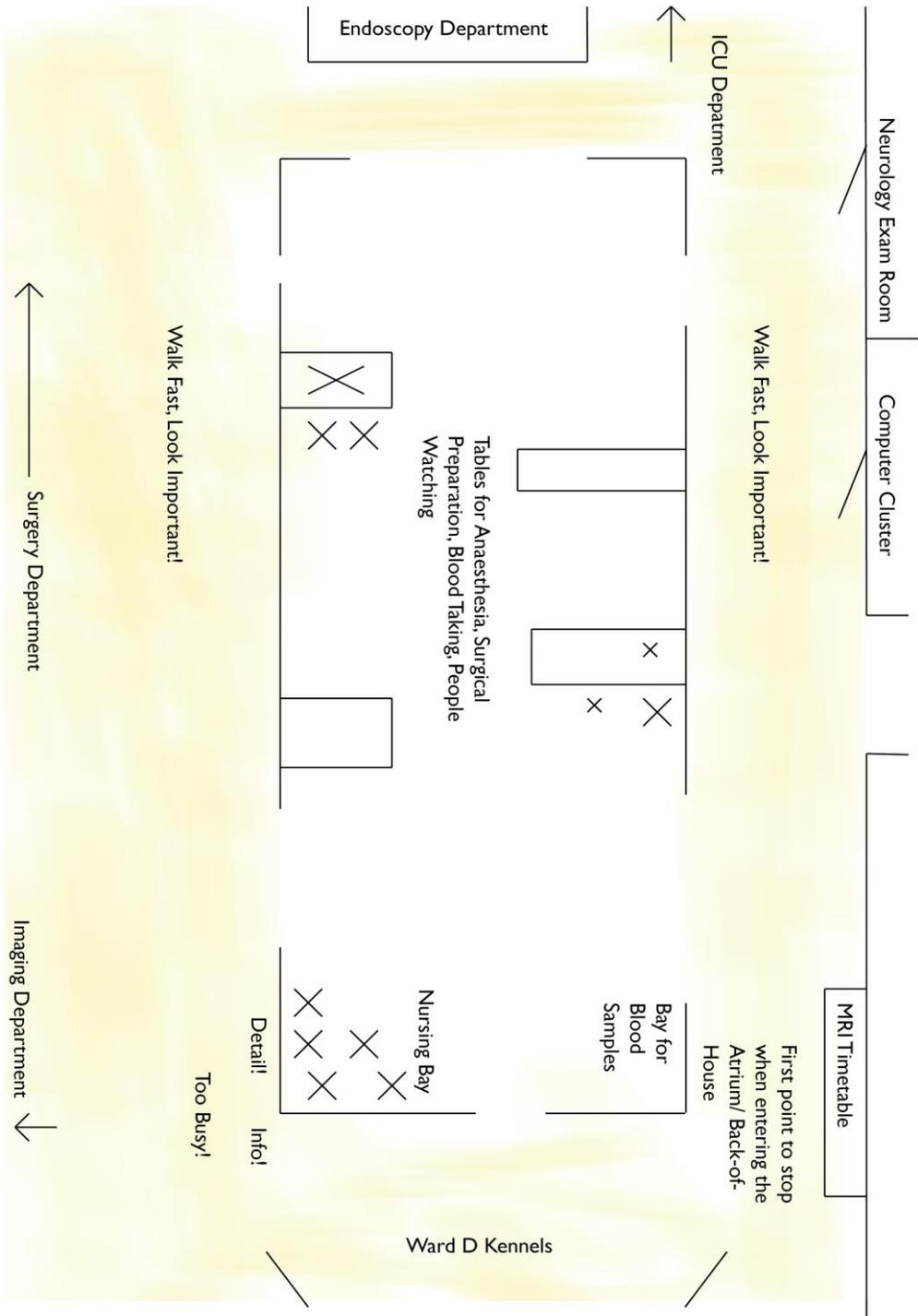


Figure 21 - Back-of-house/atrium with Natalie's edits

MD: And this is the bit where you have to walk around?

I refer to the long, wide corridors that encircle the central treatment area ('anaesthesia, surgical preparation, blood taking'), where we have noted 'walk fast, look important!' and 'detail! Info! too busy!').

NA: Eurgh! (laughs)

MD: Where people are always...

NA: Just doing little random things, yeah

MD: Just having a wee look over.

NA: (laughs), yeah!

NA interview, p.2

I ask Natalie more about the pressure to 'be busy' that she had previously mentioned she feels and sees in others when working in the open-plan atrium:

MD: Does the point that you have to be seen to be busy in the vet school cause anxiety? When you know others are watching?

NA: Yeah, definitely, you always have to look busy cos otherwise you literally, I mean, I have a few friends who are just so keen to help everyone that it gets to 4-o'clock and they just haven't had any lunch. Cos there's always somebody that'll need help but you also have to be like, I have to go for my lunch now, I can't, I have to go on a break, I can't do this all day y'know.

MD: Sure.

NA: ...And that can be difficult, we've got this thing where if you're walking around, carry a bit of paper and walk really fast! (laughs) [this so that she looks like she is 'busy' when she is in fact trying to have a break].

NA interview, p.5

Natalie highlights here how if students are not seen to be busy they will constantly get subsumed into the endless tasks within the hospital, either by being asked by others or via a collective sense of a duty of care. Bodies move constantly as a result of this and, in turn, this mobilises an anxious atmosphere whereby one can never do enough. It is essential to consider this as an atmosphere because this sense extends across the open space, is felt

and causes beings to act, whether one is verbally told to or not. It does not come from one individual but arises from affective spatial relations of busyness.

In this framing then, use of space by students and staff in the SAH engenders a culture of emotional resilience, where being an aspiring vet is demonstrated through an embodied professionalism that involves a constant extension of an emotionally restrained and professionalised care. The hospital atrium is at once a space where care happens, a space where self-care is limited and where productivity, perfectionism and professional performance must be shown.

As a result of these complexities, the perfect form of care is always out of reach. More-than-human empathy is excessive. Feeling thus spills out, for example when a body is forced into resting mid-afternoon and into confronting "... its inherent openness to what exceeds its abilities to contain and absorb" (Harrison, 2008: 427). Natalie's technique of walking the corridors whilst carrying some paper in order to look like she is off on some important job is another use of space which allows her to mimic professionalism whilst actually allowing herself a break and come to terms with uncertainty. Despite the professionalism that partly characterises the veterinary clinic and which students embody as they learn clinical experience, the inherent more-than-human aspect of the hospital continues to exist and leak beyond the boundaries of a prescribed veterinary care.

Concluding remarks

What connects together all aspects of the Small Animal Hospital, and all aspects of this chapter, is tension. Meaning comes into being not purely through the application of logic but through the work of grappling with what version of 'the social' exists in the in-between. Some primary sets of tensions are: care and harm, human and animal, certainty and uncertainty, emotion and reason and communication and misunderstanding. These are not to be taken as dualisms for they all interconnect through the entanglement of more-than-human relations. These tensions are embodied – they are a clenching of one's shoulders as much as they are a means of geographical analysis.

This chapter set out to consider what a veterinary clinic might consist of and what in particular the Small Animal Hospital is, when taken from a more-than-human perspective. Additionally, the chapter questioned how veterinary clinical experience comes into being in the hospital. In the broadest sense then, the central aim has been to investigate the

relational ontologies of the spaces of the SAH in order to infer how the practices of veterinary medicine work.

The recognition of the role played by nonhuman animals in the assemblages of the SAH is key to understanding the more-than-human geographies of the hospital. They are not included as factors which have an impact *upon* a veterinary medicine carried out by humans but are discussed as inherently involved within its practices.

In doing so, the chapter tackles a key problematic in veterinary medicine and often, still, in human geography - that nonhuman animals, despite being involved in debates in these disciplines in a discursive manner, continue to be explained away either as medical objects or as philosophical outlines. In writing imaginatively and empathetically with, and alongside, individual animals here, the chapter has brought to life the physicality of animals – the tails that wag, the muscles that shake and the velveteen sniffing noses. This is not romanticism but a ‘passionate immersion’ that does not focus only on positive evocations of nonhuman animal experience (van Dooren, Kirksey and Münster, 2016).

