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A Life after the Laboratory: Exploring the Policy and Practice of Laboratory Animal Rehoming

by

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Abstract

There are increasing calls in human-animal studies for a recognition that animals are, and have always been, central mediators in cultural, political and historical understandings of the world, whether in the farm, zoo, home, or laboratory. Human-animal relations are particularly complex in the ethically contested laboratory space, where staff are responsible for caring for, harming, and culling, animals on a routine basis. The placement of such animals into the human home once research has been completed is thus introduced as an ethical practice, allowing the extension and enrichment of animal life. Drawing on a questionnaire, stakeholder interviews and ethnographic methods, this thesis explores the socio-cultural and political importance of the growing attention toward rehoming, and the belief that certain species, namely cats and dogs, should be individualised, kept in the home, and permitted to develop deep and personal attachments to humans. In particular, I ask both why and how an animal can move from being considered a scientific tool, with solely utilitarian use, to assuming a status as a loved family member. I find that rehoming opens up new spaces to care and to conceive animal welfare, helps us to understand the symbolically contested space occupied by animals as wild, laboratory animals, or pets, and allows us to probe the emergence of novel stakeholder relations between research facilities, rehoming organisations, wildlife sanctuaries, and pet owners.

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Research Thesis: Declaration of Authorship

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I declare that this thesis and the work presented in it are my own and has been generated by me as the result of my own original research.

I confirm that:

1. This work was done wholly or mainly while in candidature for a research degree at this University;

2. Where any part of this thesis has previously been submitted for a degree or any other qualification at this University or any other institution, this has been clearly stated;

3. Where I have consulted the published work of others, this is always clearly attributed;

4. Where I have quoted from the work of others, the source is always given. With the exception of such quotations, this thesis is entirely my own work;

5. I have acknowledged all main sources of help;

6. Where the thesis is based on work done by myself jointly with others, I have made clear exactly what was done by others and what I have contributed myself;

7. Parts of this work have been published as:

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Signature: Date:

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Definitions and Abbreviations

LASA……Laboratory Animal Science Association

NC3Rs……National Centre for the Replacement, Refinement and Reduction of Animals in Research

EU……European Union

NIO…….. Named Information Officer

NACWO……..Named Animal Care and Welfare Officer

NVS……..Named Veterinary Surgeon

AT……Animal Technician

GM……..Genetically Modified

AWERB……Animal Welfare and Ethical Review Body

RSPCA……..Royal Society for the Prevention of Cruelty to Animals

A(SP)A ……Animals in Scientific Procedures Act

UAR…….. Understanding Animal Research

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"I loved the dog and she loved me. I wanted to reward her. Venus had given so much to science, and she deserved a life where she could enjoy the sight—seeing squirrels and trees that were previously obscured—she'd regained through the study"

"He's mild, he's sweet, and he's added a joy to our family. He's done his part, and now it's time for me to do my part for him"

"They've already done so much for humans. The least we can do is give them loving homes"

1. Chapter 1 – Introduction

I am sitting on the floor with Max, a rehomed laboratory beagle. He greeted me as I first entered his new home with a few excited barks before settling down. I observe that Max seems content, and not unlike other companion dogs I have encountered. I am unsure what I was expecting, but I do remember feeling slightly apprehensive about my first encounter with an ex-research animal. Max sleeps, occasionally stirring to check that Jane, his new owner, is still in the room. He is nestled in his new dog bed, complete with a strewn checkered blanket, a multitude of toys, and a chew. Jane tells me he tends to prefer sleeping on the sofa now he is less frightened of it, despite her initial attempts to stop this behaviour. In fact, Jane discloses to me that the hoover, washing machine, and even the carpet scared Max when he first moved to his new human house.

As I watch Max, I wonder what his life was like before he moved here, to a family home in a small village in the Midlands. I wonder what kinds of people he met, the environment he lived in, the interaction he had with other members of his species, and the kinds of work he engaged in during his previous life. Was he, or rather, his biological body, responsible for major human health breakthroughs? Or was he surplus to requirements, and thus not needed for the original purpose for which he was bred? I wonder whether he remembers, and even whether he misses, some of the people and animals he knew in his past life. I also wonder why he, in particular, and not others of his kind, was given the opportunity to leave the facility, how this decision was made, and how he was transported and prepared for life in a human home. Jane cannot tell me much; only that now Max is with her she wants to provide him with the best possible life, and that rehoming him has provided her with a sense of personal pride and fulfillment. Jane is eager that Max lives a 'normal' pet life, and takes him to training so he can socialise with other dogs. Jane tells me Max is a loved family member, and that she cannot now imagine life without him.

This thesis aims to address the questions raised in the passage above by exploring the changing policy and practice of laboratory animal rehoming. This includes an attention to the spaces of care that are opened up, the methods by which animals are trained to 'become pet', and the wider nexus of stakeholder relations that are navigated as laboratory animals transform into loved family members and companions. In the process, this thesis reveals the complex ways in which boundaries guiding traditional laboratory practices shift, transform, become more permeable, and are bridged through rehoming, in the process contesting and reframing previously accepted practices and meanings that shape life in the animal house.

Rehoming is defined by the UK Home Office[1] (2015a, pg. 10) as "*the movement of a relevant protected animal from an establishment to any other place that is not an establishment under A(SP)A."* The "place" referenced is most commonly a farm, aquarium, zoo or private home (Skidmore and Roe, 2020). Limited research explores the rehoming of laboratory animals, and even less does so from a social sciences perspective[2], yet the practice has been found to be beneficial in promoting the ethical profile of animal research (Carbone et al, 2003); boosting staff morale (Wolfensohn, 2010) and in improving the lived experience and quality of life of research animals (Prescott, 2006). Further, the rehoming of laboratory animals is becoming increasingly common (Döring et al, 2017), and 45% of UK households now own a pet, with the pet market predicted to reach £7 billion by 2021 (Statista, 2019).

In 2019, 3.4 million experimental procedures involving animals were carried out in the UK[3]. Due to the creation of more genetically modified animals, this number has been steadily increasing. 67% of animals tested upon are mice, 16% are fish, and 9% are rats. Experiments involving specially protected species (horses, cats, dogs and non-human primates) account for 1% of procedures (Home Office, 2019). Exploring societal perceptions of the use of animals in research reveals a complex picture; when considering the use of animals for research where there is no alternative, public opinion is balanced, with close to four in ten saying they can either accept (37%) or not accept (39%) the use of animals in research (Ipsos Mori, 2018). But this changes when accounting for species; the public are less tolerant of the use of dogs and cats. In fact, the European Directive 2010/63/EU (EU, 2010) states that "animals such as dogs and cats should be allowed to be rehomed in families since there is a high level of public concern about the fate of such animals."

Home Office Advice Note 03/2015, the current legislative framework guiding the rehoming of laboratory animals, seeks to provide general advice, including choosing appropriate animals to rehome, assessing the suitability of the new home and designing socialisation schemes, as well as more specific measures including record-keeping, dietary change and identification (Home Office, 2015a). The document also outlines good practice regarding the rehoming of different species (including traditional companion animals such as dogs and cats, but also rabbits, rodents and fish). The main objective of the Advice Note is to elucidate the conditions under which consent to be rehomed can be awarded. It alludes to important longitudinal and indirect implications of rehoming

[1] This document builds on the information provided in the Guidance on the Operation of the Animals (Scientific Procedures) Act 19861 (the Guidance) and actively aims to "encourage consideration of opportunities for re-homing and setting free suitable animals." (pg. 3)

[2] A notable exception being Koch and Svedsen (2015), who explored how the rehoming of capuchin monkeys altered the moral landscape in Denmark.

[3] It is impossible to know the number of animals used in experimental procedures, as the Home Office provides figures only for the number of experiments undertaken, and some animals may be re-used for these experiments.

(such as impacts on the ecosystem post-rehoming), and serves to guide the entire rehoming process, from immediately after permission has been granted, through to the establishment of the animal in its new environment and necessary follow up procedures.

Yet, despite the publication of regulation guiding laboratory animal rehoming, the release of the document arguably leaves us with more questions than answers. To ensure that the legislation can be relevant to all UK facilities, regardless of the research undertaken, or existing networks with stakeholders, the guidance is, in places, ambiguous and open to interpretation. For example, it is difficult to provide a definitive definition of an "appropriate socialisation scheme", as this will likely vary by individual animal. Further, there exist inherent complications in accurately assessing the "dangers posed to public health" after rehoming, especially when considering the rehoming of genetically modified animals. Consequently, rehoming provides a useful space for reflection and a way to interrogate broader notions of care, human and non-human health, ethics, death and welfare.

Rehoming also represents an opportunity to reject the widespread norm within animal research that death[4] is not a welfare issue, and instead promotes an ideal that both longevity of life, and life experience, are equally important in making assessments about animal welfare (Yeates, 2010). The study of animals' quality of life is an emerging theme that recognises the attainment of positive, rather than simply the avoidance of negative, states in animals. This so called "conceptual shift" (pg. 165) leads on from previous efforts to improve welfare by preventing mistreatment, to improving life conditions, enabling the animal to "flourish" (Brom, 1999). As previous research has asked: "Don't we, as researchers, owe our animals a different life after they have completed their contributions to science?" (McAndrew and Helms-Tillery, 2016; pg. 506).

This research will bring together this significant shift in ways to ensure high standards of animal welfare with research in the social sciences which explores why some animals are encouraged into the human home, and others excluded. Human ordering of animal life is not a novel practice; more-than-human work has turned its attention to the ways in which animals are spatially and categorically defined and bounded; Wolch and Emel (1998) and Philo and Wilbert (2000) propose that the spaces animals trace and occupy invite human orderings. Buller (2012) too discusses how animals are commonly denied movement and mobility (as seen in the laboratory, where animals are housed in cages, tanks, and pens, and more widely, not permitted to leave the boundaries of the laboratory).

[4] Although throughout this thesis I use the terms 'death', 'euthanasia', 'killing' and 'culling' interchangeably, I am aware of the development of each of these terms and the different connotations they hold. See Jepson (2008) for more detail regarding a linguistic discourse analysis for the killing of non-humans at https://brill.com/view/journals/soan/16/2/article-p127_2.xml

However, this thesis will explore how rehoming exemplifies the notion that animals are not forever defined to categories and confined to spaces; instead it is through movement that animals define both themselves and the space they occupy (Hodgetts and Lorimer, 2018; Buller, 2012) as they embrace a new identity as a companion. 'Animobilities' (Braverman, 2013) are crucial in unpicking how animals may transgress borders; escaped laboratory mice can become pets (Herzog, 1988), those caught in traps can assume status as research subjects (Wanderer, 2015), wild animals entering the home can become pets (Braverman, 2013), and those 'rescued' from the circus can become wild once more (Vander Meer, 2019). Categories are thus fluid, and undermined by animal agency and the complex building of affective bonds with people. Directing academic attention to the boundaries is thus an exciting place in which to conduct research.

Through rehoming, restrictions on animal movement are lessened, and animals are legally permitted, and, through policy (Home Office, 2015a), often encouraged, to leave both the symbolic and tangible spaces of the laboratory. In their new home, confinement is likely to be relaxed (though, as this thesis will explore, still exists in the form of domestication), as animals are granted movement across larger spaces with increased social and environmental enrichment. Thus, I will explore how rehoming symbolises a novel and often innovative form of animal movement, which may simultaneously hold important symbolic implications as animals transform from a datapoint, as Lynch (1988) once famously coined them, to loved family members (Cain, 1985) or "man-animals" (Leach, 1966, pg. 45). This thesis will investigate the complex ethical, regulatory and social processes embedded in attempts to rehome, and, using the theories of boundary work (Gieryn, 1983) and boundary objects (Leigh Star, 2010), will attend to symbolic, categorical and organisational boundaries that are softened, bridged and even transgressed through rehoming.

The major focus of this thesis is to bring to life the rehoming of laboratory animals as a set of complex relations between people and animals both inside and outside of the laboratory space. It will provide an empirical purchase on the ways in which newly forged human-animal relations are navigated. This includes on the micro-scale; in small, affective and fleshy one-to-one contact with individual animals (Greenhough and Roe, 2011; 2018) that may lead to informal rehoming (Bayne, 2002), as well as how wider national relations between the scientific and animal welfare communities are re-shaped as novel partnerships are formed in which animals, materials and information flow across webs of communication. This thesis will thus investigate the complex ways in which rehoming can break down both boundaries, and outdated and oversimplified politics which suggest a polarisation of beliefs regarding animal research.

Following on from this introduction, Chapter two provides a review of multispecies literature, beginning by exploring the 'animal turn' in the social and cultural sciences, before attending to research in the social sciences which seeks to unpick the wider social, cultural and economic role companion animals have in human lives, specifically the affective and emotional components of their placement in the home space. Drawing on critical social and cultural geographies enables an analysis of why the rehoming of laboratory animals is desired, and why it is also often romanticised in public imaginations. The second section of the literature review highlights how animal research is governed, specifically the strict ethical guidelines the practice must meet, how in such frameworks death is not thought to represent a welfare issue, but equally how alternatives to euthanasia are increasingly being sought as part of the drive to nurture a culture of care in animal facilities.

Chapter three, drawing on the themes addressed in the literature review, provides a rationale for a more-than-human framework of analysis, which guides the thesis and structures thinking. Adopting this approach, which advocates for moving beyond socially constructed humanist perspectives with regard to human-animal relations, the chapter outlines a conceptual framework which follows how care, ethics, and place are fundamental concepts embedded in the practice of rehoming laboratory animals. The theories of boundary work (Gieryn, 1983) and boundary objects (Leigh Star, 2010) hold particular significance conceptually in understanding the shifting roles of research animals into companion animals. Chapter three proceeds to describe the methods used in the research. I offer a description of how I collected data, specifically in undertaking stakeholder interviews, a questionnaire, and through ethnographic work, and explain how these provide a rich and comprehensive image of actors' perspectives and experiences regarding rehoming practice in the UK.

Chapter four, the first empirical chapter, provides a UK context to the rehoming of laboratory animals. Drawing on questionnaire findings, it reports on the moral, ethical, practical and regulatory considerations that inform decisions to rehome. Addressing a widely acknowledged gap in the literature, the chapter offers an insight into the numbers and types of animals rehomed from UK research facilities, as well as the main motivations for engaging in the practice, and the barriers for those facilities not currently rehoming. This research has been published (see Skidmore and Roe, 2020).

Chapter five explores why decisions are made to rehome, through the lens of care. Arguing that existing understandings of care are overly simplistic, I argue that using rehoming as a case study can help to bring to light how care in the laboratory can be conceived as fluid, and can spread across organisms, people and infrastructures. This includes an exploration of how conceptualising care as affective and relational can result in a 'multispecies occupational health', and how rehoming helps to

demonstrate the narrative of care *about* laboratory animals and what happens to them, not simply care *for* laboratory animals.

Chapter six explores how animals transform symbolically from laboratory animal to pet. Drawing on Leigh Star's (2010) concept of the boundary object to reconceptualise the rehomed laboratory animal, the chapter demonstrates how individual animals can span multiple subjectivities at once, as well as revealing the processes, such as training and socialisation, which work to domesticate the animal and facilitate categorical and symbolic boundary transgressions.

Chapter seven, the final empirical chapter, explores the human relations behind rehoming. Crucial to the "backstage" work Leigh Star discusses when examining boundary objects and boundary transgressions are the organisations, bodies, and stakeholders that "work" on the animal in question, aiding its transformation. When rehoming, multiple stakeholders (for example the research facility, rehoming organisations, zoos, sanctuaries, farms, and the public) collaborate and share ideas, practices, knowledge and resources. This chapter will demonstrate how ideas of openness, emotion, risk and trust are integral to understanding the beliefs, expectations and actions of stakeholders in the rehoming debate.

Chapter eight concludes the findings of the thesis. I will argue that there are multi-layered boundaries entangled in the rehoming of laboratory animals; these are symbolic, categorical, spatial, emotional, and organisational in nature. Rehoming as a practice helps to reveal these interlocking boundaries, but also exposes their porous and permeable nature. In the process, this thesis attends to the new types of human-animal relations that develop as rehoming practices change, the new spaces and forms of care that emerge, the boundaries that are dissolved and re-shaped as animals 'become pet', and how new relations between rehoming organisations, the public and experimental science are forged; all of which work to shift the atmospheres of animal research.

2. Chapter 2 - Literature Review

2. 1 "Bringing the animals back in": The animal turn

The animal is everywhere (Wolfe, 2009), yet has long been the repressed 'other', bounded and opposed to the human. Simply the word 'animal'[5], employed by humans, means all non-human animals (Singer and Siegler, 1990). Indeed, despite Levi-Strauss' (1964, pg. 89) proposing that animals are "good to think with", animals have been historically understood as mere vehicles through which to better comprehend human beliefs, practices and values. Geography as a discipline has typically been divided into two components: those human, and those physical. Neither take seriously the animal (Buller, 2014). In fact, Wolch and Emel[6] (1998, pg. 633) reflect on the "deafening silence about non-human animals" and argue animals are typically conceived of as signifiers of human meaning, as a blank canvas and certainly not embedded in complex networks with humans. However, research that ignores the importance of human-non-human relations has previously been criticised as deficient (Philo and Wilbert, 2000), and, to address these concerns, and to recognise the importance of the animal other and their agency, there has been a move to explore the "complex nexus of spatial relations between people and animals" (Philo and Wilbert, 2000, pg. 110). As Wolch and Emel (1998) suggest, now is the time to witness the animal moment.