This chapter does not carve off nonhuman animals, apportioning them a spatiality of their own, and rather seeks to conjure up tactility in more-than-human terms. It comes down to a matter of feeling-*with*: who feels with who and what, and in what geographical relation. The ethics of the SAH and in the veterinary clinic as a wider notion, are never set in advance, but always occur as an event of geographical ethics (McCormack, 2003).

What is the Small Animal Hospital and what is the veterinary clinic?

The SAH as a whole can be said to be a space which exists between the applied rational medicine informed by scientific method and an affectively resonating care which exceeds species boundaries. As such, it is not possible to state what falls into the category of ‘science’ and what is to be allocated to ‘care’, for in practice they inform one another.

However, the emotional and affective geographies which grant this fluid ontological interface does also require the creation of borders in the SAH because understanding the veterinary clinic is also a political task. Whilst affective atmospheres are ambiguous and do rise and fall in relation to different spatial and temporal qualities, they do not just float free from social and cultural structures. Part of the tension between science and emotion

in the SAH, and a key outcome of this chapter, is how scientifically informed logic and reason come to order emotion in the practices of the hospital.

The physical layout of the hospital – between the front-of-house and back-of-house, within the consulting room, in the space between client and vet/vet student – has been shown to be structured in a way that promotes stage-by-stage reasoning in diagnostic practice. It is a space built for the kind of ‘holistic’ diagnosis described by Gough (2007). The layout of the hospital thus allows humans to carry out an anthropocentric veterinary medicine upon their nonhuman animal subjects, in a way that intends to protect biosecurity and safety as they see it. Additionally, it sets up opportunities for students and staff to enact ‘the clinical gaze’. In this way, Foucauldian spatial analyses are demonstrably relevant, set within a wider series of situated ontological concerns.

In taking an ontological approach however, which foregrounds more-than-representational aspects in the SAH, more can be said about how emotional and affective geographies help structure hospital practice. In the third section in particular, I have shown how professionalism is not an apolitical part of the hospital and student veterinary clinical experience but is the embodiment of a distinct medical rationality. This is taught as a form of body-practice (as seen in the communication skills class) and is part of the anxious atmosphere sensed in the movement through the back-of-house. Veterinary professionalism is shown to differ in different sites – it is not so much the point that emotion is entirely excluded from veterinary professionalism and from the spaces of the SAH but that there is an appropriate emotional response depending on the site. Veterinary professionalism is thus a discourse within veterinary medicine education (a set of guidelines to be taught and followed) and something enacted by embodied emotional geographies and affective atmospheres.

An effect of the spatial dominance of scientifically-informed rationality and the resulting containment of emotion, is that it puts limits on what can be considered communication with nonhuman animals. The form of professionalism enacted in the SAH (and in the communication skills class) means that conscious, verbal and logical communication takes precedence – it can thus be laid out, written down, understood, explained and help keep vets/vet students accountable for their actions. In this framing, more-than-representational communication between humans and animals – which is formed through tactility and emotional attunement – is either discounted or considered additional. Through the relations between the physical layout of the SAH and these emotional

geographies, it can be said that the hospital leads to a containment of emotionality and more-than-human otherness. Additionally, student veterinary experience and expertise is learned through a distinct educational discourse on communication skills and an embodiment of professionalism.

Beyond the confines of care: possibilities for a more-than-human empathy in the SAH

This is not the only story of the hospital however. If it were the case, then all veterinary medical care would have to be framed as a form of anthropocentric harm to nonhuman animals. By continuing the language of tensions, another thread drawn through the chapter, and in the daily operations of the hospital, is that of more-than-human empathy. Framing veterinary care as more-than-human empathy allows for alternative spatial ontologies to be created and recognised. More-than-human empathy involves imagining oneself in another's position – it is not to say that one is 'taking on the pain of another' precisely, nor is it about projecting one's human emotions onto animal bodies. More-than-human empathy transgresses boundaries when opportunities open up, as seen at times in the SAH such as in the feeling-with Tessa and in the story of resistance in the dog's journey through the hospital. When veterinary care is re-imagined as more-than-human empathy then emotion and affect become central to the profession as a whole and the development of student veterinary experience can be understood as a gradual acceptance of uncertainty. Therefore, more-than-human empathy can be considered a sensibility and as a methodology.

More-than-human empathy is inherently excessive, leaky and complicated. It is not an answer for problems in the veterinary clinic and in advocating this notion, I do not think the veterinary clinic should descend into chaos, animals should not be let loose and vets allowed to start shouting at clients. More-than-human empathy requires a different register of recognition, but does not require direct action or distinct emotional display. A means of understanding affective excess is clearly necessary however, as seen in the latter parts of the third section, and more-than-human empathy can provide this. Considering this as a geography is pivotal too, as it allows for the possibility to think through *where* feeling issues from, how it is expressed and *where* it moves so as to be felt. Currently, this depth of affectively-attuned understanding is not recognised in veterinary medicine.

In summary then, The Small Animal Hospital and the 'veterinary clinic' as a concept, are spaces where veterinary students are at once their most clinically experienced and most uncertain. At the heart of this spatial analysis is an imagination of the deep entanglements of care and harm, human and animal and science and emotion, and of the complex weavings of more-than-human empathy.

8. A graduation in more-than-human veterinary medicine

This thesis has been arranged as an institutional journey through the educational activities of a university vet school. It is arranged spatially, via the different sites that are reflected in the chapter headings (lecture theatre, practical classrooms, farm and hospital), and temporally, through an ethnographic engagement with the BVMS degree curriculum as it progresses from years one to five. To open in the lecture theatre is to begin as the new vet student does. To travel through the practical classes and university farm ending up working in the hospital is to emerge, fully educated and readied for graduation as a veterinary surgeon. Congratulations are in order!

By my own experience of shadowing elements of the degree programme, this has been an effective way to navigate the spaces of the vet school, to comprehend the BVMS curriculum, and to demonstrate how they are mutually constituted. Additionally, this spatial-temporal structure helps highlight the site-based ethics that defined my research. Each chapter is a site, offering a pathway into the more-than-human ethics of the vet school, veterinary education and veterinary medicine as a whole. If these sites have bounded geographies then they are not sealed. Instead, their relational constitution means that spaces, matters, emotions and things existing beyond the immediate, bring themselves to bear at each site of ethical entanglement. While these sites organise the thesis and reflect the structure of the BVMS degree, in practice nothing is quite so precise, linear or clear-cut. Troubling the same boundaries that I found myself having to observe is a deliberate experiment, showing up the uncertainties inherent to becoming a (more-than-human) vet, and scrambling the position of the researcher in academic research and writing.

At the thesis' outset, three central objectives are established for this research project and my efforts to meet them are woven into each chapter. It is worth recalling those objectives:

(1) To investigate how the skilled practices of veterinary students emerge in pre-clinical, field/farm, and clinical settings and how these reflect changes in educational provision and professional training.

(2) To critically explore the experiences of animals as cared-for patients, and as scientific bodies in order to better analyse the ethics of animal care and veterinary welfare in the context of veterinary education.

(3). To critically investigate the practices and meaning of ‘care’, ‘empathy’ and ‘veterinary professionalism’ in the multiple sites in which veterinary students and graduated veterinary surgeons work.

This conclusion reprises each chapter’s findings in order to draw attention to how key outcomes and arguments address these research objectives, as well as detailing how chapters interrelate as a full body of research. I will also consider certain practical and conceptual limitations. I then outline the contributions my research makes in setting possible future research agendas in veterinary medicine and in human geography. At the close, I return to the core concern of this ethical entanglement – more-than-human empathy - discussing its geographical characteristics, and where its future lies.