The animal moment has culminated academically in the 'animal turn', a shift in human geography which has facilitated a 'lively' and 'provocative' (Buller, 2014, pg. 308) breadth of literature from the social sciences. The 'turn' has resulted in a profound restructuring of the discipline's ontological and epistemological reach to incorporate the animal, and to recognise the impact of the varied ways in which humans come into contact with animals socially, politically, culturally and economically. This includes the variety of spaces in which humans encounter animals: including the laboratory (Greenhough and Roe, 2018; Holmberg, 2011; Sharp, 2017), the farm (Hemsworth et al, 2000; Holloway, 2001), the zoo (Hosey et al, 2018), the human home (Power, 2008; Fudge, 2014), the slaughterhouse (Grandin, 1982) and even in hobbies such as angling (Eden and Bear, 2011). Animals surround us, and this research draws on the acknowledgement that animals are intricately and irrevocably embedded in our understandings of the world (Urbanik, 2012).

[5] I will employ the word 'animal' or 'animals' throughout this thesis to refer to non-human animals.
[6] Wolch and Emel (1998), along with Philo and Wilbert (2000), are typically conceived of as the pioneers of a new animal Geography.

More-than-human geographies aim to move away from traditional accounts, which regard human achievements more highly than a passive nature (Panelli, 2010), and instead move to recognise the agency of non-humans, and the affective and embodied dimensions of our multispecies world (Lorimer, 2013). Human understandings are instead conceptualised as co-fabricated and made *through* relations with the non-human (Lorimer, 2005). Whatmore (2002; 2006) advocates that more-than-human approaches encompass an effort to move beyond language and open up different approaches to reality (Salzani, 2017), focusing on animals and the varied ways in which they might communicate and engage with humans. Crucially, and integral to this approach, is the assertion that we should grant animals 'more room' (Philo and Wilbert, 2000), and in the process probe the conceptual boundaries of both the animal and the human to reveal their false foundations (Derrida, 2008).

Indeed, studying complex human-animal relations inevitably involves work at the boundaries, whether these be spatial, categorical or based upon differences between humans and animals, and between different animal species. The kind of multispecies interaction advocated by more-than-human geography is based upon a more convivial and fluid approach to boundaries. While this is opening up an exciting new conceptual space, historical taboos and norms persist and reinforce static boundaries. Nevertheless, a more-than-human approach invites us to challenge what it means for an animal to "belong", communicate and (re)engage in different positions at the boundary, aiding in the recognition that animals may disturb, disrupt, and even transgress their assigned categorical boundaries. This thesis will build on existing multispecies theoretical work which is increasingly turning its attention to the construction of those boundaries and how they can be unpicked.

The growth in theoretical and empirical interest in the animal has transpired in part through a recognition of the global 'animal economy', which, whilst becoming increasingly intensive, is not a recent phenomenon (Wolch and Emel, 1998). Humans have utilized non-human animals and their products for thousands of years, for uses which include food, transport, clothing and companionship. It is in these spaces of complex multispecies interaction where questions of ethics, morality, consent and power come to the fore. Can humans interact with animals without viewing them as commodities? Or are these non-humans "just another resource to be harvested"? (Malamud, 2013). When theorizing through this lens, it becomes increasingly apparent that animals do indeed matter "individually and collectively, materially and semiotically, metaphorically and politically, rationally and affectively" (Buller, 2014; pg. 310).

This thesis will recognise the animal as a central mediator in human understandings and practices. In fact, and in line with Wolch et al (2003), it will argue that animals represent powerful symbols of

place, heritage, and ways of life, and importantly help to construct human understandings of space. This thesis will offer insight into how animals are ordered spatially, the ways in which they might transgress such categorisations, and how this impacts their socio-legal status and the value assigned to them. It recognises animals not as empty vessels onto which humans construct meaning, but instead as vital co-constructers of knowledge, as independent actors possessing agency. As Latour (2005) suggests, animals allow, authorise, afford, encourage, permit, block, and influence human decision-making. As we will see, this is also evidenced in attempts to rehome animals kept in laboratories.

Multispecies relations are inherently hybrid, constructed through and with other bodies (both human and non-human), objects, ideas, technologies and infrastructures in the 'contact zone' (Hinchliffe, 2007; Haraway, 2008). From the study of bacteria (Pitt, 2015) to entire ecosystems (Phillips and Atchison, 2020), those studying multispecies relations are united in their attempts to 'bring the animal back in'. This thesis will provide an important contribution to work in the field by studying the changing moral landscapes, spaces of care, and shifting laboratory practices and relations with external others when novel and innovative attempts are made to rehome laboratory animals. This thesis will build on research undertaken as part of the animal turn, and adopt an approach that acknowledges that human life is constituted not in opposition to, or apart from, but crucially *through* relations with the animal other (Lestel and Taylor, 2013; pg. 183). It will bring the animal into a network of communication with the human, and through personal and intimate stories with those who care for, and live and work with animals, the agency of the non-human other will be uncovered.

The following literature review is organised in two parts: 1) it begins by drawing on more-than-human literature to explain the significance of animal movement, specifically that into the home, and explores explicitly our relations with pet species who can be 'rescued' and taken into the domestic space, and combines it with 2) the increasing call in welfare science to (re)consider the endpoint for animals used in research, and whether a new paradigm can be introduced which considers quality and longevity of life in order to improve the lived experience of laboratory animals. It is in uniting these concepts and discourses that a space is created in which to critically explore the rehoming of laboratory animals through a more-than-human lens.

2.2 Pets and the home

2.2.1 Geographies of the home

Before examining the political, cultural and ethical attention directed toward laboratory animal rehoming, and outlining the policy to be navigated should such an option be sought, it is necessary first to interrogate conceptualisations of the 'home', and the role that companion animals, who are intentionally brought into it, might play in rehoming motivations. Doing so is a crucial component in understanding why rehoming is viewed as a positive process for the animal involved. For example, what role does the home play in imparting value to animals and potentially enriching their lived experience? Why is the home is considered the right and 'proper' place for certain animals (typically those deemed sentient and historically and culturally granted the privileged position of companion) to reside? What do notions of the 'home' load into understandings of the practice of rehoming?

Traditionally, Geography as a discipline has not neglected to investigate the significance of the home. Since Domosh (1998) first recognised that the home represents rich territory for understanding complex social and cultural practices, geographical enquiry has investigated how the home offers security and familiarity (Tuan, 2004), and is important in concepts of emotion, identity, sense of self and family relations (Duncan and Lambert, 2004). The home thus represents both a material and an affective space. It is shaped by everyday mundane practices, lived experiences and past memories (Blunt, 2005). But the home is open, its identity and structure invites new bodies, novel designs and innovative ways of being: it is constructed by movement and communication with those outside of the home (Massey, 1992). As such, geographical enquiry has concluded that the home presents itself as an important site in which to study wider social, cultural, economic and political landscapes (Blunt and Varley, 2004).

In addition to human centred political and economic practices of the home, it is equally important to 'bring the animal in', and thus attend to how the home might be influenced by nature and animals. The majority of research exploring the home space has neglected this site of analysis, though some does recognise the entanglements of nature and culture within the home environment. For example, Hinchliffe (2003) has studied the politics of inhabitation, recognising it to be a more-than-human affair, and proposes that, in the home, both the human and non-human are intimately enmeshed. For example, boundaries between the natural and domestic spaces are shown to be more porous, both ideologically and materially, than previously conceptualised (Kaika, 2004). One example of this is in the practice of gardening; Bhatti and Church (2004) and Hitchings (2003) illustrate how both human and non-human actors collaborate together to create the garden and associated attachments to it.

The garden is painted as a "private haven" (pp.38), conveying an image of personality, lifestyle and relations (Bhatti and Church, 2004)[7]. It is a space in which people encounter nature, and thus invites an embodied and sensual engagement.

However, a lack of academic attention has been given to the presence of animals, namely pets, in the home space. Although much recognises the importance of pets in our lives (Cohen, 2002; Walsh, 2009), studies have neglected to analyse this in relation to the significance of companions being integrated into the domestic home specifically[8]. Fudge (2014) argues that the inclusion of animals into the home has been naturalised, and that the consequent 'philosophical silencing' needs to be addressed if we are to fully appreciate, and be critical of, the role of the home, and of pets within it, in the emotional, social and cultural dimensions of daily life.

So far, it has emerged as clear that research tends only to explore the role nature and animals play in building human identity, culminating in research which is orientated predominately around the human. The aim of this thesis is to draw animals into a network of communication with humans, where, as part of the animal turn and an attempt to 'bring the animal back in', they are taken seriously as actors. This thesis will attend to the laboratory animal specifically, how their identity shifts as they move across spaces, and the role they might have in shaping their own transformation from data point and research instrument through which to advance human health, into a loved family companion.

2.2.2 Animal movement

Despite a lack of literature which attends to the intersection between the home and the more-than-human, an area that has received increased academic attention is that of movement and mobilities. Urry (2007) initially argued for what he terms a 'mobility turn' within the social sciences,, proposing that there is a lack of research which attends to the consequences and structures of movement, because such movement is so frequent and necessary that it is rendered invisible. Like much work undertaken in the social sciences, Urry (2007) omits animals from his analysis.

However, animal movement can, and does, (re)modify and (re)construct the symbolic meanings attached to spaces and places (Braverman, 2013). As Bull (2011) proposes, movement and mobility is an inherently more-than-human affair, and a revived geography has only just begun to turn its attention to the complex entangling of animals in space, place, landscape and environment. Spaces of

[7] Bhatti and Church (2004) argue that the "humble domestic garden" (pg. 37), like animals, is a neglected topic in studies of housing and of home.
[8] Rebecca Fox (2006) is the obvious exception.

the home and 'away', self and the other, inclusion and exclusion, and wild and domestic warrant further research.

Philo and Wilbert (2000) were arguably the first to acknowledge the role animals play in the fluctuating nexus of space, place and identity, and contended that humans spatially place animals, both physically into farms, factories and fields, but also into imaginary, literary and pyschological spaces to assert power and control over them. Indeed, although animals have some form of autonomy regarding when they choose to move and when to be still, the majority of their choices are governed by human imposed political, socio-cultural, and historical boundaries. As Bull (2011)[9] suggests, the act of animal movement cannot be divorced from wider political and organisational structures. Barriers to migration, species inequalities, and cultural practices permit access to different spaces and places, and are crucial to expressions of identity. The economy also plays a role: animals often find themselves "caught up in the globalised networks of production and consumption, which materially and discursively circulate them and their body parts as currency, capital or commodities" (Bull, 2011, pg. 23). Animals can also be bound spatially, and these boundaries can be physical; animals are constrained by fences, cages, pens and tanks. Animal movement is thus simultaneously encouraged, permitted, restrained and made physically (im)possible. As laboratory animals are rarely granted movement outside of the tightly monitored boundaries of the laboratory to enter a world unregulated by A(SP)A (Hodgetts and Lorimer, 2018); literature that explores their respective mobility is scarce.

However, research on animal movement that is permitted by humans more generally does exist. For example, studies explore pets' mobile nature: endangered species are traded, pets are transported to participate in pedigree breeding, and animals regularly accompany their human counterparts on holiday, playing a crucial role in dictating human experiences of belonging and moral identity (Fox and Walsh, 2011). Pets are consequently integral to the re-establishment of the home, and in the negotiation of complex new senses of being. However, companion animal movement is not only facilitated, but controlled: Instone and Mee's (2011) research discusses how the urban green park (itself a hybrid of nature and culture, both wild and civilized) is constructed as a space created specifically for humans. They investigate the importance of boundary making in marking the spatial boundaries of the park. This includes visual cues such as signs; animal behaviour in such a space is restricted and monitored, and the dog lead, park design and furniture are shaped by humans as a method of controlling dog behaviour. The place of the dog (and thus its independent mobility) thus undergoes both exclusion and inclusion.

[9] See Bull (2011) for a further discussion of how direction and velocity shapes dynamic and ongoing human-animal relations, and the ways in which power can both prevent and enable animal movement.

Research has also explored the process of animals moving back into 'natural' spaces from captivity, and the 're-wilding' practices (Lorimer and Driessen, 2013) that are embedded within this form of movement. For example, Vander Meer (2019) discusses the transfer of four lions from circus to sanctuary. She views the lions as previously 'employed' as performers in the circus, no longer wild, but instead domesticated and trained to perform certain movements on command. The lions thus assume a hybrid nature. Physical modifications are important to this shifting of cultural roles; docile and compliant bodies are produced in order to 'create' performers; the lions were castrated and declawed in order to fulfill their role. Once 'rehomed' to the sanctuary, however, the lions engage in more subtle human-animal interaction. Vander Meer proposes that direct contact with humans in the rescue setting does not occur, as the boundaries the animal occupies as a performer shifts to those considered 'wild', and thus their animal instincts are respected rather than commodified. Hence, through the lions' movement from circus to sanctuary, a wider cultural change to their role, categorisation and treatment is enabled.

While some animals move from the domesticated to the wild, others re-enter human spaces. Indeed, we should also pay attention to how animals resist, destabilise or dissolve their human-imposed categorical and spatial orderings. Animals can transgress their designated places, and, in their escape, continually re-define human spaces. Braverman (2013) discusses 'animobilities', exploring how species such as the Canadian Goose enter the human cityscape uninvited. The mass movement of unwanted animals into the city has led Wolch (1996) to term cities as 'subaltern animal towns'. Some animals cannot be controlled; pigeons enter the city, and no fences or walls can be constructed to prevent this movement (though efforts are made to control them through placing spikes on buildings to prevent them nesting). Animals thus defy orderings and leave their assigned borderlands, and in the process both affect, and are affected by, human laws (Braverman, 2013). However, the process of transgressing boundaries is inherently complex, and, as this thesis will explore, the act of defying orderings is not limited to a simultaneous spatial movement.

2.2.2.1 Spatial movement and a change in animal identity

Indeed, running parallel to the physical process of animal movement is a shift in the imaginary and pyschological spaces animals occupy as they move. Animal movement is intricately embedded in their socio-legal categorisation. Indeed, the spaces of the animal laboratory, zoo, wildlife sanctuary and farm, although rooted in material existence in a physical world, also represent abstract symbolic spaces (Lefebvre, 1991). As such, animals are ascribed identities, behaviours and personalities based upon their presence in these spaces. This forces a rethinking of human-animal relations, which should be theorised as fluid (Fudge, 2011).

Previous research, in line with Despret's (2004) conceptualisation of transformative exchanges as *anthro-zoo-genetic* practices, has explored how both humans and animals construct and experience relationships. For example, Wilkie (2005) charts the development of what she terms 'attached attachment' between farmers and their livestock. The attachment she discusses could be reversed when the animal was 'recommodified' by being sent to slaughter. However, some animals remained 'uncommodified' and evaded transfer to the abbatoir, and thus died of old age and were buried in the farmer's garden. This signifies the importance of the attachment, which, although symbolic in nature, resulted in practical changes to the animal's life as they experienced a more dignified death. Wilkie (2005) also found that the naming of animals held importance, and was a process influenced by the career path of the animal, in this case whether the animal was being sent to slaughter or used for breeding.

Similarly, Redmalm (2011) proposes that the physical movement of the Chihuahua emphasises its existence in a multitude of categories, including pet, canine and accessory. Redmalm (2011) encourages us to think "with movement" (pg. 35) and to attend to the agency animals have in disrupting, transgressing and being contained by various categories. Within this, it is important to explore the ways in which human and animal movement combines, and therefore both act to respond and resist one another. Despite 'wild' animals often receiving additional regulatory protection if they have 'endangered' or 'threatened' status (Braverman, 2013), wild animals also typically receive less protection than pets. However, animal movement can undo these tidy categories; wild animals can be adopted as pets and thus span multiple subjectivities. Those animals deemed 'alien' or 'invasive' have their movement constrained and often represent a culturally or biologically constructed threat. Socio-legal classifications are thus messy, and are mobilised to reflect, enable and regulate changes (Braverman, 2013). As Rowan suggests, "the only thing consistent about human–animal interactions is paradox" (Rowan quoted in Herzog et al., 1997a, pg. 236). Laboratory animals, however, are rarely considered in relation to these ideas.

Indeed, Buller (2012) discusses how research animals are commonly denied movement and mobility, as they are housed in cages, tanks, and pens, and therefore no research has explored the movement of laboratory animals, despite recognition of their ambiguous categorisations and liminal status (Birke et al, 2007). This is because, traditionally, their movement has been one of the most restricted of all animal groups (Hodgetts and Lorimer, 2018). This confinement is seen as necessary due to associated hazards should animals escape the confines of the facility. The laboratory, then, in contrast to the home (Massey, 1992), is historically understood as a closed space, fraught with secrecy and confidentiality (McLeod and Hobson-West, 2016).

However, with the practice of rehoming, the act of constraining animobilities is overwritten, and animals are legally permitted, and, through policy, often encouraged[10], to leave the laboratory space. Thus, a new form of animal movement is presented, where space is opened up for animals to defy traditional and static spatial, but also wider symbolic, orderings. Although research demonstrates the importance of animals in the making of human identity, none has explored how intentional laboratory animal movement can cause a shift in the value allocated to animals, and the complex parameters encompassed within this relational movement, which is at once both toward (becoming a pet) and away from (identity as a laboratory animal) (Thrift, 2003; Nimmo, 2011).

2.2.2.2 Enter the pet

With the understanding that notions of the home are important to geographical enquiry, and that animal movement can work to both build and unpick tidy categorisations, I now turn to investigate conceptualisations of the pet specifically, as this is the identity newly rehomed laboratory animals are most likely to assume. But what constitutes a pet?[11] I have already shown that neat and orderly socio-legal categories are rarely possible, and are undone by 'animobilities' (Braverman, 2013), and it is thus necessary to explore the circulation of power, culture and society in constructions of the companion animal. Once again, we direct our focus to the boundaries; Fox (2006) suggests that pets reside in the boundary between 'human' and 'animal' and are often individualised. Some argue pet-keeping evidences the emergence of a post-humanist orientation which rejects both a firm species barrier and the exceptionalism of humans over other animals (Cudworth, 2015). Scholars now discuss the emergence of 'post-humanist households' (Power, 2008; Smith, 2003), or even 'hybrid families' (Franklin, 2007). These ideas suggest the progressive destruction of the species boundary, and of the suggestion that space should separate the human and the animal.

Indeed, pets are often distinguishable from other animal groups as a result of their living inside the home (Holland, 2018) and being classed as a family member (Cain, 2016), or even a "man-animal" (Leach, 1966, pg. 45). Within the home, living intimately with animals leads us to recognise their individuality, quirks and characteristics. They thus occupy the dual status of both a person, and a possession. They are considered to be both capable of rational thought and emotion, valued for their

[10] Previti et al (n.d.) term rehoming a "progressive use" of research animals, and as such argue represents a sustainable scientific and ethical movement.

[11] The Oxford English Dictionary definition of which is: "an animal (typically one which is domestic or tame) kept for pleasure or companionship." See https://www.oed.com/view/Entry/141778?rskey=dyihIg&result=5&isAdvanced=false#eid

'animalness', yet also subject to practices such as training, neutering, and attempts to 'civilize' them (Fox, 2006). Reflecting upon which animals are granted access to the home environment opens up a space in which to evaluate how power, inequality, restriction, and access can influence our relationships with different species.

As companion animals, due to their 'special' and reserved position (Dotson and Hyatt, 2008) can be considered family members (DiGangi et al, 2006; Walsh, 2009), their movement into the home space is not restricted, but instead encouraged. However, the title of 'pet' is typically afforded only to certain species, revealing the complex construction of boundaries which dictate what symbolically constitutes a companion animal. Academic literature focuses primarily on cats and dogs because, in Western societies, it is these species which are traditionally welcomed into the home, sharing a space with people, stretching on a carpet, or sleeping on a sofa. Donaldson (2005, pg. 8) even terms dogs "honorary humans". As such, a wealth of literature has explored the dog's role in the family (Sanders, 1993; Jackson, 2012; Charles, 2016), the most famous of which is arguably Haraway (2003), who discusses 'living with' so-called 'companion species'. She discusses her intimate relationship with her dog, Cayenne[12], and how she feels both herself and Cayenne simultaneously engage in affective relations during agility training. Cats are more complex; Griffiths et al (2000) find that cats represent a being of partial domestication, and the cat-flap a breach in the domestic boundary.

Although fish, birds and rodents are kept as pets, human interactions with dogs and cats have been the most heavily studied and are thought to elicit stronger human-animal bonds and feelings of care (Ritvo, 1987). Hart (1995) argues dogs are 'special' to humans as they can display affection and show loyalty due to the development of attachment to individuals. Turner (2000) found that cats, although not replacing humans in the social network, provide an additional source of emotional support. In fact, when the attachment is strong, cats can be framed as 'significant others', and can alleviate negative moods in their owners (Rieger and Turner, 1999). These narratives sit in stark contrast to other species, such as fish. Fish are phylogenetically distinct and lack clear facial expressions, meaning humans may find it difficult to empathise with them (Message and Greenhough, 2019). Further, Walsh (2009) argues for the importance of tactile touch in forming human-animal bonds; she proposes that stroking a pet is calming and soothing. Fish, on the other hand, should not be touched[13]. Brown (2015) therefore concludes it is challenging to "extend the circle of morality" (pg. 2) to some species.

[12] Or 'Hot Pepper', as Haraway also calls her (Haraway, 2012). Haraway writes extensively of Cayenne's exploits in her book 'When Species Meet'.

[13] Many fish excrete a protective layer of mucous over their scales that operates as a buffer to the outside environment. Touching fish can wipe off this layer and render the animal susceptible to infection.

Indeed, there is simply a larger 'market' for the rehoming of cats and dogs due to their more "adoptable" nature (Clark, 2014); 23% of UK homes have a dog, and 18% have a cat (Pet Food Manufacturers' Association, 2017). Conversely, just 0.1% of households keep rats, and 0.02% keep mice (Pet Food Manufacturers' Association, 2017). It is because of this 'extended sympathy' for dogs and cats that Singer (1995) claims pigs, chickens and laboratory rats are often left 'forgotten'. They are, because of their species, lying outside of ethical and protective boundaries in the human subconscious, reflecting larger, societal inconsistencies in the treatment of species (Herzog and Foster, 2010). Fox (2006) discusses how it is less acceptable to have close interpersonal relationships with smaller or more unusual species. Snakes and rats are feared for their 'difference', implying is it only animals that appear closer to us, both physiologically and pyschologically, that we can allow to be members of the family. Rodent and reptile species challenge historical and cultural ideals of what a pet should be, disrupting the boundaries typically constructed around companion animals (Hobson-West, 2007). They also dismantle the processes that designate which species can be considered individuals and assigned personhood.

As I will explore in more detail later in this chapter, animals are euthanised routinely in the laboratory, and surplus animals (those not required for research) are commonly culled for economic convenience (Taylor et al, 2008). Yet, and as Cuthill (2007) and Döring et al (2016) argue, it is the close bond humans have developed historically with certain species which results in people taking issue with the routine euthanasia of these animals in research laboratories. Alternatives to euthanasia are increasingly being considered (Döring et al, 2017); this includes efforts to rehome. The European Directive 2010/63/EU (EU, 2010) even states that "animals such as dogs and cats should be allowed to be rehomed in families since there is a high level of public concern about the fate of such animals." As the bond owners have with companion animals is typically based on values such as love and friendship, this entails stronger moral obligations to those species, whether they are housed in the home or currently used in research (van Herten, 2016). This also explains why, generally, there exists more public outrage at the idea of biomedical testing on cats and dogs as opposed to rats, mice or fish (Döring et al, 2017). It is important to note how societal perspectives permeate to guide research practices; Hobson-West and Davies (2018) explain that dogs, cats, horses and primates constitute specially protected animals in legislation guiding animal research, meaning that the Secretary of State must be satisfied that the research could not be undertaken using other species.

This thesis will explore whether, and how, perceived societal views also filter through to inform rehoming practice. Research finds that human relationships with animals are complex, multi-layered and full of contradictions and ambivalences (Herzog and Foster, 2010). Due to the large numbers of

animals used in research (In 2019, 3.4 million procedures were carried out in the UK)[14], it is impossible to rehome all laboratory animals (Home Office, 2019). As such, exploring their rehoming also necessitates a consideration of which animals are chosen to be rehomed, and thus an attention to the differing value of animal lives. The thesis will offer a new way in which to probe these inconsistencies, by attending to why it is that humans decide to include some animal lives in caring moral circuits, and (un)intentionally exclude others.

2.2.2.3 Pets in the home

It is a theoretical imperative to consider critically the animals that live with us, as they are key mediators in cultural, political, economic and social relations. The home represents a key site in which the human-animal relationship plays out (Power, 2008), yet, as previously discussed, the majority of research which explores the keeping of pets seems to construct the non-human animal in the home as a passive object (Power, 2008). Consequently, as Fudge (2014, pg. 109) advocates, we need to "think about the animals we live with" in order to "begin to undo a humanist construction of the human".

As I have already discussed, the home is important to our sense of self (Duncan and Lambert, 2004), therefore it emerges as significant to explore the role of pets within this space. Smith (1994), who undertook interviews with homeowners, found that pets constitute "essential" qualities of the home. Indeed, one participant explained how their cat was "always pleased" to see them (pg. 36), and her presence was vital in constructing a happy and secure home environment. Living together with the animal other on a daily basis facilitates a close relationship, and a recognition of individuality (Fox and Walsh, 2011). Cain (2016) discusses the embedding of emotion in human-animal relationships, and proposes that pets provide humans with companionship in times of loneliness or emotional difficulties. This was found to be especially important following significant life change such as death of a family member, divorce, or when children leave home. She found that photos of pets were often displayed in the home, further demonstrating how the boundaries between pets and family members are blurred (Cain, 2016). Albert and Bulcroft (1988) found that people felt closer to their pets when they did not have children, or their children had left the home. Indeed, Anderson (2003) even finds that those keeping birds can view the animals as direct substitutes for human children, and refer to them as "fids" or "feathered children". These stories reveal the complex and intimate relationships we have with animals we call pets.

[14] It is impossible to know the number of animals used in experimental procedures, as the Home Office provides figures only for the number of experiments undertaken, and some animals may be re-used for these experiments.

The act of welcoming animals into the domestic home space specifically is of interest within this thesis (Fox and Walsh 2011); Power (2008) finds that pets are often afforded unrestricted access to typically 'human' spaces, including family rooms, bedrooms and furniture. This demonstrates how our affection for companion animals can result in the un-making and de-stabilisation of boundaries that separate us, both physically, and ideologically, from animals (Schuurman, 2019). As Russell (2007, p. 35) points out, "all domestic animals complicate the boundaries between humans and animals, nature and culture."

Indeed, pets are not blank canvases onto which meaning is imposed. Our interaction with pets is to a large extent nonverbal, and instead based on humans and animals responding to one other as part of "the intimate choreography of human/animal interrelationships" (Birke et al, 2004, p. 170). Using the dog in the home as a case study, Power (2012) investigates how animal agency manifests through the response to an animal's unique needs: these include grooming, walking, and playing. Power suggests that it is these actions, processes and 'doings' that increasingly become part of home life as participants balance the needs of diverse family members. These activities (such as coat clipping so there is no moulted hair in the home, and tiring the dog out with a walk so they are calmer behaviourally) are also designed to shape and mould dogs' bodies so they fit comfortably within the dominant values of appropriate home and family behaviour.

Despite this, literature which seeks to analyse how understandings of the home may both impact, and equally be impacted by, the presence of animals is underdeveloped. Instead, much attends to the benefits pets offer us in terms of companionship and the intricate embedding of animal life in human mental, emotional and physical health (Beck and Katcher, 1996). There is also a lack of literature which explores the mobility of animals into the home, the affective components entangled within this movement (Laurier et al, 2006), and the practical and symbolic processes through which this movement is enabled. This is especially true when animals are brought into, and shaped to conform to, the practices of the home when their life up until that point has not been in a domestic setting. Indeed, when animals have previously resided in the laboratory environment, their role, value and allocation to socio-legal categories is likely to be very different to that which they are assigned in the home. Although research finds that bonds develop with laboratory animals (Bayne, 2002; Giraud and Hollin, 2016; Greenhough and Roe, 2018), little investigates the tangible outcomes that can result from the formation of this bond. This includes exactly how decisions are made to rehome laboratory animals, the spaces of care that are opened up, and the processes by which rehoming is enabled.

2.2.2.4 Bringing the 'rescue' animal home

Rehomed laboratory animals are not pedigree puppies brought into the home to be domesticated and easily shaped to fulfill expectations of that space. Instead, laboratory animals may arrive with unpredictable behaviours, come with a complex and hidden past, and a history from which new owners feel they deserve rescue. Thus, the rehoming of rescue animals can be constructed as an ethically progressive course of action. This is evidenced by the growing popularity of organised practices of animal rehabilitation and rescue globally (Urbanik and Johnston, 2017). Much like the adoption of children, when animals are 'rescued', they can be provided with better life opportunities (Leinaweaver, 2014). It is not only in life when rehomed laboratory animals receive additional care, warmth and love. The act of rescue is also beneficial in their death; Weaver (2013) proposes that love is a central emotion to rescuers' advocating a better kind of death for rehomed animals. Here, the significance of putting an animal to sleep in the arms of those who care deeply for them, is preferable to routine, and perhaps even clinical, euthanasia of animals in the laboratory space.

It is in the context of 'rescue' that animals transgress borders as they adapt to a new identity. Research explores the rehoming, or 'rescue', of racing greyhounds (Carr, 2015; Sands, 2019), street dogs (Schuurman, 2019), fighting pit bulls (Weaver, 2013), shelter dogs (Arluke, 2006) and animals used in research (Koch and Svendsen, 2015). There is a different kind of care embedded in attempts to rehome animals from situations of (perceived) neglect. For example, Weaver (2013, pg. 699), in discussing the rehoming of pit bulls, explores how the very concept of 'rescue' "reveals an identity rooted in salvation. While inflected by religion […] this salvation also relies on geography, for it hinges on moving these dogs out of the woods and/or the streets, out of animal shelters, and into homes." Rescue involves a form of self-reflection, which, as Yamasaki (2020) proposes, provides hope, and importantly feeds into "imaginations of how life might be not only different, but better" (Frank, 2010, p. 159). Yamasaki (2020, pg. 255) elucidates:

> *"There is a popular parable that circulates within and outside the animal rescue community about a man walking along the beach who spots a boy tossing stranded starfish—one by one—into the ocean. The boy does not want them to die, but the man exclaims that he can not possibly make a difference when hundreds of starfish line miles of beach. Undeterred, the boy picks up another starfish, tosses it into the ocean, and says to the man, "It made a difference for that one."*

It is in these intricate narratives that imagination is aroused (Frank, 2010). These stories direct focus to individual rescue animals who help to shift landscapes from 'hopeless' to 'hope-full'.[15] Personal stories of animal survival, and equally the altruism of people, work to build complex but robust and sustainable collective consciences of hope and pride. These accounts also signify the fluidity of emotions such as hope, and how, through actions considered to be caring, these affects spread across multispecies bodies. I will explore this idea in further detail in chapter five.

Place again presents itself as important in discussions of 'rescue'. Birke and Hockenhull (2012) suggest that animals can be culturally constructed as 'belonging' to particular places based on an intricate network of social relations, determined by historical and socio-cultural processes of inclusion and exclusion. When 'rescuing' animals, it is interesting to explore why the movement of animals from one place to another, and the expectations of them as they transgress spatial boundaries, is construed as an optimistic and progressive process. Indeed, one that is rescued has to be in need of rescuing. In discussing the international rescue of street dogs specifically, Schuurman (2019) argues that in order for animal rescue in a transnational context to be justified, the country of origin is constructed as the other (Ahmed, 2000), a space of animal abuse and therefore an inferior home in which the animal resides. The laboratory can also be constructed as such, where historical tensions and media depictions paint animal research as perpetuating systematic animal suffering (Aaltola, 2014; Ormandy and Schuppli, 2014). As I have explored previously, the home, in contrast, is understood as a loving and caring environment, one in which the animal is often cherished as a family member (Fox, 2006; Fox and Walsh, 2011).

Again, we find identity as crucial in understanding the complex network of relations at work in the rehoming, or rescue, of animals. Weaver (2013) explains how rescued animals can be described as victims transformed into "iconic family members" (pg. 697) and offer salvation, as the language of "second chance" runs rampant in their individual stories. These animals transform from their previous identity to adapt to a new role in which they are loved family members in their 'forever homes'[16]. Once rescued, animals are perceived as 'unique individuals' with stories to tell and love to give. The rescue of animals can be conceived of as a process which facilitates the discovery of their respective individuality. For example, when animals are saved from situations of neglect, depictions and images of them as productive members of society abound. Stories of rescue dogs who become certified therapy dogs are prolific, as in the case of Ruby, a pit bull who now regularly visits older patients in a

[15] Which also serves to echo Davies et al's (2020) call to consider the role and distribution of positive affects (whether hope, curiosity, care or empathy) in human-animal relations.
[16] The language of 'forever homes' also exists in literature on human adoption (Hammel, 2017). See https://etd.ohiolink.edu/pg_10?0::NO:10:P10_ACCESSION_NUM:case1491490146979486 for more information.

nursing home (Weaver, 2013). It is in these stories of love and compassion that it becomes impossible to ignore the flows of affect embedded in narratives of rescue; these include love, hope, courage, and compassion. In contrast, there exist discourses around animal research which frame laboratory animals as a mass, and make care based on individualisation practically, ontologically and affectively challenging (Lorimer, 2007; Buller, 2013).