The uncertain transfiguration of the vet school

Site #1

We began in the vet school’s lecture theatres, where students kick-start their degree and where I began making sense of a veterinary education. This is the pre-clinical stage of the degree, signifying a period of learning which is relatively fixed and stable. Students are seated and constitute the audience, receiving information passively from a front-of-house lecturer, a mode of communication associated with the historic university. It seems to be a unidirectional form of learning – an unemotional telling of facts absorbed by an attentive but silent audience. Despite the central subject of veterinary medicine, there are no animals present – at least not physically so, in-‘person’. What work, then, does the lecture theatre do in a veterinary education? How do animals appear? And what does this mean for care, empathy and professionalism in veterinary medicine?

To tackle these questions, I sought to enliven the lecture theatre by exposing the emotional geographies and affective atmospheres arising here via multiple human and nonhuman actors. I drew attention to the versions of animals considered in these classes, and interrogate the practices and discourses involved in their becoming. I sought out lectures on euthanasia and professionalism and, through creative engagement with and

critical analysis of ethnographic findings, show how it is possible to better understand the relations between emotional and rational registers of knowledge-making in veterinary medicine.

The atmosphere of the lecture theatre arises differently in each lecture but is partly defined by the affective-spatial dynamics of the room. The room is big and open and so creates a sense of intellectual freedom – traditionally, it is a place readied and entered for the purposes of broadening one’s mind. This is seen particularly in a lecture on animal husbandry, where students are encouraged to ponder the ontological ordering of humans and animals on a global scale. On the other hand, the lecture theatre is structured through the clear hierarchical division between the teacher at the front and the audience of receptive students in the stalls. The lecture theatre is arranged and enacted as a suspension of reality, a hermetically sealed space-time, separate from the hectic complications of the ‘real’ world outside. This pedagogic isolation is achieved in two different ways. First, by engineering atmospheres of the lecture theatre: turning off the lights creates a darkness that encloses from all sides, focusing attentions onto the bright lights of the projection. Second, through a continued and consistent emphasis on the fact that the lecture theatre – and the greater degree curriculum – is a space free from moral values.

This is evidenced particularly in a discussion with animal ethics lecturer, Sam Earley, who describes how she lays out different ethical options in her teaching but does not teach any moral values. Robert Kirk, lecturer on animal husbandry, also draws attention to how there are no moral judgements to be made when he details how different animals are treated across the globe. The aim of this approach is to allow students to develop their own form of veterinary ethics, uninhibited by any ideological position. Lecture theatres and the wider curriculum are spaces *in theory* and thus an embodiment of Haraway’s (1997) ‘culture of no culture’.

However, I also demonstrate how lectures and the broader vet school curriculum *do* instil the moral values of scientism: those of objectivity, rationality and anthropocentric care. I show this through a consideration of the ‘normal animal’ in fictional Redroofs Riding School, and how the animal is configured as a set of knowable body systems and scales, from cellular to societal. Moreover, I draw attention to the valorisation of rationality through engagement with the emotional geographies and discourses emergent within the euthanasia lecture. I also show how the lecture on professionalism ties

together these science-based values with veterinary professionalism and in doing so, promotes veterinary care as human-centred detached concern.

This chapter, and the greater thesis, demonstrate there is another version of the same story and it is not quite so simple. By developing a sensuous spatial attunement and writing practice, I show how despite the formal scientism inherent in the lecture theatre, the more-than-human still leaks in. In the lecture theatre we get the first sense that the relations between science and emotion, and human and animal are messy. The images of animals in lectures draw out responses that are not entirely rational but immediate, affective and impactful: disgust, horror, relief, and other sentiments surface. The animal in the lecture theatre is a discursive, yet important idea. We also begin to understand the relations between care and harm in veterinary education, and how multispecies care makes it difficult to pin-point one from the other. Whilst the detached tone of the euthanasia lecture relies on a bullet-pointed list to enable animal death and perform empathy, there is care in this order that is designed to ensure a benign end to life. It is not easy to work on the borderlines of life and death and science and emotion. Although I suggest that the conventions of veterinary medicine education do not fully entertain the less-than rational aspects of care, I do also show how personal boundaries are important. A more-than-human geography of empathy is not just about opening the gateway to shared suffering such as to be overwhelmed by it and unable to act. It comes back, as it always will, to a tension.

Site #2

In the second empirical chapter, 'Underneath, the anatomy lab awaits', we moved into the pre-clinical, practical elements of the BVMS degree. Working with second and third year students in the anatomy lab and clinical skills facility (CSF) of the vet school, I showed how theories learned in the lecture theatre are put into practice. How does one become practically able as a vet student? How do the haptic, "touchy-feely" interactions which create this site relate to care and empathy? What is the role of the animal subject at this new site? If the lecture theatre felt comfortable and worked to instil stability and certainty in scientific understanding, then the anatomy lab and CSF are where these sureties begin to unravel.

Unlike in the lecture theatre, there are animals in these spaces although they are no longer living. They exist as cadavers and specimens, some fresh, some preserved in

formaldehyde and used when display is necessary. These animal remains are worked with using students' hands and senses as they follow the guidance of teachers and worksheets. In this chapter, we found evidence that tactility and sensuous engagement with dead animals and materials is central in developing students understanding of veterinary care and empathy.

From the world of the textbook and powerpoint presentation, we were immersed in the inner worlds of animals. These animals are recognised as cadavers and as scientific models-cum-instruments that are disembodied with careful hands, layer by layer, in order to better understand the whole. This engagement and enchantment with the interior – seen particularly when students try to locate an ovary inside a dog - is important and certainly not callous. Enriched by Haraway's cyborgian dispositifs and Patchett's (2012b) 'necro-ornithology', these conclusions come about from asking new ethical questions of animals and materials that challenge dominant ontological categories. It is care for the miniscule, because it requires delicacy, respect and recognition of the body's complexity. It is a tender practice characterised by action and communication beyond the verbal and representational.

Students are not *always* gentle. Sometimes, they tinker with specimens and cut more deeply than they should. It becomes less easy to apprehend the ideal body in anatomy textbooks when faced with a fleshy mass that differs from the diagrammatic perfection of anatomical cut-aways; as was the case of the failing fallopian tube story. In practical classes, students are confronted with the abnormal and its monstrous possibilities (Dixon, 2008; Dixon and Ruddick, 2013). The pathological is there, at the end of your fingertips. It is these vibrant, textured interactions between student and corpse that is transformative of both. The student is now imbued with a living sense of uncertainty in their position as fallible human. The animal's remains are no longer lifeless, as it acts back and is part of this strange, hands-on conversation about veterinary care and empathy.

Observations such as these support the case for a more speculative ethics in veterinary education whereby the relations between student and animal, and life and death are not set before their intermingling. The chapter thus inflects more-than-human empathy with an important sensibility – the tactile connections between vet student and specimen are a site of empathy in themselves, and this empathy is not related to feeling sorry for another. It is marked by the close involvement with abnormality, recognition of transpecies vulnerability and an acceptance that the human hand is not always in control.

Site #3

The third empirical chapter considered the workings of the university farm, investigating how vet students develop their skills in the context of 'large animal' veterinary medicine education, specifically whilst carrying out visits to the university farm. This is an entirely different space from those previously considered. It contrasts sharply with 'small animal' veterinary medicine; at times, farm-based veterinary medicine can feel like a distinct profession in itself. Unlike the homely geographies of pet ownership, the university farm is a business that needs to be economically viable, work as a research site, enable biosecurity and ensure animal welfare. This chapter thus also explains how animals' lives (mostly cattle) are controlled through powerful economic-legal, physical and ethical infrastructures. A more-than-human engagement with the spaces of the farm reveals that these infrastructures are kept in place through the bodily practices between farmers, vet students and animals, as well as with the materials, technologies and discourses of their making. Students are farming apprentices taught how to move rationally in these spaces whilst listening to the rules about how the farm works.