Further, and perhaps unlike the adoption of other pets, it is possible to see how rehoming rescue animals also benefits the new owners. By rescuing an animal, new owners are also 'rescuing' themselves. This demonstrates the entanglements of affects between people and animals. There is also a labour and emotional toll of care and love in animal rescue on the part of humans. Terry Bain emphasises the power of this connection, noting that animal rescue can transform the hearts of people, giving them "an even greater capacity" to love and care (cited in Weaver, 2013). This form of "becoming in kind" is cemented by friendship and love. As the pit bull advocate Ken Foster stipulates, "in saving animals, I wonder if I am doing it for them, or actually, if I do it for myself". Yamasaki (2020) asks "Who rescued who?" and explains her experience of working with "mischievous, ugly, or broken dogs" (pg. 256) who ultimately heal that which is broken, ugly, or mischievous in those who rescue them. She remarks that rescue animals still have the ability to trust and love people, which shows a resilience that inspires her to do the same. These narratives also disclose the intimate entanglements of human-animal affective states, and how care for the animal other can ultimately be conceived of as care for oneself.[17]

Limited literature from the cultural and social sciences explores the rehoming of rescue animals, and even less focuses specifically on laboratory animals. As previously discussed, literature charts the development of a special duty of care toward animals grouped as pets, but little focuses on how animals may be transformed into pets from other categories, and the practical, regulatory and affective processes involved in this transgression. The thesis will endeavour to attend to these complexities, unpicking the multifaceted ways in which care, responsibility and ethics are practised in relation both to laboratory animals and pets, and the kinds of physical and figurative work undertaken to enable a shift in these categories. Further, although studies disclose that adopting a rescue animal is beneficial morally for the new owner, none attends to those who play a role in facilitating the rehoming, in this case, the laboratory staff. This narrative is complicated by the landscape of animal research, which is often described as an unequal and exploitative way of using animal bodies for the benefit of humans. Laboratory technicians are labelled as doing "dirty work" (Mills et al, 2018) and scientific researchers as villains (Rowan and Goldberg, 1995). This sits in direct contrast to heroic

[17] I probe this idea further in a forthcoming paper (Skidmore, in preparation) on the caring components entangled in efforts to rehome, and how care for the animal other spans across organisms, people and infrastructures.

animal rescuers (Lyons, 2005). Thus, does the narrative of rescue change when staff choose to rehome and potentially 'save' animals from euthanasia? Is rehoming as beneficial for the staff facilitating the rehoming as it is for the new owner? This thesis will attend to these questions in later empirical chapters.

The following section moves to the second part of this literature review, and to examine animals in research specifically. This includes an exploration of how standards of animal welfare are maintained through legislation, and, as part of the promotion of a good 'quality of life' and the increased integration of societal perspectives to guide animal research practices (Davies et al, 2020), how new assessments of welfare may open up a space for rehoming.

2.3 Animals in research

In 2019, 3.4 million experiments involving animals were undertaken in the UK (Home Office, 2019)[18]. This number has been steadily increasing, attributed to the creation of genetically altered animals. 67% of animals tested upon were mice, 16% were fish, and 9% were rats. Experiments involving specially protected species (horses, cats, dogs and non-human primates) accounted for just 1% of procedures in 2019 (Home Office, 2019). The Animals (Scientific Procedures) Act 1986, or A(SP)A monitors animal experimentation in the UK. The Act defines a 'protected animal' as "any living vertebrate or cephalopod (other than man)", and regulates its breeding, killing, and procedures undertaken on the animal. It builds on the Cruelty to Animals Act (1876), through its continuation of the 3-tier regulation system of the person, the project and the place. Whereas the Cruelty to Animals (1876) Act mainly attempted to limit the suffering of animals, A(SP)A 1986 more noticeably tries to improve animal welfare through guiding the code of practice regarding care and accommodation of these 'protected animals' (Lilley et al, 2014).

It is important not only to outline the ethical frameworks currently in place that guide animal research, but also to situate the development of these frameworks in the socio-cultural climate of the time. It is impossible to discuss how animal experimentation has historically been interpreted without acknowledging the role of Peter Singer. Singer's work in the 1970's (mainly the release in 1995 of his book '*Animal Liberation*') advocated a move beyond the idea that species boundaries also represent the boundaries of morality, and suggested there was no justification for the elevation of one species over another. Tom Regan's work was also instrumental. He proposed that the current system in which humans view animals as a resource is a fundamental wrong, and advocated that humans have a duty

[18] Meeting the requirements of Section 2 of the 1986 Act to publish, the Home Office publishes annual statistics on the use of protected animals in regulated procedures.

to be kind to animals, and not cruel (Regan, 2004). He promoted a rights view, suggesting that such an interpretation represents the 'most satisfactory moral theory'. At the heart of these approaches is the perception that reason should compel humans to recognise the inherent, and equal, value of animals, and not emotion or sentimentality.

However, critics of Singer and Regan's work push for the adoption of feminist care ethics. This body of work originally arose from Carol Gilligan's[19], (1993) and Val Plumwood's (2002) research, and suggested that men were more concerned with 'rights' and 'rules' and saw morality as 'fair', as opposed to women's conception of morality which involved an attention to care, responsibility and complex affective relationships between people[20] (Donovan and Adams, 2007), and, increasingly, animals (Engster, 2006). Feminist care ethics also argues that a rights-based approach ignores, and may even devalue, the role of emotions such as love (Donovan and Adams, 2007). The movement toward feminist care ethics thus involves a rejection of rule-based principles and instead advocates for the practice of contextual and situational ethics. This form of care involves viewing animals as beings in possession of feelings.

The kind of care explored under a feminist care ethics lens also aims to understand the wider socio-political environment, and thus why the animal is experiencing abuse in the first place (Donovan and Adams, 2007). It criticizes the animal rights-based view, which equates animals to humans, and consequently omits any differences. Animals are not equal to humans; for example, Donovan and Adams (2007) note how domestic animals depend upon humans for survival. Yet, the rights theory ignores these networks of supporting persons and overlooks species interdependencies. As such, embedded in feminist care ethics is the remoulding of animal ethics, as care and affects such as hope and love are placed at the centre of the debate (Fraser, 1999). The approach argues that problems regarding traditional animal rights ethics can consequently be overcome through an integration of, compassion for, and sensibility toward animals, which Preece and Chamberlain (1993) argue is natural to most people and comprises a major element of what it means to be human.

Arguably, the pressure applied by both Singer and Regan, combined with the development of feminist care ethics, helped to trigger a revival of the animal rights movement (Langley, 2016), and consequent changes in ethical frameworks guiding animal research (Mukerjee, 1997). UK and European legislation is now rigorous, and involves considering and assessing a variety of parameters before research can be undertaken. In order to help contextualise and provide an objective assessment of animal testing,

[19] Carol Gilligan, an American psychologist and ethicist, was one of the founders of the ethics of care.
[20] It is important to note that some feminists have criticised care-based ethics for perpetuating the traditional narratives of a "good woman".

a harm-benefit analysis framework[21] is employed to determine whether procedures should be undertaken. The general principle is that if the benefits to scientific theory outweigh harm to the animal (for example through the compromise of the 5 freedoms – Brambell, 1965), then the experiment can be undertaken. However, a cost-benefit analysis is not a simple undertaking. There are difficulties in quantifying the harms and benefits of animal research as they are multifaceted, and stakeholders responsible for making assessments have differing priorities and expectations. Additionally, Davies (2012) argues that few research proposals are turned down as the potential gains in understanding human health are usually given priority. Further complicating matters, benefits of animal research should not be considered automatic, as there are issues surrounding animal model validity (Graham and Prescott, 2015).

If a procedure is permitted, laws are in place to limit animal suffering and to encourage scientists to foster a duty of care toward laboratory animals (Hobson-West, 2009). The main principle governing animal experimentation is the 3Rs. Developed in 1959, the 3Rs were introduced by Russell and Burch as a way to "diminish inhumanity in experimentation" (Russell and Burch, 1959). The Principles are outlined in their book *The Principles of Humane Experimental Technique*. An implementation of the 3Rs includes: a reduction in the number of animals used in research, the refinement of procedures to minimise suffering (and improve animal care and welfare), and the replacement of animals where possible with other methods of testing. These laws are now formally embedded into A(SP)A policy, and are thought to represent sound scientific practice. The 3Rs and associated legislation do reference rehoming; the National Centre for the Replacement, Refinement and Reduction of Animals in Research (NC3Rs) have produced a document which states that "careful consideration should be given at the project planning stage to the fate of the animals at the end of the programme of work (e.g. euthanasia, rehoming, release)" (NC3Rs, 2017; pg. 14).

It is generally accepted that good animal welfare results in good science. The rhetoric of "happy mice make good science" (Poole, 1997) exemplifies this. Reliable and reproducible research is highly dependent upon healthy animals. Variation caused by physically or psychologically damaged animals will not foster sound scientific findings (Holmberg, 2011). It has even been claimed that care has an epistemological value, creating responsive relationships between the animal and the researcher, hence making it challenging to manipulate subjects into conforming to pre-established expectations (Stengers, 2011).

[21] For more information about how a harm-benefit analysis is carried out, see Gail Davies' (2018) research at https://www.nature.com/articles/s41684-018-0002-2

However, and in line with the feminist care ethics discussed earlier, scholars have critiqued the idea that ethics can be reduced to objective rules, guidelines and rubrics (Haraway, 2011). Davies (2012) proposes that current legislation suggests that once the people, places and procedures have been "signed off", ethical considerations have been adequately met and experiments can continue (Davies, 2012). Similarly, Friese and Nuyts (2018) argue the 3Rs must go beyond the boundaries upon which 'The Principles' were founded (which are often considered too narrow in their focus (McLeod and Hartley, 2017)), and instead introduce a care which extends beyond ethical guidelines. There are also criticisms that legal frameworks lose the essence of a duty of care toward the animal other, and reinforce the human-animal divide. As Birke et al (2004, pg. 173) propose:

> *'The long history of standardization, use of the passive voice, legal frameworks of animal experimentation, and ethical justifications for using nonhuman animals—all these operate to maintain a clear discontinuity between humans and other animals. They serve to separate humans from nonhumans, both in time and space, and conceptually'.*

Indeed, while the 3Rs are important concepts, they are dated and do not reflect recent developments in understanding the cognitive and emotive capabilities of animals. There is now a growing body of literature on animal welfare, sentience and emotion (Ferdowsian and Beck, 2011), which recognises that animals can feel pain and distress, in both physical and mental forms (Balcombe et al, 2004). There are even signs of empathy and self-awareness shown by higher species. Potential harms run deeper than physical pain as a result of procedures; they span to social deprivation and a loss of ability to fulfill natural behaviours (Ferdowsian and Beck, 2011). Thus, there has been a shift in ideologies and assessments of animal welfare from the idea of 'coping', to that of advancing and improving both emotional and psychological states. Care is much more than ethical principles, it is embodied in small, sometimes mundane, but care-full tinkerings (Greenhough and Roe, 2018) intended to enrich the lived experience of animals (Holmberg, 2011).

It is this form of ethics that has led to increased academic attention toward the study of an embodied, relational and affective care based on an attunement to the animal other, grounded in shared 'bodily vulnerabilities' (Greenhough and Roe, 2018). This kind of care, one which rests on an embodied multispecies attunement, or "becoming with" (Despret, 2004) the animal other, has been the focus of literature which explores how care is afforded to laboratory animals (Holmberg, 2011; Davies, 2012; Druglitrø, 2017; Greenhough and Roe, 2010, 2011, 2018). There has been particular attention toward exploring relations of power in the provision of care, and how animal technicians, who are responsible for the daily care of research animals, perform care and make sense of their relationships with laboratory animals through intimate 'knowings' of animals as individuals (Greenhough and Roe,

2018). Donald (2018) advocates that we, as researchers, need to embark on a concerted move away from care as narrowly procedural, and instead "towards care as a site of ethical engagement" (pg. 472). In order to do this, it is crucial to acknowledge the entanglements of care across people and animals, and how care for one can simultaneously be considered care for the other. Currently, multispecies scholarship tends to focus on the care receiver: the animal. However, this risks overlooking the complex human emotions embedded in what it means to 'care-well' (Buller and Roe, 2012), which connect animals to people as part of a relational multispecies care. To care well, is, after all, inevitably an emotional endeavour (de la Bellacasa, 2017).

It is in discussions of an entangled multispecies care, and in the acknowledgment that rules, regulations and rubrics do not always represent a sufficient ethical apparatus to guide human-animal relations in the laboratory, that the notion of a 'culture of care' finds a place. New Zealand's National Animal Ethics Advisory Committee (NAEAC) were the first to define and use the concept of a culture of care in 2002. The Committee defined the concept as a personal duty of care, which importantly "involves more than the basics of animal care. It involves a genuine commitment to the welfare of the animals, a respect for the contribution they make to your work, and a desire to enhance their well-being beyond the minimum standards: in short, a culture of care" (NAEAC, 2002, pg. 2).

Gorman and Davies (2020) posit that cultural geographers are well placed to locate and interrogate the growing emphasis on cultures of care. A new body of work in Geography has critically explored the integration of cultures of care, not simply as a theoretical construct, but as a regulatory commitment. In UK animal research, facilities are now required by regulators to create a culture of care for the animals they use "through supporting staff, fostering communication, and demonstrating respectful and humane attitudes towards animals" (Animals in Science Regulation Unit, 2015). The UK Home Office (2015a) adopts a slightly different stance, suggesting a culture of care should be informed by societal expectations of respectful and humane attitudes towards animals in research. It importantly advises that each establishment will have its own way of conveying a culture of care.

Indeed, ideas of a singular 'culture of care' may be too simplistic. Instead, 'cultures' may be more appropriate, as care is inevitably and ultimately based upon "a complex network of actants and actions with multidirectional flows of activity and connections" (Milligan, 2014, p. 1), which likely vary across facilities. What it means to care is dependent upon the context in which it is considered, and efforts to nurture cultures of care are inevitably made on a spatial level (Ghasemi and Dehpour, 2009). I turn to unpick the messy nature of care in later empirical chapters.

The cultural shift toward a culture of care directly impacts efforts to rehome laboratory animals. This is because, at the core of a culture of care, is a greater impetus and commitment to undertake ethical

practices which surpass existing legislation, and demonstrate a desire to improve the welfare and lived experience of laboratory animals. The EU Directive on Laboratory Animal Care and Welfare (EU Directive 2010/63/EU) originally utilised the phrase 'a climate of care' to enhance the lifetime experience of an animal. This has clear implications for the rehoming context, where an animal's 'lifetime experience' can be extended in the hope of achieving positive welfare states. Through rehoming, animals are provided with an extended life outside of the laboratory, where it is hoped they will experience a socially and environmentally enriched life. Care is displayed on the part of the staff responsible, as the time and effort required to rehome is typically outside of their designated job responsibilities (Home Office, 2015a).

As part of a culture of care, the rehoming of laboratory animals is increasingly introduced as a possibility (LASA, 2002), and is even promoted within UK regulation (Home Office, 2015a). As such, there is a need for research in the social sciences which explores the practice critically, and importantly probes the intricate landscapes that are navigated, and the policies and processes that are traversed as rehoming is attempted. Doing so enables the development of best practice, which will assist with future rehoming endeavors.

2.3.1 The end-point in animal research: is killing inevitable?

Running parallel to efforts to find new ways to improve animal well-being is a growing attention toward the 'end-point'[22] for animals used in research. Despite animal experimentation taking on more ethically contentious aspects (for example through the development of genetically modified animals), the question of why most animals are killed post-experiment remains compelling (Franco, 2016). This question receives further significance as the UK is seen as a leader in animal welfare; its legislation currently exceeds requirements of the European Union's Directive 86/609/EEC on the protection for animals (Festing and Wilkinson, 2007), and in 2014, the World Animal Protection organisation awarded the UK the highest scoring in animal welfare along with just 3 other countries (New Zealand, Switzerland and Austria) (World Animal Protection, 2014). Despite death not being formally considered a welfare issue, killing healthy animals after research is completed can be considered ethically contentious (Franco and Olsson, 2016; Haynes, 2016), especially when these animals are surplus to experimental requirements or when they are healthy, and could otherwise experience a life outside of the laboratory. Thus, in the UK, attention is being increasingly directed toward investigating the opportunities for development of alternatives to euthanasia.

[22] The NC3Rs state that it is now widely accepted that "death as an endpoint to a procedure should be avoided as far as possible and replaced by earlier, humane endpoints".

There are a number of options for animals when they have reached the end of their usefulness for research, though most are humanely euthanised. Franco (2016) explains that the killing of research animals is common for three main reasons: 1) as a scientific requirement (killing is sometimes necessary to collect biological samples), 2) to prevent avoidable suffering[23], and 3) for financial/logistical reasons. Euthanasia may be necessary for the collection of tissues, blood or other "biological matter" (Griffiths, 2014) required to ensure the validity of scientific research (Wolfensohn, 2010). From an ethical standpoint, euthanasia may be appropriate to put an animal out of avoidable pain, termed a "humane endpoint". Wolfensohn (2010) argues that humane endpoints act as an intervention that allows the collection of scientifically valid data, but limits suffering, arguably providing a morally compelling justification for killing. Consequently, humane endpoints are often legally required (Morton, 1999; Stokes, 2002). Finally, surplus animals are often culled if they have been bred in the facility, but are not needed for research (Taylor et al, 2008). In 2018, 1.18 million animals were kept in UK research facilities without being used (Home Office, 2018)[24]. The culling of these animals is often undertaken for logistical or economic reasons, and is a routine procedure within research facilities (Doehring and Erhard, 2005).