The university farm seems to be a place where care is configured as care for the structures of agribusiness and research, where professionalism is characterised by respecting the farmer to lead decision-making about animal lives, and where empathy is not a sensibility which is actively encouraged. Empathy is opposed to business, as farm researcher manager Sean stated. In discussions about empathy and in particular an 'animal-focused' empathy (the lay term I used to talk about more-than-human empathy), it is opposed to reality and the 'real world' where vets have to 'suck it up'. Here we found similarities to the emotional geographies of the lecture theatre. Both theatre and farm are constituted as spaces which enclose a rational and ordered education, whilst the real world exists beyond in all its contingency. It is not that empathy does not exist here but that it is judged unhelpful, and liable to get in the way of decision-making; for example, when a farmer might be attached to a particular cow but must have it killed for economic or epidemiological reasons. In terms of animal and veterinary ethics, this paints a bleak outlook – following Gillespie (2014) these animals exist as sellable and killable produce, even victims of sexualised violence and vets enable this to happen. Vet students have to harden themselves to this inescapable reality or else be judged as unsuitable for large animal practice. It seems that the university farm is a site where capital-centric, patriarchal structures dominate and animals have reduced, even minimal, rights.

This cannot be denied but it is not the whole story. Aside from focusing on what vet students and staff said about the farm in relation to empathy, professionalism and education, engaging with non-verbal, multi-species communication and the more-than-representational allows other stories to be told. Not stylised stories fit for a James Herriot idyll, nor of dairy-industry production driven “hellscape”, but lines of enquiry that come to life in the ethical in-between. I drew a thread through this chapter of affective animal husbandry, highlighting otherwise overlooked moments of empathy between vet student and animal. I focused on Sarah and her sometimes stressed relationship with farming – her killing of a lamb is exacted because she recognises its immense suffering, enacting an uncomfortable more-than-human empathy in the process. This move is neither right nor wrong and Sarah cannot herself resolve the moral quandary. Another central aspect of affective animal husbandry as something created by animals as well as humans, is animal resistance to human-centric structures such as times when a cow vocalises out of turn and another stretches across the fence to lick a student in curiosity. These occasions and action show how animals on the farm do have agency and how this might allow a reconfiguration of power along non-anthropocentric lines. The university farm may be bounded and ordered but it is also mutable. It is the more-than-human geographical approach developed in this thesis, which privileges sites and not scales, that allows these realities to be recognised and allows an animal-focused narrative to become important in veterinary ethics and animal welfare.

Site #4

In the final empirical chapter, I worked with 5th year BVMS student Natalie, who honed her clinical skills working in the Small Animal Hospital (SAH). The SAH is a clinical location populated by real, sickly animals and their fee-paying owners. Professionally speaking, the pressure is on. Here I analysed what constitutes ‘the veterinary clinic’ in the material spaces of SAH, and through the practices, processes and atmospheres which enact more-than-human clinical expertise, creating notable types of veterinary professionalism. To do this, I draw on Foucault’s concept of the ‘clinical gaze’ and try to extend its anthropocentric capacities by utilising Mol’s (2002) notion of ‘ontologies of disease’.

Accompanying Natalie and her senior vets, we investigated the case of Tessa. Moving through the diagnostic process and the different spaces designed for its practices, we understand how disease is made through site-based ethics; diagnosis is not objective,

linear and created purely by the application of prior knowledge, but is messy and atmospheric. Tessa is part of the conversation about her condition and moves from being a disembodied set of case notes to a patient corporally and audibly involved in the physical examination. This is all a part of Natalie's development of practical skills and how she learns clinical expertise. This late stage in the BVMS degree at once involves the most ethical and ontological uncertainty, and the most embodied confidence in being a good vet.

Part of this confidence comes from the embodiment of a distinct form of veterinary professionalism. Whilst this is discursively enabled in the lecture theatre, here it is put into practice. We see this firstly in the communication skills class, where exercises are closely tied into working in the SAH. The complex emotional geographies and affective atmospheres formed through the staging of this class revealed how students are taught to physically manage emotions by distancing their own feelings and performing a professionalised, human-focused empathy. This type of empathy is appropriate, never excessive and allows for the job to get done. Animals are strangely distant from these debates and practices of professionalism, and thus are placed outside this central attribute of becoming a vet.

By enlisting a form of speculative ethics, I considered how these controlling emotional and affective geographies might affect animals in the SAH and how situated anxious atmospheres arose when vet students struggled to attend to the demands of professionalism. Tentatively, I experimented writing from the perspective of a dog being moved through the hospital in order to imagine how she might develop her own emotional geographies in a controlling, bordered and human-centric clinical space. I considered the anxious practices of vet students within the SAH and how the culture of emotional resilience and perfectionism means affect will always leak out of professional relations. To deal with this, I suggested that a better appreciation of the excesses of more-than-human empathy is necessary. This includes recognising how the impossibility of 'always doing your best' and occasional 'failure' are central in more-than-human veterinary medicine.

Some limitations

Approaching a large, educational institution as a site of research was always going to present me with limits beyond my control. In terms of physical space, the vet school

covers many acres of land, probably hundreds of buildings and a myriad of corridors, dead ends and wrong turns. The online world of the vet school, incorporating its website and virtual learning environments, is equally as circuitous and vast.

Aside from not having enough time to cover these physical and virtual spaces, the vet school is also a place with very clear lines of privacy. As I have shown throughout this thesis, spatial control is essential to the smooth working of the vet school. Client confidentiality, biosecurity and the health and welfare of animals, students and staff are not to be taken lightly, so there were many spaces I was unable to access such as the operating theatres, post-mortem room and much of the equine hospital. Although I had permission to be within the vet school property, accessing practical classes on a daily basis required ongoing communication with academic staff who were often too busy to deal with my requests - this was a working environment where multiple scales of legislation and rules worked against me. To counteract this, I took a strategic approach to navigating the vet school, selecting the distinct sites and educational stages that make up the thesis' empirical chapters. My site-based approach was also theoretically informed, as I sought to generate focus and depth as opposed to representative breadth. Overall, I managed to work with all BVMS year groups and several key sites of learning. These physical and legislative limits also affected the species I was able to include in this research. Whilst there are lots of cattle, dogs and some horses in my account, there is a lack of cats, sheep, pigs, 'small furrries' or reptiles.

A key part of a veterinary education is Extra-Mural Study (EMS) or 'seeing practice', where students spend a sustained amount of time (between four and six weeks) shadowing vets in a working veterinary practice outwith the vet school. This is done during holidays in the academic year, with students often travelling worldwide to follow new opportunities. Logistically it was too difficult to carry out participant observation of students in these international settings – students sometimes struggle to find places with enough time and space to accommodate anyone other than themselves. As is evident throughout the thesis and specifically in the Methodology chapter, I accessed students' experiences of EMS by covering this topic by in an EMS-dedicated interview. Of course, this is not the same as 'being there', but it was the most practical compromise.

Conceptually speaking, there could have been multiple different versions of the vet school story. Throughout my time there, situations arose that I wished I could attend to but were outwith the theoretical remit of the research. I will mention two notable issues

here. First, there is space for research that approaches the vet school with a political economy line of analysis. This would produce outcomes very different from my own, although of equal importance. Specifically, there is a need for research that better interrogates the categories of 'large animal' and 'small animal' in relation to the differing business practices of farming and pet-based veterinary medicine. The notion of animals as 'workers' within the vet school is not pursued in my research, neither is the recent development of multinational neoliberalising practices in veterinary medicine.

Pursuing a better understanding of how gender, sexuality and race are intersectionally lived through in veterinary medicine is also another avenue for future research inquiry. As well as my own experience as a woman working in veterinary medicine, I listened to many throw-away comments which suggested how the vet school orders gender, sexuality and race in association with animality. Progressive, grassroots organisation is occurring around these issues (as in the British Veterinary Association Ethnicity and Diversity Society (BVEDS) and the British Veterinary Associations LGBT+ Group (BVLGBT+)) and this is where this research should situate itself.

What does this mean for veterinary medicine?

Setting the agenda for veterinary medical humanities

This thesis goes some way towards setting a new research agenda in veterinary medicine and impacts the discipline in academic terms as well as in education and in practice. It has not been my intention to discover something entirely 'new' about the profession in and of itself. Innovation instead comes from a taking different philosophical and ethical perspectives, and working them through the realm of practice. There are many references to 're-configuring', 're-working' and 're-thinking' veterinary medicine as it has been my intention to build in respect for the profession, not replace an old system with my better one. This is because I myself am an outgrowth of veterinary medicine and have never been an objective assessor of the profession, and because I am a practitioner of an STS-informed approach which proposes co-production with science, as opposed to setting oneself against it.

This thesis therefore provides the groundwork for the academic development of critical veterinary humanities. Whilst medical humanities is considered a valued aspect of human medicine education and can be studied as part of an intercalated medical degree, the same

cannot be said for veterinary medicine. Veterinary ethics, animal welfare and professionalism are increasingly included in veterinary education but, as I have shown, this is primarily an education in how to apply pre-existing ethical frameworks that do not question dominant ethical bases of the profession. Following on from this thesis, a nascent 'veterinary medical humanities' would investigate taken-for-granted aspects of veterinary medicine through a critical lens, informed by cultural, social and ethical theories normally considered to be outwith the remit of the profession. This agenda gives value to the 'more-than-scientific' conduct of veterinary medicine and contends that it is inherent to a veterinary education. It is not about studying how veterinary medicine impacts upon an anthropocentric society, but considers the profession as already in the mix of the world. To realise this, research in veterinary medical humanities needs to be interdisciplinary so that all stakeholders potential stakeholder are part of the conversation. Some research within the One Health agenda works towards this by considering global health across species lines, such as the Zoonoses and Emerging Livestock Systems (ZELS) research group, but this sort of critical-ethical lens needs more widespread application.

It is more pertinent than ever that veterinary medicine takes this seriously. Vets continue to work as spokespeople for animal welfare in a political landscape where the basis of what constitutes 'animal' and 'welfare' is up for debate (BBC, 2018). These categories are of course always ontologically ambivalent, but the way in which these terms are potentially being reconfigured at policy level means that vets need to be informed of the ethical complexity of human-animal relations. They need a broader language and more politically critical ability to debate. Paraphrasing Gail Davies, vets can never proceed as if ethical, political and ontological discussions have been closed off prior to their involvement.

Towards a critical veterinary education

Veterinary education research is currently thriving as the profession takes seriously the move from small, owner-practitioner led veterinary practices to multinational veterinary services, increasing the need to include training in business management, leadership and marketing (Vet Futures, 2018). Veterinary education is also coming to terms with the current mental health crisis within veterinary graduates who report greater disillusionment, compassion fatigue and burnout (VetLife, 2018). The pressures put on graduates to excel academically, develop market expertise, provide high quality, value-for-money care and look after themselves are extraordinary.

Situated in the midst of this challenging landscape, this thesis offers a number of contributions to the field of veterinary education, specifically within the wellbeing agenda. Throughout this research, it is clear that 'the emotional side' of veterinary medicine is overtly acknowledged with references to how to act during euthanasia and how to break bad news, to name only a few instances. Perhaps the most critical insight in this research is how this emotional literacy is controlled and woven into appropriate, professionalised performances of emotion, contributing to a culture of resilience. As such, current educational practices go only part of the way towards grappling with emotion in veterinary medicine. Emotion and affect remains measured and kept in line by one's embodied professionalism.

This is of course not to say that vet students and the institution of the vet school are cold and lack feeling; quite the contrary in fact. This research goes a long way to showing how more-than-human emotional and affective connection make veterinary medicine care-full and empathetically informed.

What I am not suggesting then is that vet students need to care 'more' or need to better 'demonstrate' empathy for animals. This is not about creating another job for vet students to do in an impossible drive to be everything, for everyone. I worry however that, without the critical and political stance I have taken towards emotion in this research, the wellbeing agenda will end up becoming that – another task for the good, well-rounded vet to complete. In the current drive to address mental health problems by preparing vet students for the 'real world', veterinary education risks overlooking the less easily understood relations between science and emotion, and human and animal. Vibrant tensions can get written over with well-meaning pragmatism.

If vet students do not need to care more and be more empathetic, then what can veterinary education take from this research? I propose there are three central points. First, that more-than-human ethics and politics are always embedded in diverse practices of education. Humans do not set the ontological conditions and separations before the practice of veterinary medicine occurs. Better recognition of this contingency, through more critical and creative education involving animals is possible. Second, that increased certainty in veterinary practices, marked through evidence-based outcomes and measurement, does not necessarily produce better care, nor empower those who receive it. As I have shown throughout this research, evidence-based care can be better conceptualised as a more-than-human empathy attending to the ethical tensions at the

site of care. This is not to contradict evidenced-based care and medicine, rather it is to offer a more open, politically conscious alternative vision. Third, by combining the above two points, I suggest it is possible to improve the experiences of students and animals in veterinary education. A more serious recognition of the contingencies at the heart of veterinary practice and better discussions around 'failure' could relieve the pressures of professionalism within students, whilst acknowledging that animals take part in non-verbal, sensuous conversations about their care raises their political status and enables empathetic practice.

What does this mean for human geography?

More-than human geographies of care

At the heart of this research is the conducting of care, in all its complexity, conceptualisations and configurations. Leaning on emotional geographies, non-representational geographies, STS and a feminist ethic of care, this thesis does not seek to answer the question of defining 'good care', but instead explores how it emerges as a geographically situated phenomenon. Here, I detail the specific ways in which this research works upon and enlivens the field of care geographies.

Care as more-than-human tension

By expanding out from the broad term 'hybrid geographies', this thesis investigates how the more-than-human applies to a situation of care and how it might re-imagine that care. Whatmore's (2002) notion may be the conceptual starting point for this but by engaging with Davies (2012), Davies *et al* (2018) and Greenhough's and Roe's (2012) research in a veterinary context, I provide new depth and breadth to what can be considered 'more-than-human care'. I show care to exist in a spatially and affectively produced tension with harm so that what is seen to be 'good care' is a matter of ethics and politics, and not moral judgement. Although these relations are often uncertain due to the recognition of non-human agential forces, taking a geographical approach shows that these ethics do not come from nowhere - affect and emotion can be manipulated and structured (Anderson, 2009). This research therefore speaks to geographical debates where care is ethically and politically problematised along ontological lines. In particular, these conclusions speak to Davies *et al* (2018) 'cultures of care', an approach that also creates a landscape for exploring 'ethical response-ability' in human-animal care relations. Whilst more-than-human tension destabilises, it more importantly provides geography with the ethical

circumstances to create “as well as possible worlds” (Puig de la Bellacasa, 2017: 7). As such, this thesis builds upon Puig de la Bellacasa’s notion of matters of care by presenting more-than-human empathy as a potential conceptual route into care. More-than-human empathy is elusive but it offers something additional to conceptualisations of care: it more explicitly suggests embodied vulnerability whilst going beyond the subjective and potentially appropriating aspect of ‘being in another’s shoes’. Like how Puig de la Bellacasa (2017; 2011) states that it is important which things are framed as ‘care’, as opposed to something else (‘concern’ for example), I believe it is productive to perceive certain relations as empathetic so as to critically re-evaluate the ontological politics of empathy beyond perspectivalism and along more-than-human lines.

Care as a sensuous science

If the former discussion on the more-than-human seems an abstract conclusion, then imagining care as sensuous science is a call for geography and care to always be grounded in the material, the corporeal and the tactile. A vital point this thesis makes is that science and emotion are not separate, and that care is made through their embodied co-production. This conclusion is made possible through a material engagement with science where I investigated the multitudinous, hands-on practices of veterinary education.

In terms of human geography, this provides a strong case for the continued recognition of the tangibility of ‘things’ as spatially constructive – conclusions about the more-than-human could not be made without my experiential engagement with the spaces of the vet school, my manipulation of animal bodies and the sense of bodily weariness after a hard day’s work. It is, in particular, a call for sustained attunement with animal sensibility in geography, not just an account of the philosophical possibilities of posthumanism. The sensuous science seen developing as the thesis progresses is a form of material care for the animals, objects and structures of the vet school. As such, this conclusion addresses concerns in contemporary animal geography and contributes to more-than-human methodological debate. I also centre the notion of care as sensuous science in existing debates about feminist materialist geographies, where tactile attention to, and evocation of, the site of care is important. This thesis thus seeks to answer Dixon’s (2016) question of how to make these practices matter politically and also attends to Patchett’s (2016; 2012a; 2012b) call to story alternative engagements with more-than-human skill. Influenced by Ingold’s (2000) ecological perspective of skill and Grasseni’s (2007) notion

of 'skilled visions', this thesis takes these concepts into a new field and therefore broadens and enriches work on skill within human geography.