Currently, greater attention is being paid to the minimisation of suffering, and death thus has been viewed as a lesser issue. Returning to the harm-benefit analysis discussed earlier, the acceptability of animal research is contingent on an evaluation of harms to the animal and scientific benefits to humans. Franco (2016) terms the development and undertaking of a harm-benefit analysis a form of 'welfarist-utilitarianism', and claims it is employed as an ethical and legal framework with which to assess the necessity of animal research. Under this framework, as long as death is carried out humanely to limit suffering, it is not deemed to constitute a welfare issue. Further, research explores the complex nature of killing, and finds that it is intricately entangled with care; Holmberg (2011) introduces the possibility of both 'loving' and 'harming' when undertaking euthanasia procedures, and discusses what it might mean to 'kill well'. She argues this comes in small acts of kindness: "a whispering voice or the reduction of noise when an animal is put to death" (Holmberg, 2011, pg. 158). Death can also be construed as 'sacrifice' (Birke et al, 2007); animals can die in the service of a greater good. Thus emerges a complex relationship between death, suffering, and care, and how they might be addressed in regulation guiding animal research.

[23] I explore these ideas in further detail with Ally Palmer in a forthcoming paper, which explores debates of death and suffering in two contexts 1) in laboratory animal rehoming, and 2) in pet animals enrolled into clinical trials.
[24] The Home Office have recently (2017) begun to publish the statistics of animals that were bred for experimental procedures, but died without being used in them in a new document titled "Additional statistics on breeding and genotyping of animals for scientific procedures, Great Britain 2017". This accompanies the annual statistics of animals used in experimental research.

However, this is inherently complex, and legislation underpinning animal research is sometimes inconsistent, or may contain, as Olsson et al (2012) term it, 'ethical gaps'. Despite legislation currently appearing to advocate refinement over the reduction of animal deaths, Olsson et al (2012) explain that 'reduction', which, by its very nature supports the re-use of animals, thus reducing overall numbers of animals in research (Hansen et al, 1999), contrasts with 'refinement', which advocates the avoidance of re-use due to repeated exposure to potentially harmful procedures. Most hold the view that it is socially acceptable to kill animals as long as they have had a good 'quality of life'. Olsson et al (2012) extend this logic to suggest that killing more animals is acceptable as long as it allows "each animal used to live a better life". However, as Greenhough and Roe (2018) contend, euthanasia could also be seen to be fulfilling the 'reduction' part of the 3Rs, as well as refinement if the animal is in severe pain. Contradictions within the 3Rs reflect deeper inconsistencies within the theoretical grounding behind euthanasia, including whether it is worse to kill, or to induce suffering. Underlying differences in personal values may also alter the way in which individuals interpret and employ 3R legislation.

This does not mean that killing is without consequence. Drivers to consider rehoming emerge from outside the laboratory walls; public opinion should also be considered[25]. Many view the mass euthanasia of animals, especially if they are healthy, as socially unacceptable (Cudworth, 2015). Some may perceive euthanasia as an infringement of the right to life, diminishing the inherent value of all lives, including that of non-humans (Franco and Olsson, 2016). Euthanasia may have more positive connotations in the veterinary clinic setting, and with companion animals that are euthanised to limit suffering, but in the animal laboratory, issues with routine euthanasia are compounded within a setting where animals are systematically harmed for human benefit. Thus, research should seek to address societal concerns and reflect them appropriately within policy guiding animal research, which creates a space for rehoming as the morally correct course of action where possible.

Furthermore, there is a wealth of work which charts how those responsible for euthanising animals, importantly across different settings, including in the veterinary clinic (Morris, 2012), the laboratory (Rollin, 1987) and the abattoir (Smith, 2002), find the practice emotionally and morally challenging. Additional issues arise when the animal is healthy and thus has the capacity to live a normal life after the research has been completed. For example, and as previously discussed, some animals may be killed simply as a result of being surplus. Therefore, many argue for reflection upon whether there can be a scientific or legal framework which advocates a 'no-kill' approach for these animals. By euthanising animals before their natural death, any positive experiences later in life are denied to

[25] Public opinion polling (mainly undertaken by Ipsos MORI) is frequently employed to gather views on animal research.

them. It is in these contexts that animals emerge as mere scientific instruments or tools (Fleury, 2017). As Yeates and Main (2009) argue, death can indeed constitute a welfare issue, and rehoming offers a way in which to address this concern, introducing a novel and ethical way in which to live with laboratory animals.

To help address the view that animals are disposable bodies once research has been completed, assessments of animal welfare have recently undergone a conceptual shift which notes an animal's 'quality of life' to be important in evaluating their lived experience. Helping an animal to experience a good quality of life links directly to euthanasia: if an animal would have a 'life worth living' (Mellor, 2016) in the absence of euthanasia, one must consider the ethical implications of such a practice which is currently routine within UK research facilities.

Wemelsfelder (2007) suggests that judging quality of life extends beyond investigating how an environment may affect an animal through causing stress or suffering, and instead attempts to ensure animals experience positive affective states. Many of those opposing animal research contend that it is important not only for an animal to be free from suffering, but also to have the right to 'flourish' (Brom, 1999). Boissy et al (2007) echo these sentiments and state the importance of providing a 'good' life and not simply a 'not bad' one. Green and Mellor (2011) also advocate for the importance of igniting positive emotions in animals such as curiosity and playfulness. Boissy et al (2007) suggest that there are four main applications to improve animals' quality of life in both farm and laboratory settings. These include; 1) promoting positive experiences, 2) improving emotional states in the long-term, 3) emphasising the link between positive long-term wellbeing and health, and 4) including criteria of positive welfare in monitoring systems. For laboratory animals, this can mean providing environmental enrichment (e.g. the opportunity to play and a varied environment), and frequent socialisation with both other members of the same species, and humans. It is in following a quality of life framework, which puts an animal's life experience first, and in viewing death as a welfare issue, that rehoming finds a place as part of a revived caring ethical framework.

2.3.2 Introducing the rehoming of laboratory animals

Rehoming is defined by the UK Home Office (2015a, pg. 10) as "*the movement of a relevant protected animal from an establishment to any other place that is not an establishment under A(SP)A*." The "place" referenced is often a farm, aquarium, zoo, wildlife sanctuary or private home[26] (Home Office, 2015a). Despite laboratory animals' role in important medical advances, the use of animals in

[26] Although rehoming does not always take place to these locations (animals can also be 'rehomed' to other research establishments abroad, and even slaughterhouses), as I will show in my final empirical chapter.

scientific research remains a controversial issue (Kilkenny et al, 2010). Rehoming helps to address the unnecessary euthanising of some animals after being used in a scientific procedure.

Despite the existence of literature which explores the rehoming of rescue animals, specifically of street dogs (Schuurman, 2019) and Pitbulls (Weaver, 2013), little research has turned its attention to the rehoming of laboratory animals specifically, despite UK legislation encouraging consideration of the practice. Indeed, the Advice Note 03/2015 of the Animals (Scientific Procedures) Act 1986 outlines the policy process for the rehoming of animals from laboratories in the UK, should this be desired. It should be noted that this is in contrast to other countries such as India, who have solidified the 'rehabilitation' of research animals as a fourth 'R'[27] (Guillen, 2013).

Little research has investigated empirically how new assessments of animal welfare, including a reconceptualisation of death as a welfare issue, and an attention to the lived experience of animals (including the promotion of pleasurable states, not simply the avoidance of negative ones), can be acted upon in the laboratory space specifically[28]. Further, little research has examined the rehoming of laboratory animals from a social sciences perspective. An exception is the work of Koch and Svendsen (2014), who explored how the rehoming of capuchin monkeys in Denmark from research facilities worked to reshape the moral landscape at the time. The authors argue the monkeys moved from being considered a biological resource serving humans, to moral subjects with a legitimate claim to life. This thesis will build on this research by exploring how rehoming is enabled as part of a care-full framework (Buller and Roe, 2012) that extends also to humans. It will also explore both the symbolic, but also tangible processes involved in transforming a research animal into a pet, the atmospheres that shift around animal research as a result, and the wider political and organisational landscapes that are navigated. This involves a significant reconceptualisation of the animal from what Midgley (2003, pg. 211) originally described as "simply a standard object, a piece of laboratory equipment with the function of being used to test hypotheses, a kind of purpose-made-flesh-and-blood-robot" to an animal with a valid claim to life.

This thesis has thus far traced the importance and renewed academic attention toward animal movement, specifically into the human home space, and concurrently how some animals can be considered companions, loved and respected as family members. I have united this more-than-human literature with the mounting pressure in the field of animal welfare to find an alternative to

[27] Pereira and Tettamanti (2004) describe how the Indian concept of *Ahimsa*, which signifies the sacredness of life, guides laws that monitor the use and care of research animals. See more at: https://www.altex.org/index.php/altex/article/view/921/937

[28] Existing work tends to focus primarily on improving enrichment while the animal is kept in the laboratory (see Baumans, 2005 at: https://academic.oup.com/ilarjournal/article/46/2/162/910262)

euthanasia once experimental research involving animals is completed. Taking these two approaches together opens up a space for the rehoming of laboratory animals. My research questions are as follows:

1) What is the current state of rehoming practice in the UK? How many, and what species, are rehomed, and what facility-level opportunities are created, and barriers raised, to the practice?

2) Why is rehoming occurring, and how can care as a theoretical concept help us to probe why staff may wish to provide animals with an extended life outside of the laboratory?

3) How does rehoming happen, and what material and symbolic practices are entailed in the process of laboratory animals becoming companions?

4) Who is involved in rehoming, and how is the practice modifying broader social contracts, for example between experimental science, rehoming organisations, welfare bodies and the wider public?

I now turn to outline my theoretical framework and methodology. I locate my work within existing concepts and theories to cultivate an argument that builds towards new understandings of the dynamic multispecies relationships between care, ethics, place and boundaries.

3. Chapter 3 - Theoretical framework and methodology

3.1 Introduction

As demonstrated throughout the literature review, geographies of the more-than-human are opening up novel and exciting ways through which to interrogate complex human-animal relations (Lorimer, 2010; Greenhough, 2014). However, and perhaps unsurprisingly given the relative lack of literature in the social sciences, and in geography specifically, focusing on rehoming animals at all, a more-than-human framework has never previously been applied to explore laboratory animal rehoming. Yet, doing so answers the call for a recognition of how bringing animals into conversations and viewing them as critical in understanding wider socio-cultural processes of everyday life invites new lines of exploration and ways of interacting with laboratory animals (Arluke and Sanders, 1996).

This thesis will argue that a more-than-human framework is useful in exploring the rehoming of laboratory animals in a number of ways: 1) the theoretical approach involves moving beyond objective current understandings of rehoming that are generally guided by quantitative questionnaires with new owners and biological measures of animal welfare, which may inadvertently overlook more complex understandings of affect, care, ethics and responsibility, 2) the approach has at its heart an acknowledgment of the importance of place, and is thus useful in understanding how the symbolic and legal categories of animals shift as they move into different spaces, 3) the more-than-human works to recognise animal agency, specifically the role that animals might play in bond development with facility staff, and how they might resist domestication and their wider transition into a pet, and finally 4) the theoretical approach entails a critical investigation of why there exists ingrained affection toward certain species and some, for example those genetically modified, are left out of moral boundaries of concern. The theoretical framework will inform my methodology, which I will outline later in this chapter.

3.2 A more-than-human approach and rehoming laboratory animals

Adopting more-than-human thinking allows us to think 'through' animals in novel ways that allow, and actively facilitate, complex understandings of the intersections between humans, animals, care, responsibility, and ultimately, of life and of death, to arise. For example, existing literature examining the phenomenon of laboratory animal rehoming typically consists of quantitative, scientific studies, in which the animal's behaviour is monitored before and after rehoming by physiological measures such as cortisol levels (Döring et al, 2017). There are flaws within this kind of controlled research, which

attempts to isolate and analyse variables, but seemingly ignores the fact that such research is still human imposed, and thus further solidifies boundaries separating the human from the animal. Such work also overlooks animal individuality, reducing animals to biological inputs and outputs[29], constraining both whether and how scientists ask questions about the abilities of species (Birke and Hockenhull, 2012). Further, this way of judging welfare may not accurately reflect individual emotional states (Taylor and Mills, 2007). Suffering is experienced by individual animals, and therefore is not the property of species and cannot be easily reducible to physiological parameters (Dawkins, 2012). Another way in which the rehoming of laboratory animals has been explored is by new owners completing a questionnaire regarding the animals' behaviour and whether the new owners feel the animals have settled adequately into life as a 'pet' (DiGangi et al, 2006). Ultimately, this form of thinking still 'loses' the animal and their agency in discussions by asking the new owner to infer the animal's state of mind and wellbeing. Instead, bringing animals into research methodologies through ethnographies and an observation of their behaviour, and in probing rich, qualitative human accounts, animals are granted more room in interactions (Taylor, 2012). In this framework, animals are no longer deemed 'thing-like' beings devoid of inner lives and sensibilities and are instead embedded in, and crucial to, broader societal and spatial orderings (Philo and Wilbert, 2000). I will attend to this idea in more detail later in this chapter which outlines my methodology.

As discussed in the literature review, more-than-human geographies are characterised by a focus on space and place, which make a difference to the very conditions of the relations at play (Philo and Wilbert, 2000). These ideas are crucial when exploring the rehoming of laboratory animals, which, by its very definition, involves the physical movement of the animal from the laboratory to another place (whether this be the farm, zoo, sanctuary, aquarium or private home). Integrating more-than-human thought when exploring animobilities opens up an avenue to be critical of socially constructed spaces, and how movement across space, whether permitted, prevented or encouraged, helps to restructure both the space, and the categorisation and value, attributed to the animal.

This research will also integrate more-than-human thought by exploring the role animals have in their own rehoming through bond development with staff responsible for their care. For example, Arluke (1990) suggests physical characteristics, including unique behaviours, may increase staff attention to an individual animal. By acknowledging that human-animal bonds are multidirectional, and that the animal's behaviour, personality and characteristics might have a role in bond formation, the animal is granted agency and space in which to shape relations with humans (Ingold, 1994).

[29] Vinciane Despret (2016) considers these questions in her book 'What would animals say if we asked the right questions'? She finds there is an irony in the creation of an artificial laboratory environment, free from "stories" and anthropomorphism, but instead limits animals to reactions. Instead, she argues, animals actively engage, give, exchange and receive in relations with humans.

A more-than-human approach also advocates for an exploration of why some animals are more likely to be brought into the nexus of moral concern, and others less likely to be subject to caring practices (Lorimer, 2007)[30]. More-than-human theories have long explored our complex relationships with different animals (Birke et al, 2007), including an attention to species boundaries (Miah, 2008). This is also useful when considering broader issues such as the development of transgenic species (Holmberg, 2010) and the differing ways in which we might care for these animals (Davies, 2012).

Although literature on laboratory animal rehoming has previously examined how animals might physiologically and behaviourally settle post-rehoming, none has considered the affective, emotional and care-full processes through which rehoming originally occurs. In fact, research has neglected to consider facility perspectives at all, and instead most attends to the viewpoints of new owners (Carbone et al, 2003; Döring et al, 2017). Yet, by exploring the perspectives of those working with animals in research facilities, it is possible to understand *why* animals are chosen for rehoming. Doing so sheds light on why some boundaries which separate research animals from pets are deemed more permeable than others, and why it is that the domestic human home is considered the "right place" for certain species to reside. This includes considering the socio-cultural and historical dimensions embedded in decisions surrounding choosing rehoming candidates.

To conclude, by critically investigating the practice of rehoming and associated ethical, cultural, regulatory and moral practices through a more-than-human framework, a deeper understanding is enabled. Bringing to light complex human-animal relations raises rich and provocative ideas. As Levi-Strauss (1964) suggests, animals are quite simply "good to think with", and, by decentring the human, a valuable conceptual space is revealed for actively moving the animal out from the cultural margins (Baker, 1993). By taking the animal seriously, this research will contribute to efforts within Geography and related disciplines to foster a 'more-than-human' appreciation of ethics, agency, care and responsibility. The following section moves to explore two central concepts that will be employed throughout this thesis to better understand the complex dimensions and dynamics entangled in the rehoming of laboratory animals.

3.3 Introducing boundary work and boundary objects

As previously discussed, a primary objective of a more-than-human approach is the deconstruction of boundaries which separate the animal and the human (Wolch and Emel, 1998), a division to which much literature examining animal geographies has repeatedly drawn attention (Barad, 2003;

[30] I explore the species angle in rehoming debates in an upcoming book chapter titled *""The place for a dog is in the home": why does species matter when it comes to rehoming?"* (Skidmore, forthcoming).

Thompson, 2010; Birke and Hockenhull, 2012; Sage et al, 2016). As later empirical chapters will show, the study of boundaries holds particular purchase when exploring the rehoming of laboratory animals. This section will introduce and define boundary work (Gieryn, 1983) and boundary objects (Leigh Star, 1989), explain how they have been applied both within other disciplines and specifically in the field of animal research, and finally demonstrate their applications and uses within this research.

Gieryn coined the phrase 'boundary work' in 1983 in a paper published in the *American Sociological Review*. Its original application was to define what is considered science, and what did not fall within these carefully constructed boundaries. Within this, the aim of boundary work was to maintain the power of science, which was valuable to scientists in their pursuit of professional goals and establishment of intellectual authority. The creation of boundaries helps to build and maintain a public image of science by contrasting it favourably to activities deemed 'unscientific'. Yet, Gieryn (1983) acknowledges that science is not a universal concept, and consequently the boundaries that are drawn around it are consistently drawn and re-drawn, both across time and space, to maintain the façade of the power and authority of science.

Boundary work can also be applied more generally to demonstrate how symbolic and material borders are constructed around themes, theories, people, places and objects to establish and maintain power (Lamont and Molnar, 2002). Boundary work is thus useful as a structuring device through which to undertake complex analytic work (Wainwright et al, 2006), and as such has been applied in a multitude of contexts. I will outline some of these contexts later in this chapter.

Born from boundary work comes the notion of a boundary object, developed by Susan Leigh Star (1989)[31]. According to Leigh Star, the boundary object resides between social worlds and is ill structured. Individuals act both toward and with the object in question (which in this research I will theorise as the laboratory animal to be rehomed), and when an object's boundaries are deemed to be permeable (i.e. the animal is considered a suitable rehoming candidate), the object is prepared ("worked on" according to Leigh Star) by "local groups" (pg. 604). These groups do not always have a shared consensus, but cooperate to achieve a common goal. In the context of rehoming, and adopting her interpretation, the "groups" referenced include the research facility, the rehoming organisation, the public, the zoo, sanctuary, farm, or aquarium. These organisations help to 'build' the animal and support its adaptation to a new identity, whether this be as a 'pet', 'wild', or 'farm' animal. These ideas will be explored in the final empirical chapter.

[31] Leigh Star's (1989) boundary object idea was initially conceived of as an appropriate data structure for "distributed artificial intelligence", but has since been applied in a diversity of contexts. In a more recent paper (2010) she attempts to define what does not classify as a boundary object.

As Davies (2000) suggests, collective objectives enable actors investing in a partnership to collaborate despite their differing worldviews and social, cultural and intellectual beliefs. As well as investigating the complex work of multiple stakeholders in the formation of boundary objects, Leigh Star proposes that the "backstage" work itself is important, and that it is necessary to examine the policies and processes (such as training and socialisation) by which an object transforms and transgresses boundaries. This includes thinking critically about the materiality and symbolic importance of the object in question, and a consideration of different interpretations of 'animality' in diverse spatial and temporal contexts (Haraway, 2008; Schuurman, 2019). Investigating this 'backstage' work will be crucial within this research, where the laboratory animal is "re-made" into a pet, through routine yet complex domestication practices. These ideas will be explored in chapter six.

3.4.1 Previous applications of boundary work

Boundary work is "complex, contested and contingent" (Davies, 2000, pg. 435), and its scope and application currently extend far beyond Gieryn's (1983) initial use of the term. Boundary work now features heavily in studies undertaken within the animal geography discipline; more-than-human research discusses the significance and implications of a variety of boundaries, including that of the human-animal boundary, the nature-culture boundary, and the domestic-wild boundary (Philo and Wilbert, 2000). Yet, similarly to the animal and the human, it is crucial to view boundaries not as divorced from one another, but instead entangled. For example, physical geography is irrevocably intertwined with cultural geography; nature and its depictions have always been cultural (Descola, 2013), and the non-human holds significant implications for what it means to be human (Wolch and Emel, 1998). Thus, despite the acknowledgement that boundaries exist, it is crucial to undertake research which critically attends to how boundaries can also be permeable, dissolved, bridged and transgressed.

Different forms of boundary work have been developed and applied within multispecies scholarship. Sage et al (2016) investigate the role animals play in human organisational boundary work, proposing that humans both organise and manage space by conducting boundary work with animal agencies. This occurs by three mechanisms: invitation, exclusion and disturbance; setting spatial limits on animal movement through the building of physical barriers such as fences and walls. Yet, animal actors have a role in this organisation, and the process is therefore not unidirectional but inter-relational; Sage et al (2016) explain how boundary work is enacted *through* and *with* rather than simply against animal agencies. Further, boundaries need not be tangible and spatial, but emotional; Ellis (2014) discusses another type of boundary work, one which the author terms 'boundary labour'.

This form of boundary work is employed to describe the way in which meat producers manage their emotion that separates cattle physically and emotionally from the products derived from their bodies. Although the producers recognise that cattle have emotions, they simultaneously treat them as economic assets. Consequently, boundary labour generates the emotional space needed for modern beef production and consumption, allowing for ethical disengagement and a use of the animal bodies free from sentimentality and emotion.

Using boundary objects as a tool to better understand stakeholder relations, communication and collaboration is also gaining increasing popularity in work in the social sciences. Keulartz (2009) uses boundary work in the context of ecological restoration, and suggests that, drawing on Leigh Star's interpretation, studying boundaries can facilitate communication, consensus building and conflict management. Similarly, Nel et al (2016) employ boundary work in a conservation setting, and discuss how the cartographical map represents a boundary object which facilitates and portrays the interests of a variety of participants (both human and non-human) to promote cooperation. Through its ability to highlight complex stakeholder relations, working at the boundaries and conceiving 'things' (whether human or non-human, animate or inanimate) as boundary objects to assist with collaboration can help to address ethical and power related issues in research to ensure a diversity of views are represented. Chapter seven will explore this idea further.

Boundary work has rarely been employed in the setting of animal research, although that which does reflects on the benefits of using the concept as an organising device (Hobson-West, 2012). Wainright et al (2006) propose that boundaries are drawn around what constitutes ethical practices in science. The authors argue scientists working in ethically contentious areas, such as animal research, "present themselves as ethical, as well as expert actors" (Frith et al, 2011, pp. 571). Hobson-West (2012) examines the applications of boundary work for foregrounding ethics, and highlights the existence of three boundaries; the human-animal boundary (researchers suggesting that humans have a higher intrinsic moral worth, and are therefore deserving of the benefits gained by animal research), boundaries between animals inside and outside of the laboratory (for example those used in research and those used in food), and boundaries in animal experimentation regulation (which were found to both protect and distort the progress of science). Hobson-West (2012) explores how researchers construct and present a series of disreputable 'others', both accepting and rejecting responsibility, and alternating between a variety of repertoires. She concludes that scientists rely on the construction of boundaries in portraying their research as ethically sound.

3.5.2 Novel uses of boundary work in rehoming

Despite more-than-human literature increasingly turning its attention to the boundaries and borders that help to dictate our relations with animals, no research has previously used boundary work to explore the categorisation of laboratory animals. The interrelation between spatial and symbolic boundaries holds particular purchase here. Lamont and Molnar (2002) define symbolic boundaries as 'conceptual distinctions', employed to group objects, practices, and people[32]. Once again, the non-human is overlooked. Yet, boundary-making practices are important in understanding why humans group animals into conceptual categories, including pets, family members, foodstuffs, and instruments for research, and how animal movement and domestication practices can destabilise these groupings. The laboratory animal in particular experiences a certain "symbolic ambiguity" (Hobson-West, 2007). Birke (2012), for example, remarks how laboratory rats can be considered simultaneously pets, pests, or paragons of biomedical research. Nevertheless, the complete objectification of an animal is difficult, and thus human-animal bonds develop with laboratory animals (Bayne, 2002) which disrupt traditional boundaries, and render viewing the animal solely as a scientific object challenging (Arluke, 1990).

Indeed, the process of 'becoming pet' unsettles the construction of boundaries in relation to the human and animal, and demonstrates the involvement of animals previously deemed 'other' (Schuurman, 2019) in intimate personal relationships (Hobson-West, 2007). This process is further complicated when the animal in question was previously a standardised laboratory animal, and thus constructed in relation to instruments and data, integral to scientific knowledge accumulation (Lynch, 1988; Birke et al, 2007). Consequently, these animals are typically far removed from the boundaries that dictate what constitutes a pet. It is for this reason that exploring the rehoming of laboratory animals through the lens of boundary making is so fascinating, and can produce a more robust and 'lively' (Haraway, 2008) understanding of boundaries in multispecies scholarship. With rehoming, the regulatory processes and affective states embedded in the act of shifting across socially constructed boundaries becomes increasingly compelling (Döring et al, 2017).

This thesis will draw attention to the existence of numerous boundaries in relation to the rehoming of laboratory animals. These include an attention to how certain animals, such as those genetically modified, are constructed as 'other', and how this may change levels of care afforded to them, and their chance of being rehomed. It will also explore the symbolic and socio-legal processes of categorising animal life, and the practical methods of training and socialisation through which to

[32] The authors explicitly explain that "symbolic boundaries are conceptual distinctions made by social actors to categorize *objects, people, practices, and even time and space*" (pg. 168, emphasis added). Animals are not given explicit mention throughout the whole paper.

'make' a pet. Finally, the thesis will draw on the work of Leigh Star in exploring organisational boundary work, and how the rehomed laboratory animal can be conceived of as a boundary object, spanning organisational borders and uniting different social groups (facilities, zoos, sanctuaries, rehoming organisations). Thus, we see how the practice of rehoming laboratory animals re-shapes traditional relations in the laboratory space, shifts atmospheres around animal research, and opens up new spaces for collaboration which dissolve bridges and remake boundaries.

3.6 The more-than-human, the caring circuit, and boundaries in the laboratory

Considerable ethical responsibility arises in the so-called 'relatings' (Haraway, 2008) in which humans share and cohabit space with animals (Birke and Hockenhull, 2012). This is particularly relevant in the animal research facility. The commodification of animal bodies has led to "turbulent politics" surrounding animal use. As Haraway (2008) suggests, there is a rich network of active power relations at work in the laboratory. However, reformulating the human and the animal through a more-than-human lens opens up new forms of response-ability (Haraway, 2008), and brings into play both the idea of moving beyond traditional ethical frameworks, and ensuring animals are actively involved in the creation of them through embodied multispecies exchanges. This entails a movement away from existing anthropomorphic framings of ethics and animal welfare (Ryan, 2015). Derrida (2008) too suggests a dismantling of the notion that the animal is "outside of the ethical circuit" (Ryan, 2015). Haraway (2008) proposes that rethinking relationships with animals, and indeed the ethics that guide those relationships, forms part of a 'responsible cosmopolitanism in-the-making', and an active component of the wider moral turn within Geography (Proctor, 1998).

A more-than-human approach also advocates the imagining of alternatives, and thus a resistance to traditional laboratory practices. Instead, a space is opened to recognise animal cognition, and the capacity of animals to suffer and to think (Greenhough, 2014). More-than-human animal studies encourages humans to respect, respond and reflect upon the way in which *all* animals are treated and, building on Acampora's (2006) work, should begin where humans and animals already share and co-exist within the same moral context, termed "somatic sensibility" (Greenhough, 2014). We need to directly meet the needs of the sentient being, as part of a compassionate concern for the animal 'other' (Kupsala et al, 2013). It is here that the significance of rehoming is revealed.

Indeed, rehoming, as not currently required by European law, suggests a surpassing of traditional ethical guidelines regarding animal care and use (Wemelsfelder, 2007). Rehoming also reflects a wider rejection of utilitarian views of the ease and convenience of euthanasia, and notions that the sacrifice of the animal was justified as a result of the benefit to humans (Lynch, 1988; Birke et al, 2007). Rehoming also demonstrates a shift in assessments of welfare which reflect the desire to provide a good quality of life, and not simply one that is devoid of pain and suffering (Wemelsfelder, 2007; Boissy et al, 2007). Rehoming suggests that the animal's life does not need to end in the laboratory, and that research animals are not forever restricted to the category of 'laboratory animal'. This results in a wider restructuring of the ethical, regulatory and cultural relations which frame existing human-animal relations. These ideas are presented visually in the conceptual map below.

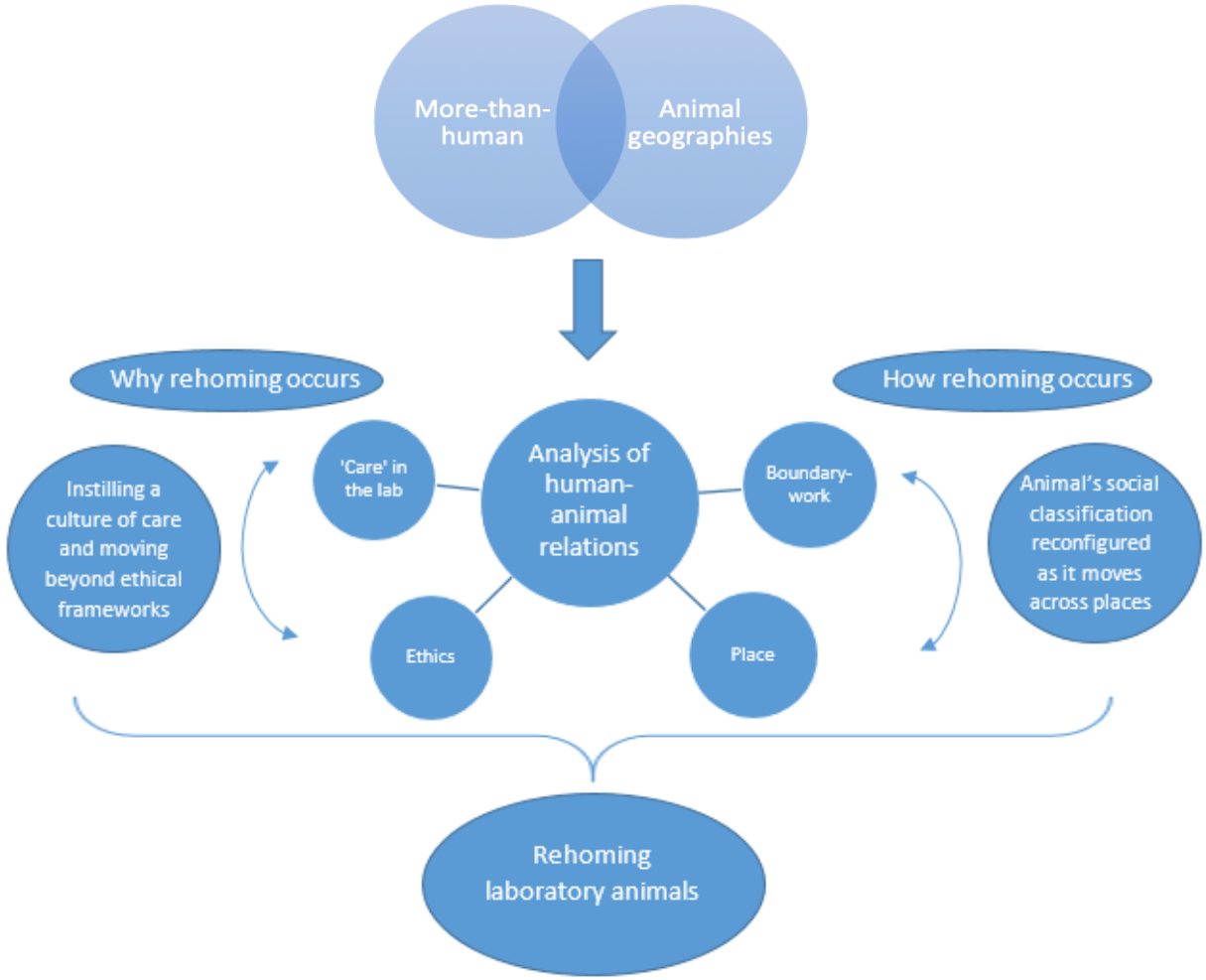

Figure 1 – The conceptual map, developed in line with existing literature, that will be used to guide later empirical chapters.

4. Methods

4. 1 Methods in the more-than-human

A variety of methods are employed in more-than-human scholarship, which necessitate 'doing' human geography differently. MacLure (2013) suggests more-than-human methodologies represent a "cabinet of curiosities" rather than order, objectivity and categorisation. Methods in the more-than-human include sensitive, intimate and rich analyses gathered from questionnaires, interviews, focus groups, field diaries, ethnographies and archival analysis (Dowling et al, 2017).

Current multispecies scholarship provides a new way of thinking about landscape, life, nature, culture, and conceptualisations of both the human and the animal (Probyn, 2014). These methods address concerns with representation and the social constructions of nature (Lorimer, 2010). However, there still exists a need for an approach that combines methodologies in order to address the shortcomings of individual methods. The world is not merely out there waiting to be revealed (Greenhough, 2014, pg. 101), instead we need to strive to find new ways and techniques through which to engage "with diverse worlds and more-than-human agencies".