Affect, atmospheres and the more than representational

Exploring veterinary education beyond quantitative evidence and beyond the confines of human-centred medical practice has required me to work with non-verbal, human-animal communication and affective/emotional relations. Therefore, in order to fulfil the aims of this thesis, an engagement with and development of, non- and more-than-representational geography has been essential.

By nature, this form of 'data' is slippery, intersubjective and so tricky to pin down. It does not lend itself to analysis through systematic coding and it can produce multiple, sometimes contradictory, social and cultural meanings. The contemporary issues in more-than-representational geography are thus to explore why affect and emotion are geographically important and secondly, to experiment with ways of representing it. Throughout this thesis then, I have grappled with the affective relations between humans and animals, and science and emotion through a focus on material, embodied practices. Mindful of McCormack's (2003) argument that the theory cannot be separated from practical actions, my research practice was not so much a matter of micro-level scrutiny of a learning environment, nor a gaining a god's eye view of the affective data, but was realised through heightened capacity for sensing mood of a site, perhaps better termed as a form of *analytic feeling*. This research makes its contribution to more-than-representational geography by seeking to imbue this thesis with an affective resonance from the outset. In this way, affect and emotion is the topic, the means of research and its outcome.

Loosely termed and utilised by a range of more-than-representational geographers, affective atmospheres have been used as a way to conceptualise how affect and emotion issue out of social relation and circumstance (Anderson and Ash, 2015), destabilise subjectivity (Anderson, 2009) and act as a 'space of an objective discharge' (Shaw, 2016). Throughout the thesis, I have invoked these arguments and extended the concept of affective atmospheres into more-than-human veterinary practice. Specifically, this research demonstrates how atmospheres are manipulated within the spaces of veterinary education and are central in the mobilisation of intersubjective clinical knowledges. Through my own use of this concept on top of pre-existing evidence, it is clear, to me at

least, that space can be opened for affective atmosphere to be used a key analytic within more-than-representational geographies.

Creative non-fiction in human geography

Throughout this thesis, I have developed a form of creative non-fiction writing in order to attend to issues in animal and emotional/affective geographies and STS, and bolster this style of writing in human geography. For me, this methodological endeavour is central to imagining a more-than-human geography of empathy.

Whilst this methodological technique is not new in itself, my approach builds upon an existing history of creatively-informed writing within cultural geography, particularly work that seeks to explore the interrelations of place, emotion and living with nonhuman others. Most notably, my understanding of this methodology is influenced by Hayden Lorimer (2018; 2010; 2006), John Wylie (2010; 2009), Kathleen Stewart (2015; 2011; 2007) and, laterally, Dydia DeLyser and Harriet Hawkins (2014).

By evoking instead of explaining the 'data' and by recognising the fluidity between the real and the imagined (Rabbiosi and Vanolo, 2017), I hope to have enlivened the worlds of the vet school by offering a series of narrativised stories. Cautious of anthropomorphising animal participants, I have written about interactions between the animals and humans involved and, with due caution, imagined the animal point of view. All of this I judge a useful level of risk.

It is, however, a methodological approach offering a number of additional contributions to human geography. First, it injects emotional geography – often emotional in topic but not in its reading - with evocative sensibility so that the thesis can be an affective experience in itself. Attending to affect, atmosphere and mood requires this willingness to experiment with subjectivity, tone, form and style in writing. Second, by my own measure, creative non-fiction allows more of the beastly mess of working with animals to enter animal geography scholarship. Too frequently written out for the sake of clean academic prose, these animal-based stories might not succeed at representation but the attempt highlights the ontological ambiguity of the more-than-human. These two points together can lead to a way of *writing with empathy* within human geography.

Creative non-fiction writing also makes *writing for empathy* possible within the subject as it provides a way of realising the creative challenge of speculative ethics. This thesis has been written to imagine new ethical worlds, where the emphasis is on the ‘what if’ of human-animal relations, instead of drawing clear lines between the two. An important aspect of this, as will be detailed in the Conclusion’s final section, is demonstrating a sense of vulnerability, even a confessional tone, in research outcomes. If we are to contend with the excessive qualities of more-than-human caring relations, then there is a continued future in experimenting writing with excess in human geography.

More-than-human empathy for ‘as well as possible worlds’

Whilst ‘care’ has been conceptualised consistently throughout the histories of human geography, empathy has, for a long time, fallen by the wayside. Implicitly inferred in academic work or systematically explained away, empathy is often uncritically thought of as a positive human quality and scientifically analysed as a complex, inner facet of psychology. Neither of these approaches strikes me as particularly satisfying, but they do suggest a starting point. Empathy is there, *doing things*.

I have struggled with the term empathy (is it a sensibility, or an emotional mode, or a conscious thought?) at every stage of this thesis because it eludes definition. The struggle relates to literatures on the topic, working with its expression in fieldwork, scrawling arrows of feeling as I tried to work out how empathy came to life, where it was situated and all those it encompassed. Whilst I do not have a settled answer to what empathy is, I have highlighted the need for a more cultural, critical and politically engaged notion of more-than-human empathy, and began this task in this thesis. I try to make it appropriate for our inherently multispecies, messy, crumbling lives, an empathy for ‘as well as possible worlds’ (Puig de la Bellacasa, 2017). To end this thesis then, I will lay out some of the things I think characterises this more-than-human empathy.

More-than-human empathy is a particular way of configuring care that hinges on an affective resonance that comes into being through touching and being touched. Its geographies are realised at the site of this touching. This touch is material but it is not always a comforting hand on the shoulder and doesn’t always involve the warm glow of positive emotion. It can be the drag of a scalpel through dead flesh, expressed as a sigh, seen as a frown, or happen through the click of a mouse.

These tactile moves create an empathy characterised by *feeling with*, not feeling for. It is not a move of one's subjectivity into another's being, a form of deliberate self-projection, but is a recognition of ontological connection. More-than-human empathy starts a conversation between sameness and difference.

Who is it that takes part in this conversation? These tactile moves are not created purely through conscious thought, and are not the exclusive domain of humans. All it requires is a sentience based upon the capacity to suffer - a sentience borne of somatic sensibilities. Although more-than-human empathy is made up of the emotional and the rational, the latter does not improve it. Measuring empathy does not make it more believable or better to receive.

More-than-human empathy is merely a sensuous attunement to living, not a set of techniques. It is a methodology, not a method.

Perhaps most importantly however, more-than-human empathy is political. The recognition of the corporeal and existential vulnerability that enables empathy also apprehends body politics: some power is given up when bodies enter into more-than-human empathetic relations.

This can all make it seem like more-than-human empathy is a never-ending web of generating relations. A proliferation of generative positivity across a network of bodies who are equal in their vulnerability. Some bodies however are more vulnerable than others and empathetic relations can be structured by inequality. More-than-human empathy does not seek to erase difference but provides the circumstances to investigate it at its source, and in the sites that it is distributed through.

More-than-human empathy will not then 'fix' the problem of how to care better in human geography and in veterinary medicine. Does this represent a failure in my research?

Echoing Puig de la Bellacasa (2017: 218): "Is insisting, as I have done, on how other than humans 'take care' of the more than human web more than a wishful metaphor?"

If untangling the geographies of more-than-human empathy and care *does* come down to wishing and imagining, then it indicates no small feat and no failure: it is through this tentative foray into the speculative that we can bring new, ethical possibilities into action.

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Glossary

Anaesthesia –

Refers to the medical practice of making animals unconscious or numb to pain using controlled drugs so that a vet can carry out painful interventions such as surgery.

Bachelor of Veterinary Medicine (BVMS) –

The title of the undergraduate veterinary degree within the Vet School.

British Veterinary Association (BVA) –

The representative body which supports vets throughout the UK. Different from the RCVS which focuses more on legally regulating profession.

Bovine –

Relates to the biological family of Bovinae, which includes cattle, antelopes and buffalo.