Before explaining how I collected my data, it is important to clarify the theoretical grounding behind the decision as to which methods should be used, and why they help to address and think through a more-than-human approach. Recent work within the disciplines of geography, sociology and anthropology posit that human behaviours and processes are shaped by interactions with more-than-human materialities (Franklin, 2007), suggesting we should open up enquiry with regards to who, and what, has the capacity to know and communicate (Arluke, 1990; Ulmer, 2017). More-than-human approaches do not attempt to remove the human from research, but instead recognise and appreciate that non-human elements exist and warrant further consideration than historically they have been given. Knowledge frameworks and theoretical and methodological approaches that do not consider these elements can thus be considered incomplete. We are connected to the environment and all agents within it, thus methodological thinking should respond in kind by considering how we shape, and indeed are shaped by, nature, the environment and animals (Barad, 2007).

However, when considering how humans communicate – through language – animals are rendered inarticulate (Rothfels, 2002). Animals cannot participate in interviews or complete questionnaires, meaning their social networks and ways of thinking are difficult to access (Lusseau and Newman, 2004). Therefore, we need to account for the animal voice and bring them into frameworks which enable them to co-produce knowledge and impart their individual experiences. This requires a more embodied and relational methodology. Developing such a methodology is an "ethical, political, and

intellectual imperative" (Ulmer, 2017, pg. 843). Indeed, Ferrando (2012) notes that more-than-human approaches seemingly resist the notion of a concrete and objective method employed to collect replicable and valid data. The more-than-human critiques the idea of objective knowledge through its promotion of more embodied and relational knowledge production. More-than-human methodologies should consequently be viewed and interpreted as adaptable and sensitive (Ferrando, 2012).

Adopting more-than-human methods of data collection necessitates a re-thinking and re-structuring of how ethics, values, and responsibilities are embedded throughout the methodological design process. More-than-human research demands a form of reflexivity and an acknowledgment of traditional power hierarchies that privilege human ways of knowing and producing robust, objective, and reliable data. Instead, and by adopting a fluid ontological approach, we must understand the relations between networks and "assemblages" of non-humans and humans. There should be a recognition and appreciation of shared agency in the shaping of issues (Forlano, 2017). By doing so effectively, a space is opened up for asking methodological questions about the processes of the (more-than) social and human-orientated world (Forlano, 2017).

4.2 Employing triangulation: integrating the quantitative

There is currently a lack of basic information regarding laboratory animal rehoming in the UK, something which academic literature has noted as a gap in knowledge needing to be filled[33] (Carbone et al, 2003; Clark, 2014). I therefore began my research by designing and distributing a questionnaire to be completed by animal research facilities across the UK. The aim of the survey was to extend knowledge by gathering baseline data on numbers and species of animals rehomed, current perspectives regarding rehoming policies and processes, why research facilities do, or do not rehome animals, and associated benefits of, and obstacles to, rehoming.

Silverman (2016) suggests it is useful where possible to begin with a quantitative study and later use qualitative data to interpret those findings, as this helps to contextualise the research topic. Qualitative research has been criticised for a lack of validity and rigour (Diefenbach, 2009), and even for being "unscientific" (McVilly et al, 2008). Mays and Pope (1995) suggest that in order to safeguard validity, triangulation[34] should be employed, which involves the collection of data from a range of different sources and by different means. Mixed methods present a rapidly developing field (Kelle,

[33] Existing research is based mainly from case study research, at one facility, with one group of animals (see DiGangi et al, 2006, and Döring et al, 2017; 2018).

[34] See Jick (1979) for a more detailed discussion of triangulation, which he describes that quantitative and qualitative methods should be viewed as "should be viewed as complementary rather than as rival camps".

2006), and combining qualitative and quantitative methods helps to compensate for their individual weaknesses. In this research, the quantitative questionnaire provided context in terms of understanding the numbers and species of animals rehomed, and the interviews allowed for a deeper interrogation of the social, cultural, political and economic reasoning behind rehoming decisions (Silverman, 2016). This 'triangulation' (Jick, 1979) allows for greater accuracy in research. Examining the same phenomenon from multiple perspectives enhances understandings and allows unanticipated and often complex dimensions to emerge.

Questionnaires, although limited in the level of detail they can provide (Choy, 2014), are valuable for recognising irregularities, differences, and highlighting trends in data (Davies et al, 2002). They represent a useful tool for measuring human behaviours, importantly reaching a wide range and large number of respondents, particularly if the questionnaire is distributed online (McGuirk and O'Neill, 2016). Web-based questionnaires also allow access to individuals who would otherwise be difficult to contact (Frippiat et al, 2010). Online mailing lists, as used within this research, therefore provide an avenue to locate potential respondents who would otherwise have been difficult to reach. This is particularly pertinent in this study due to the highly confidential nature of animal research and therefore the difficulty of contacting those working in the field.

However, there are challenges when collecting data via questionnaires. Participants may find it difficult to interpret the questions (Foddy and Foddy, 1994). For example, in this research, there may have been challenges in understanding the word rehoming. This was reflected in one participant reporting that they were unsure if transferring laboratory cattle to dairy farms would constitute rehoming. For the purposes of the questionnaire, a facility could say that they had engaged in rehoming if they had 'rehomed' (moved a live animal to a location outside of the facility that was not another research establishment) in the previous 3 years. Shortcomings of the questionnaire also include its use of closed answer questions (Kelley et al, 2003), which limit the level of depth and detail of answers collected. However, answering questions in this way increases convenience for the participant, as well as the likelihood of questionnaire completion (Kelley et al, 2003). Thus, the lack of detail in collected responses was necessary in order to increase participation in the survey and provide a more generalised context to both the numbers and species of animal rehomed from research facilities. Providing short answer questions also ensures responses are more easily analysed and compared (McGuirk and O'Neill, 2016).

Further, it should be noted that the collected responses may represent a selection bias, as those who rehome more regularly may have been more likely to complete the survey to demonstrate their positive ethical profile (Reja et al, 2003). Furthermore, as animal research is widely acknowledged as

an ethically controversial issue, there may have been a social desirability bias in response to more subjective questions (Van de Mortel, 2008). Indeed, Chung and Monroe (2003) found that social desirability bias is higher when the topic of the questionnaire is more ethically contentious. As such, participants may have been more likely to say that their facility did not participate in rehoming because of worries regarding the animal's welfare if it were to be rehomed, when it may simply have been more convenient for the facility to euthanise the animal. At the same time, it should be acknowledged that a main strength of online surveys is that they are self-administered, offering the participant a certain amount of privacy. This may lead to more honest reporting on sensitive issues such as those concerned with animal research practices (DeLeeuw et al, 2008).

4.3 The questionnaire process

I will now move to outline how the questionnaire was designed, distributed, and analysed. The data collected was used in the development of stage two (stakeholder interviewing) of the research by introducing new lines of enquiry not previously considered or raised in the literature review, as well as being a useful tool for recruiting participants for interview. The questionnaire was considered and approved by the University of Southampton's Ethics Committee (ERGO reference number 32225.A2). All those who responded to the questionnaire were given the opportunity to ask questions about the study, and provided their consent to participate in the research. All personal data was protected and results were anonymised.

I began by distributing emails, which contained a web link to the questionnaire, to participants (Appendix C). Also attached in the email were a covering letter and a participant information sheet, which explained the purpose of the questionnaire and the instructions for completion. The consent form was included at the start of the questionnaire, and the respondent had to consent to participating in the study in order to complete the questionnaire. Despite its ease, McGuirk and O'Neill (2016) assert that this option may present ethical issues as it is difficult to obtain adequate online informed consent (Varnhagen et al, 2010). Indeed, Varnhagen et al (2010) suggest that when consent forms are provided online, participants report not reading or only skimming the material (Wogalter, 1999). However, given the questionnaire was online, it would have been difficult (and more time consuming for the respondents) to supply a physical consent form and ask them to post the signed version back to me.

The survey was devised and distributed utilising the University of Southampton's software iSurvey. This is a cost effective and efficient way to circulate a questionnaire (Smyth and Pearson, 2011), and electronically compresses the barrier of physical distance. Enabling the survey to be completed online

also increases convenience for the participant, as it allows the questionnaire to be completed at the best time for them, thus enhancing levels of comfort whilst doing so (Bowden and Galindo-Gonzalez, 2015). The questionnaire was piloted by myself and two colleagues to ensure the link, and the questionnaire, functioned properly before distribution to participants.

The questionnaire was spilt into 6 sections: 1) Role and background both of the respondent and of the facility they represented, 2) The facility's rehoming policy, 3) Barriers to rehoming, 4) Opportunities presented by rehoming, 5) The rehoming process, and 6) Reasons for choosing not to rehome animals. Designing an effective questionnaire is not an easy process; it is important to ensure the wording, sequence and format of the questionnaire is appropriate. Questions should be clear, simple, and flow logically (McGuirk and O'Neill, 2016). It is suggested that questionnaires begin with simple questions which are easier to answer, and more complex questions which require further reflection be placed later in the questionnaire (Leung, 2001). In this research, questions at the beginning of the survey concerned the participant's role, and the work undertaken at their facility. These were considered to be less difficult and time intensive questions to complete before moving onto questions that required greater consideration, including those relating to rehoming practice.

As the participant had only to answer questions relevant to them based upon their previous answers, the time taken to complete the questionnaire was shortened. iSurvey allows future questions to be filtered based upon past responses. This represents a main advantage of internet questionnaires, as respondent burden can be lessened (Couper and Nicholls, 1998). However, doing so was a complex task technologically, and so required significant time investment when designing the questionnaire (Wright, 2017).

The survey included both closed and open questions, but comprised mostly of checkbox options. In the case a suggested option was not relevant, participants were able to select an 'other' box and manually add in their response. Including such open questions allowed for spontaneous responses that were not limited to the answers I expected to find. Parfitt (2005) suggests that including open questions adds "colour" and an additional level of depth to answers when analysing the results. This ensured participants were always able to express their opinion on a matter, whether it was something I had included or not. The majority of participants (68%) completed the questionnaire within 15 minutes, and only 19% of participants took over 30 minutes to finish the survey. This is important because McGuirk and O'Neill (2016) propose that the average questionnaire should take no more than 20-30 minutes to complete, and Lumsden and Morgan (2005) advocate that if questionnaires take less than 20 minutes to complete, response rates increase.

Given the sensitive nature of the research and difficulty in contacting participants (staff at UK research facilities undertaking animal research), they were approached indirectly through the auspices of the Animals in Science Committee[35] and the AWERB (Animal Welfare and Ethical Review Body) Hub network[36]. Mailing lists represent an effective way to circulate questionnaires (McGuirk and O'Neill, 2016) and help researchers to access participants. Participants represented a variety of roles, including but not limited to: Establishment Licence Holders (ELHs), Named Veterinary Surgeons (NVSs), AWERB chairs, Named Animal Care and Welfare Officers (NACWOs), and Named Information Officers (NIOs). It was important that respondents were able to participate on behalf of their facility, because the questions were assessing views at the facility rather than the personal level. Thus, any employee could complete the survey if they had access to the necessary data and/or knowledge.

Reminder emails were circulated twice, as this has been shown to increase participation rates; in Wygant et al's (2005) research, using four reminders as opposed to none increased participation by 37%. In order to further increase participation, respondents completing the questionnaire were granted early access to the preliminary findings. The use of incentives can strongly affect participation rates (Singer and Ye, 2013), and can also enhance "good will" between the researcher and the participant community (Wright, 2017). As study reports can be of value to participants (Wright, 2017), I produced a stakeholder document to send to respondents, which also included possible policy implications. Studies also find that the theoretical, practical and political importance of the research should be made clear, and the appeal for participation should be as non-threatening, and ideally interesting, as possible (Lefever et al, 2007). I ensured I met this suggestion by including a participant information sheet, which explained how the aim of the survey was to extend knowledge regarding rehoming which would then guide policy development on the topic.

41 facilities out of approximately 160 UK research facilities currently operating completed the survey, giving a response rate of ~25%. Quantitative results were imported from iSurvey into Microsoft Excel to analyse the findings. SigmaPlot was used to produce graphs.

In order to calculate the numbers of animals kept in UK research facilities to enable a comparison to the numbers rehomed, the "total animals used for the first time in experimental procedures"[37] was used. As GM (genetically modified) animals cannot legally be rehomed, the "creation & breeding of

[35] The ASC is an advisory non-departmental public body, sponsored by the Home Office.
[36] The AWERB Knowledge Hub Group exists to facilitate the communication between AWERBs across the UK.
[37] For the first time, in 2017, the Home Office published figures of animals kept in research facilities, but not used in experimental procedures. See more here: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/901224/annual-statistics-scientific-procedures-living-animals-2019.pdf

GM animals not used in experimental procedures" was omitted from the analysis. To calculate the numbers of surplus animals—which research reports are the most common rehoming candidates—the Home Office document titled "Additional statistics on breeding and genotyping of animals for scientific procedures, Great Britain 2017" was used. This is because it includes non-GM animals that were bred for scientific procedures but were killed or died without being used in such procedures. However, it only states the number not used (1.81 million animals) and attributes 80% of the figure to mice, 11% rats and 7% fish. In order to calculate the remaining 2% of 'other' animals, I employed a weighting system whereby the same ratios of animals used for the first time in procedures were applied to the remaining 2% of animals (here cats, dogs other than beagles, beagles, primates, horses, rabbits, guinea pigs, gerbils, hamsters, ferrets, birds, quail, goats, sheep, cattle, pigs and amphibians).

Analysing data from the open questions involved a structured inductive thematic analysis. This helped to identify common topics, ideas, concepts and patterns arising from the qualitative, open answer data. In order to do this, I used Nvivo12 to code the data and to generate themes from it (such as 'reasons for not rehoming', 'animal suitability for rehoming', and 'owner preparation'). Using Nvivo12, the thematic analysis also included a frequency count, whereby it was possible to see the number of times each identified theme was referenced across all participants.

4.4 Interviews as a more-than-human method

In order to supplement the findings of the questionnaire, it was necessary to undertake interviews to understand the deeper and more complex perspectives of those responsible for choosing animals for rehoming, developing socialisation schemes, and identifying and preparing owners. Equally, I wanted to understand why rehoming was not considered a possibility for certain facilities. As well as undertaking interviews with staff at research facilities, it was similarly important to consider the views of other stakeholders in the rehoming process, such as sanctuaries, zoos, rehoming organisations, and members of the public who had rehomed laboratory animals personally. Within this, I wanted to understand how these stakeholder groups worked together, and whether such collaborations were constructive. The aim was to ensure coverage of the entire rehoming process – including its associated policies, processes, and collaborations – in order to trace the life of the animal before, during, and after rehoming.

When using a more-than-human lens of analysis, it is imperative not only that human accounts are uncovered, but that animal agency is recognised and integrated. Although interview methodologies involve centring the human, Tsing (1995) posits that the study of multispecies relations requires mobilising the knowledge of those close to, and passionate about, non-human animals. Making use of

the dwelt and situated knowledge of those who live with, work with, and encounter animals daily provides invaluable knowledge regarding the animals themselves, and helps to unpack the complex relations they have with the humans they encounter (Forlano, 2017).

I did this indirectly through conversing with interviewees, who work with, and live closely to, animals. Humans share an intelligence with, and awareness of, animals based upon bodily movements and fleshy interactions (Davies et al, 2016), and these intimate and entangled multispecies relationships can be accessed through human accounts. Indeed, as Maurstad et al (2013) advocate, when participants discuss their personal thoughts, experiences, and observations, the seemingly mundane interactions with the animals they discuss are simultaneously revealed. Koch and Svendsen (2015) too explain how interviewing researchers who interact with, and care for, animals can provide valuable fragments of the animal experience. These practices offer crucial insights into nature-culture becomings as part of interactive multispecies dialogue.

For example, literature has previously drawn attention to the human-animal bond, both within the laboratory and in other environments where humans and non-humans share space. Research investigating these multispecies bonds typically draws on qualitative methodologies to understand how they develop (Horowitz, 2008; Cowles, 2016). Through intimate interview accounts, humans disclose how an animal approached them, or initiated the bond; as Weiss et al's (2012) research shows, dogs that came to the front of their kennel at rehoming organisations were more likely to be selected by adopters over those dogs that stayed at the back. Bayne (2002) explains how what she terms the "human-research animal bond" is multi-directional, and that in laboratories animals may initiate relationships with staff. Consequently, interviews do not simply uncover human accounts, but also that of the animals with which they interact intimately and frequently. Thus, by employing more-than-human interview methods, it is possible to access the animal through the human.

Indeed, although accessing the animal through human accounts, carrying out interviews with those who work with animals enables researchers to hear the animal voice as the interview is repurposed in a more-than-human manner. Pitt (2015) uses 'knowing through showing' to reconsider and invite research to go 'beyond the human'. Drawing on research exploring community gardens, Pitt uses techniques of moving, walking and importantly talking. In these interviews, gardeners share their knowledges of plants, and therefore tune the researcher's attention towards their agency ('plantiness') and their characteristics. Interviews can thus help to recognise, attend to, and represent the more-than-human (Dowling et al, 2016). The walking interview specifically is useful in this context and helps to capture the vitality of non-human life (Waitt et al, 2009; Ginn, 2013). For example, Jukes et al (2019) uses interviews to facilitate questions and discussion that brings attention to events and

interactions between humans and animals. Therefore, although not a traditional more-than-human method, the interview does represent a method which allows the non-human to be accessed, and to account for their agency, personality and individual character.