Direct Observations of Procedural Skills (DOPS) –

A form of practical assessment within the BVMS degree involving working with live animals in realistic scenarios (in contrast to the other practical assessment, 'OSCEs', which are carried out in simulated environments). They are used within each stage of the BVMS degree starting with more basic skills such as hand-washing and simple animal handling skills in Foundation level, progressing to more complex skills such as inducing anaesthesia in the Professional stage.

Endoscopy –

An advanced internal imaging procedure which involves a vet inserting a long camera into an animals' stomach, oesophagus, airways and large intestine for the purposes of diagnosis of disease.

Equine (Veterinary Medicine) –

Equine Veterinary Medicine is a branch of the profession which involves the medical care of horses. It is a specialism usually separate from Large Animal Veterinary Medicine even though horses often live on farms. This is because horses represent a liminal position within veterinary medicine as they are often both farm animals and pets.

Large Animal (Veterinary Medicine) –

Large Animal or Large Animal Veterinary Medicine refers to the medical care of livestock, production animals or, more generally, those animals which live on farms including cattle, sheep, pigs and poultry. It does not precisely refer to an animal's size as, for example, chickens would come under the remit of LA veterinary medicine. Veterinary practices which do large animal veterinary medicine often also carry out equine medicine because horses are likely to be situated in the same farming landscapes.

Maedi-Visna Disease –

A viral disease affecting sheep which was introduced to the UK via sheep imports. Following Scotland's Rural College (SRUC): "The name derives from two Icelandic words which describe the main clinical signs of pneumonia and wasting".

Neurology –

A form of veterinary (and human) medicine which relates to diseases of the Central Nervous System (CNS).

Objective Structured Clinical Examination (OSCE) –

A type of hands-on assessment within the BVMS degree which tests clinical and practical skills in simulated scenarios. An OSCE consists of multiple stations at which the student must complete a practical task during a limited time period whilst being observed by an assessor. They are carried out in the Foundation and Clinical stages of the BVMS degree and can form formative or summative assessment.

Royal College of Veterinary Surgeons (RCVS) -

The statutory regulator governing the veterinary profession in the UK.

Small Animal (Veterinary Medicine) –

Small Animal or Small Animal Veterinary Medicine is a branch of veterinary medicine which generally relates to the medical care of companion animals. This includes dogs, cats, pet birds, pet reptiles and 'small furrries' (rabbits, hamsters, guinea pigs, chinchillas, mice, rats, ferrets etc.) Like Large Animal, the term Small Animal does not refer exactly to the animal's size.

Appendix A

RCVS Day One Competences

Adapted from (RCVS, 2014)

Competence		Guidance
1	Be fully conversant with and follow the RCVS Code of Professional Conduct.	See www.rcvs.org.uk/vetcode
2	Understand the ethical and legal responsibilities of the veterinary surgeon in relation to patients, clients, society and the environment.	<p>To abide with the principles in the Code of Professional Conduct, veterinary surgeons need to be able to make professional judgements based on sound principles. They must be able to think through the dilemmas they face when presented with conflicting priorities and be prepared to justify the decisions they make.</p> <p>As well as decisions relating to individual patients, animal groups, populations of animals and clients, veterinary surgeons must take account of the possible impact of their actions beyond the immediate workplace, e.g. on public health, the environment and society more generally.</p>
3	Demonstrate knowledge of the organisation, management and legislation related to a veterinary business.	<p>This includes:</p> <ul style="list-style-type: none"> • Knowing one's own and the employer's responsibilities in relation to employment, financial and health and safety legislation, the position relating to non-veterinary staff, and professional and public liability • Awareness of how fees are calculated, of income, overheads and other expenditure involved in running a veterinary business • Ability to work with various information systems to effectively communicate, share, collect, manipulate and analyse information • Importance of complying with professional standards, protocols and policies of the business • Knowledge of legislation affecting veterinary businesses, such as the disposal of clinical waste and safety of medicines.
4	Promote, monitor and maintain health and safety in the veterinary setting; demonstrate knowledge of systems of quality assurance; apply principles of risk management to their practice.	This includes knowledge and explanation of the procedure for reporting adverse incidents and the procedures for avoiding them. It also includes following safe practices relating to the dangers of the workplace.
5	Communicate effectively with clients, the public, professional colleagues and responsible authorities, using language appropriate to the audience concerned.	Effective communication includes effective listening and responding appropriately, both verbally and non-verbally, depending on the context.
6	Prepare accurate clinical and client records, and case reports when necessary, in a form satisfactory to colleagues and understandable by the public.	Patient records should be clear enough that they can be referred to by others and (if written by hand) legible, avoiding idiosyncratic abbreviations or jargon, so the case can be taken over by another professional for ongoing treatment if necessary.
7	Work effectively as a member of a multi-disciplinary team in the delivery of services.	The team may include veterinary nurses, practice managers, technicians, farriers, nutritionists, physiotherapists, veterinary specialists, meat hygiene inspectors, animal handlers and others. The veterinary surgeon should be familiar with and respect the roles played by others in the team and be prepared to provide effective leadership when appropriate.

8	Understand the economic and emotional context in which the veterinary surgeon operates.	Veterinary surgeons need to be resilient and confident in their own professional judgements to withstand the stresses and conflicting demands they may face in the workplace. They should know how to recognise the signs of stress and how to seek support to mitigate the psychological stress on themselves and others.
9	Be able to review and evaluate literature and presentations critically.	New graduates must be able to appreciate the difference in value to be attached to different sorts of literature and evidence, for example, recognising commercial and other forms of bias.
10	Understand and apply principles of clinical governance, and practise evidence-based veterinary medicine.	More guidance on clinical governance is included in the supporting guidance to the Code of Professional Conduct. It includes critically analysing the best available evidence for procedures used, reflecting on performance and critical events and learning from the outcome to make changes to one's practice.
11	Use their professional capabilities to contribute to the advancement of veterinary knowledge, in order to improve the quality of animal care and public health.	The veterinary surgeon must think beyond the immediate case in hand and take up opportunities to the processes of continuous improvement. This may include clinical audit, case discussions, research and adding to the evidence base for others to draw on in the future.
12	Demonstrate ability to cope with incomplete information, deal with contingencies, and adapt to change.	Veterinary surgeons must be able to manage cases and make decisions where there is incomplete or unclear data. It is not always possible to run a full set of tests or range of diagnostic procedures which may preclude the investigation of the 'perfect' case. They need to be able to adapt their approach to fit changing circumstances, know how to cope appropriately with contingencies and the unexpected, and identify appropriate options for further diagnosis, treatment and/or referral, should a case require it.
13	Demonstrate that they recognise personal and professional limits, and know how to seek professional advice, assistance and support when necessary.	Veterinary surgeons undertaking procedures on patients must at all stages in their careers be competent in their performance, or be under the close supervision of those so competent until such time as they can act alone.
14	Demonstrate a commitment to learning and professional development, both personal and as a member of a profession actively engaged in work-based learning. This includes recording and reflecting on professional experience and taking measures to improve performance and competence.	It is a requirement of the RCVS Code of Professional Conduct that veterinary surgeons must maintain and develop their knowledge and skills relevant to their professional practice and competence. New graduates must be prepared to take part in the RCVS Professional Development Phase (PDP) and be ready on graduation to make the transition to being an independent learner responsible for their own professional improvement and development. This includes being able to reflect, learn and share information gained with others.
15	Take part in self-audit and peer-group review processes in order to improve performance.	Veterinary surgeons must regularly review how they are performing in their day to day professional work and play an active part in performance appraisal. New graduates in clinical practice must take part in the RCVS Professional Development Phase and keep a record of their continuing progress until they have met the year one competence level.

Appendix B

Example Information Sheet and Consent Form for participant observation

Information Sheet

Learning to become a skilled veterinary surgeon: A study into expertise and compassion in animal care education

My name is Megan Donald and I am a PhD researcher from the School of Geographical and Earth Sciences at the University of Glasgow in Scotland. This information sheet aims to provide you with some details about my research and your possible involvement. Please feel free to ask any questions.

What is the aim of the research?

The purpose of this research is to understand more about how veterinary medicine students learn to become vets that are caring and compassionate towards animals, as well as able to follow formal, scientific procedures. I am interested specifically in how students learn to engage with animal and learning equipment through practical, hands-on skills. The aim is to investigate and show the relevance of these more personal sensitivities to veterinary education and animal welfare at a wider scale.

What could my role be?

I would like to see how students work and learn their subject on a day to day basis. I am therefore asking if you allow me to sit in and observe lectures, seminars, laboratory classes, libraries and other practical teaching environments. I would like to do this in order to better understand the learning habits of students and so might also ask some questions regarding this.

Confidentiality

Full anonymity will be offered by assigning you with a pseudonym at all stages and you will not be able to be identified through the research. You will also have the right to review all recorded materials and ask for them to be deleted if they are deemed to be of a too personal or private nature. If you have concerns about the way the research was conducted and feel you have in any way been treated unfairly, you have the right to contact the University Ethics committee that approved this research or the supervisors below.

What will happen with the information?

The information you give will be processed and written up in order to complete my doctoral thesis at the University of Glasgow which is funded by the Economic and Social Research Council. It may also be used in academic publications.

If you are happy to take part and fully understand this information, please read and sign the related consent form. Thank you for your time reading this and please keep it for further reference.

Consent Form

Consent Form For Participant Observation

I would be grateful for your consent to allow me to carry out the research as detailed in the information sheet. Information will be used subject to you giving your permission with this consent form. This form will be kept confidential. Please tick the box if the statement applies.

- I have read and understood the Information Sheet
- I agree to take part in this study
- I understand that I can withdraw at any time
- I understand that my contribution will be anonymous

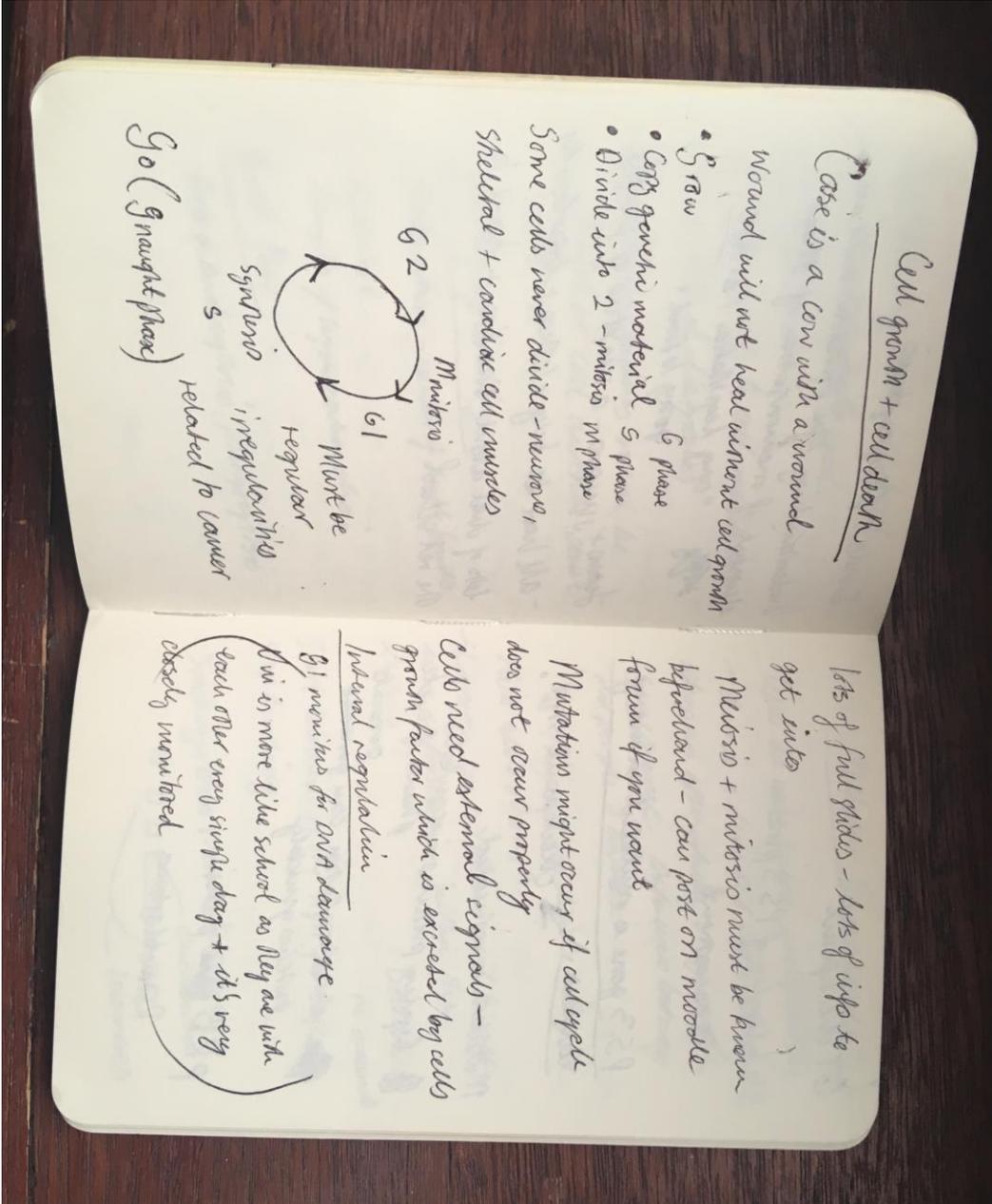
Name in block capitals:

Signed:

Date:

Appendix C

Excerpt of field notebook



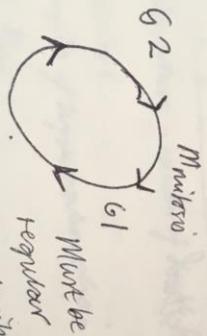
Cell growth + cell death

Case is a cow with a wound

Wound will not heal without cell growth

- G row
- Copy genetic material S phase
- Divide into 2 - mitosis M phase

Some cells never divide - neurons, skeletal + cardiac cell muscles



G0 (quiescent phase)

Mitosis must be regular
S irregular related to cancer

lots of full studies - lots of info to get into

Mitosis + meiosis must be known beforehand - can't post on mobile forum if you want

Mutations might occur if cell cycle does not occur properly

Cells need external signals - growth factors which is excreted by cells

Internal regulation

G1 monitors for DNA damage

Am in more like school as they are with each other every single day + it's very closely monitored

Appendix D

Example of annotated Anatomy Demonstration worksheet

Can't help but laugh
Kind of horrified at the alien structure
"Jesus! Look at the size of it. What is that to end of it?"
what a disappointing
people really don't want to touch this no + are very unsure of it all.
'Can't even see what it is. It looks
stump of a tail,
it's probably a dog?'
Station 5: Dissected Canine Prepuce and Scrotum Specimen
Cadaver/specimens
don't look like animals

Examine the dissected canine prepuce and scrotum (testis absent in this specimen). What are the inner and outer surfaces of the prepuce called?
girl standing about 2m north
she's not behind on
objectivity is key - think across species but also be
Anatomy lecture in morning, this straight after -
kinda confusing - 'it's ok, you'll be fine, it's not too hard'.
- equine, small ruminant etc
VERBAL SUPPORT
 From where do the preputial muscles arise?

Which major vessels supply blood to the prepuce?
Also talk about personal things which I feel I can't discuss in to - need to drift away
There is no real sense that today relates to a living animal
with feelings
 What is the difference in location between the scrotum of the dog and cat?

Not wanting to touch
vs. other's being wanting to get closer + see -
PHYSICAL HELP
"see? It's here"
Alphacaver - surprise?
There's so much detail + it's the first time I've done this anatomy
Station 3: Canine Testes
Tim's made up
No, it's something else
Figuring out the Latin together - from baffled to reasonably away pretty quickly

What is the layer of tissue enclosing the testis? What tissues lie within this capsule?
particulars quickly
GRM, MACNSRE
FASCINATION
 What is the structure marked 1? What does this contain and what is its function?
Students physically help each other