For example, the interviews were used in this research to show how animals instigated bonds with people, how they shaped their own domestication (including attempts to resist it), and how they influence wider human stakeholder discussions. In fact, simply the fact rehoming is attempted and surpasses the standard duty of care towards laboratory animals shows an appreciation of animals as individuals with agency, and an intrinsic value and right to life. I argue that, by studying rehoming and talking to those responsible for ensuring the practice is enabled and runs smoothly, it becomes possible to see the animal's role in the process. I now move to outline the interview process, and acknowledge the limitations of such a method in the context of this research.

4.5 The interview process

Interviews are a foundational method of the social sciences (Denzin, 2001), and represent a 'way of knowing' (Seidman, 2006). Interviews, or 'conversations with a purpose' (Burgess, 1988), embody an opportunity for the researcher to probe and delve deeply to uncover the complex social experiences of participants (Burgess, 2003). The primary way in which to understand a process (in this case laboratory animal rehoming) is through gaining an insight into the experience of the people involved (Seidman, 2006). Thus, it was necessary to converse with the stakeholders engaged in rehoming in order to uncover how the process typically takes place, and the associated opportunities and barriers presented.

Despite being a common method of data collection (Miller and Brewer, 2003; Bryman, 2016), interviews are not simple or easy to undertake. In fact, Leonard (2003) describes interviews as "one of the most widely used and abused research methods". The researcher must simultaneously be attentive, interpret what is being said, and manage the relationship with the interviewee whilst the interview is in progress (Bryman, 2016). Indeed, it is necessary to listen carefully to what is being said so that the researcher can anticipate in which direction to take the interview next (Burgess, 2003).

Burgess (2003) suggests it is important to "share the culture" of the participant. The researcher may then require a knowledge of technical terms, and the capability to understand and interpret complex cultural meanings. The difficulty for researchers is understanding what questions to ask and the way in which to ask them. This is particularly important when interviewing in the field of animal research,

where, as the researcher, it is necessary first to understand policy that guides animal research (which was often referenced within the interviews), as well as understanding the primary roles of employees within facilities. For example, the role of the NACWO and NVS in the rehoming process was commonly referred to during interviews, so it was crucial to understand relevant acronyms in order to comprehend responses and ask appropriate follow-up questions. Levi-Strauss (1964) also posits the importance of appreciating such cultures, and suggests that researchers should assume the role of members of the social settings under study. This is of particular importance when understanding why participants may adopt certain positions in particular situations. For example, it was only after I had undertaken my first few interviews with staff at research facilities that I realised the complex reputational risks embedded in rehoming, and why for some staff, this meant rehoming would be a complex undertaking which could inadvertently threaten the facility. I had not previously recognised the human anxieties entangled in the work of animal research, something that only became clear once I was able to "put myself in the participant's shoes" (Myers and Smith, 2012, pg. 4).

I received ethical approval (ERGO reference number 32026) before sending participant recruitment emails. In total, 57 people were contacted for interview, and 28 accepted the invitation, giving a relatively high acceptance rate of 49.1%. This may be because people felt it was an interesting topic, especially for those facilities which had established comprehensive rehoming schemes. Interview participants were recruited partially through snowball sampling, drawing on the interviewees' own knowledge of people who had previously been involved in rehoming and its associated processes. Participants were also accessed through personal connections to the Animal Research Nexus team. The majority of scientific researchers were contacted after completing the questionnaire and providing their consent and details to participate in an interview at a later date. Comprehensive online research was also undertaken to gather contacts, useful mainly for accessing rehoming organisations. Internet searches were also valuable in retrieving media/press releases, in turn revealing organisations involved in the rehoming of laboratory animals.

Emails were sent to potential participants introducing the project, and inviting them to participate in an interview. A consent form (Appendix B) and participant information sheet (Appendix A) was provided in the email. The consent form was either signed in electronic form and then emailed back to me, or signed in person before commencing the interview. A reminder email was sent if no response was received to the original prompt.

28 stakeholder interviews were completed across three stakeholder groups. The first interview was treated as a pilot interview, and any questions that were poorly understood or unclear were adapted appropriately following the end of the interview and before commencing following interviews.

Although the schedule (Appendix D) was not modified to the same extent following the pilot interview, the schedule did continually undergo minor adaptions as participants raised new issues that I had not thought to address in previous interviews.

A table of those interviewed, and the roles they held, is included below (*Tab 1*). Researchers comprised numerous groups, including but not limited to: scientific researchers, NVSs, NIOs, NACWOs, and managers of facilities. Those working at rehoming organisations (which included animal rehoming charities, and wildlife sanctuaries) were also primarily managers. Those that had rehomed laboratory animals constituted members of the public, researchers, and animal technicians. Some (7) facility staff had rehomed laboratory animals themselves, and were consequently assigned to two stakeholder groups ('facility staff', and 'previously rehomed laboratory animal').

		Number of interviewees	Total
Role carried out by interviewee	Facility staff	17	35 (7 were assigned to multiple roles)
	Works in rehoming organisation	8	
	Previously rehomed laboratory animal	10	
Interview format	Face to face	15	22 (4 interviews were joint interviews)
	Skype	4	
	Word document completion	3	

Table 1 – Information regarding the role of the interviewees, and the format of the interview.

The interviews were semi structured, which allowed participants to expand on what they felt were the most important themes worthy of additional consideration (Longhurst, 2003). The interviews lasted between 30 minutes and two and a half hours. Most commonly, I travelled to the participant's location, which was often a university campus or a rehoming organisation. I also undertook four telephone interviews when it was difficult to travel to their location (distance and therefore journey time was excessive), or the participant stated that they would prefer this method of interviewing. Three participants answered the questions on a word document as they stated (due to confidentiality issues and the sensitive nature of the topic), that they would prefer to complete the interview this way. Offering choice disturbs traditional power structures embedded in interviewing, in which the interviewer ordinarily assumes control of the process (Holt, 2010). Technologically mediated interviews are also easier to re-arrange, and are more convenient for the participant.

The interviews were split into different sections to allow flexibility, whilst also ensuring coverage of all relevant sections. The interview guide facilitated the flow of the interview, and began with an enquiry into the background of the participant and the facility/rehoming organisation they represented. Much like the questionnaire, an easier line of questioning was employed at the start of the interview to ensure the participant felt comfortable and relaxed (Donalek, 2005). I asked questions which addressed the interviewees' experience of rehoming laboratory animals, the effects that rehoming had on staff and the wider facility, the barriers to rehoming, and the role of external bodies in the rehoming process. Finally, I included a section on general reflections, which allowed the participant to bring up important issues they felt I had left unaddressed. The guides were flexible, ensuring I could modify the questions to the participant and their role in rehoming. Background research was completed on the participant prior to commencing the interview, which allowed me to adjust the interview guide accordingly and contextualise the information they provided. For those who had already completed the questionnaire before being interviewed, a considerable amount of information was already known (including the role they had within the facility, which species were kept, whether they were currently engaged in rehoming, and, if so, which policies and processes were used to guide the process).

The conversations allowed the participant the opportunity to discuss what they felt were the key benefits, barriers, and motivations to undertaking and participating in rehoming. The questionnaire data was especially useful in the cases where the participant had already completed the questionnaire so the responses they had provided could be probed further. The interviews provided an opportunity to understand the key priorities of various stakeholders involved in the rehoming of laboratory animals, and how these might differ from others involved in the process. They were also helpful in understanding the often diverse ideals of rehoming even between the same stakeholder

groups. For example, some rehoming organisations were more extreme and used very emotive language to promote their views regarding the unacceptability of animal research, whereas others were careful not to disclose any details of the research facilities from which they had sourced animals for fear of damaging their relationship, which was commonly described as positive.

The interviews were audio recorded, and later transcribed in order to undertake analysis using the software Nvivo 12. Yet, qualitative methodologies are bound up in emotion, and the ways in which these complex emotions are divulged and shown in the written transcripts presents issues. Important details may be lost when converting from a recording to a word document (Silverman, 2016). This is perhaps more pertinent in the Skype and written transcripts, where the interpretation of the information disclosed by the participant will be restricted (Deakin and Wakefield, 2014). However, and where possible, I ensured that I indicated changes in tone, emphasis and pace to ensure levels of detail were not lost when I transcribed the interviews. I also transcribed my data personally, which allowed me to familiarise myself with the data. I ensured that I transcribed the interviews the day after I completed them (if possible), in order to recall relevant contextual detail with ease. I used pseudonyms so the participants were not reduced to codes or numbers (Braun and Clark, 2013). Animals were also provided with pseudonyms to give them an identity and remove human centricity.

After importing the completed transcripts into Nvivo, the software was used to code the textual data into themes to allow further analysis into specific topics and to understand the often diverse responses to the same question. Nvivo creates categories, and condenses data into measurable units of analysis, yet, as Cope (2010, pg. 445) acknowledges, the practice of coding qualitative data is a "frankly, messy" process, which involves a continuous re-reading, re-thinking, and becoming intimate with data. Codes were not stagnant, but deleted, merged and subject to change (Crang and Cook, 2007). There were complex interrelations between codes; they overlapped, connected, and (dis)agreed. Yet, as Dowling et al (2017, pg. 172) assert: "decentring the human means purposively celebrating rather than being troubled by data that does not fit into neat categories". After I experienced data saturation (Fusch and Ness, 2015), and each of my stakeholder groups were well represented, there was no need to undertake further interviews. The following section will outline the final method of data collection: ethnographies.

4.6 Incorporating ethnography

Ethnographies epitomise a more-than-human approach, and crucially endeavour to transcend the distinct methodological domains through which the social and natural sciences traditionally function (Locke, 2018). As previous methodologies have been criticised for their lack of integration of the non-

human animal into knowledge frameworks (Arluke, 1990), there are benefits to adopting a methodology which attempts to see the world through the eyes of the animal, as it can lead researchers to abandon their traditional anthropomorphic perspectives and move to encompass the animal.

Ethnography challenges existing traditional epistemological and ideological assumptions, which Hamilton and Taylor (2012) suggest makes it the perfect method for integrating the animal, and more generally extending research methods across species. This is because agency, beliefs and behaviour are emotive, affective and embodied, rather than purely cognitive (Law, 2004). As Hamilton and Taylor (2012) posit, we should include animals in our research as 'things', 'agents' or even 'co-workers'. However, as animals cannot talk or write about the feelings and emotions they may be experiencing, in order to fully appreciate the role of the animal, there is a need to interact intimately with the animals of study (Arluke, 1990).

A method typically used to understand the meaning of social interaction between cultures (Wolf, 2012), undertaking an ethnography allows for an understanding of insiders' worlds; instead of those participants may choose to portray or perform in interviews. Indeed, ethnographers study the intricate and sometimes even ignored micro politics of everyday and organisational life. Traditional research methods such as interviews do not accurately present the whole story, and the perspectives of all those, both human and non-human, involved. Research practice has increasingly realised the affective and attuned ways of "becoming with" (Despret, 2004) animals and conducting research 'with' and 'through' them, rather than purely 'on' them (Davies and Dwyer, 2007). Thus, ethnographies can represent a way to access intricacies and discover "unspeakable geographies" that may not be accessible through other means of research.

An ethnography methodology has not previously been employed to understand the rehoming of laboratory animals. However, ethnographies have been used to realise how care manifests and is demonstrated within the laboratory space, and particularly the role of animal technicians in mediating, enforcing and embodying care (Greenhough and Roe, 2018). Using ethnographic work with scientists and policy-makers, Davies (2012) has explored emerging strategies for assembling animal welfare in the face of the multitude, and the complex ways in which GM animals represent a challenge to building cultures of care and in assembling enriched environments. Phillips (1993) too employed ethnographic methods to explore the administration of pain relief to animals in the research laboratory, finding administration was sometimes "haphazard" (pg. 61). Such studies allow an investigation into the actions and performances undertaken in these environments, rather than that which is reported by participants.

In this research, as part of the interview process, I was commonly taken for a tour around the laboratory. This meant I could gain understanding of the intricate 'body-to-body' (Greenhough and Roe, 2018) practices that occurred inside the facility. I took six tours in total, importantly in a variety of facilities; both public and private, with differing types of research undertaken, and species kept, at each one. This was significant because it allowed for the observation of a diversity of practices and modes of operating.

Undertaking fieldwork in the workplace of participants permitted the questioning of conventional images and allowed me the opportunity to look behind supposedly socially and culturally acceptable presentations of environments, people and animals (Becker, 1967). As Leigh Star (2010) proposes, "dwelling" with the inhabitants and objects of what she terms "residual spaces" (pg. 614) is a methodological necessity. Undertaking an ethnography thus allowed for analysis that reveals insight at a cultural level, useful in exploring how understandings of what it means to care might manifest differently within individual facilities. As more-than-human thinking advocates, it is also of value to interact and co-produce knowledge with animals of study, as 'becoming' is always 'becoming with' (Haraway, 2008; Kirksey and Helmreich, 2010).

I was also able to observe rehomed animals in the home environment while I was completing interviews with their owners. This introduced the possibility of integrating animal agency and inter-species communication to the research (Haraway, 2008). I witnessed first-hand the animal's behaviour, and recorded the actions, behaviours and interactional exchanges with other species, including their owners. This allowed me to observe if the animals appeared to be 'happy' in the laboratory, or well adjusted in their new home environment. As Mancini et al (2012) propose, body language, which animals possess even if they cannot verbally communicate, is important to acknowledge and bring into the construction of knowledge frameworks. Maurstad et al (2013) too suggest attention should be paid to making sense of bodily kinetics in terms of the sensations and emotions they portray. Such attunement to animal bodily characteristics and behaviour also allows the recognition of different personalities (Maurstad et al, 2013) and unveils the fine nuances in interspecies relating.

Issues with such a methodology include the difficulty of interpreting animal behaviour; I could only attempt to infer mental states based upon animal movement and bodily positioning. This likely took an anthropomorphised angle, as humans tend to interpret animal actions through their own way of viewing and experiencing the world (Fox, 2006). Whilst Haraway (2003) reflects on the challenges of understanding animals through the human, she acknowledges that such an approach is more useful than ignoring animal communication, or simply passing it off as instinct. Merskin (2011) reflects on

the importance of the researcher in taking account of the role of the animal other, and proposes that researchers must sympathetically observe the animal under natural conditions. There was consequently a benefit to observing and interacting with animals across a range of environments; it is in these spaces that it is possible to understand the routine and seemingly mundane performance of practice, and also the potentially troubling or unexpected interruptions to these routines (Buller, 2015).

Adopting an ethnography methodology also importantly enabled me to immerse myself in the settings in which humans come into contact with laboratory animals, and to observe human behaviour toward the animals in their care in an organic setting. I was able to experience how care cultures were fostered within individual research facilities, and whether this could influence rehoming. Indeed, ethnographic methods are very valuable for developing an understanding of the culture of the group being observed (Rodgers and Anusas, 2008). Employing ethnographic methods allows for the attunement to "practice, affect, skill, habit and multisensory knowledges" not adequately captured through traditional language (Hodgetts and Lorimer, 2020, pg. 287). In effect, whilst the interviews allowed me to understand human perspectives, an ethnography framework facilitated an understanding of how the non-human shapes what humans do, as opposed to that which the human may report. There is consequently a shift from accounts of how people choose to represent themselves, to how their worlds are formed through continual embodied processes of engaging, sensing and interaction with animal others (Greenhough and Roe, 2011).

Whilst conducting observations, it was crucial that the interactions be open, honest and constructive (Reeves et al, 2013). Randall et al (2007) suggest that it is important that the researcher presents themselves as reasonable, courteous and importantly, non-threatening. This involves an active engagement with the research subject(s). As the observation was non-participatory, my role was mainly to "follow the events" (Randall et al, 2007) (and also to physically 'follow the researcher' as the tour of the facility proceeded).

I recorded observations of how the animals behaved, and how people interacted with animals, by taking notes in a research diary. Randall et al (2007) explains that these more basic technologies (using a pen and paper) hold value, and allow the collection of raw and spontaneous primary data. It also allowed a more flexible method of data collection; for example, I frequently took brief notes whilst the observation and interviews were ongoing. The process of writing field notes is a distinctive feature of ethnographic studies. These field notes are useful for documenting stories, descriptions, events and interpretations (Reeves et al, 2013), and therefore act as a record and represent unique and personal data points (Rodgers and Anusas, 2008). In order to analyse the notes taken, they were

coded into themes. Unlike the interview data, which I coded using the software Nvivo, I began by reading through my descriptive field notes, and later noted key phrases, words, or concepts to engage with emerging patterns. Although the ethnographic work did not produce tangible data, this work informed the ways in which I interpreted my findings and allowed me to practise reflexivity.

Despite the advantages of undertaking ethnographies, including the detailed accounts they can provide of organic multispecies interactions, such methods hold inherent challenges which may affect the validity of the data they collect. For example, although I was able to immerse myself in the natural setting of the laboratory and as such observe natural exchanges and interactions with other humans, animals, objects and infrastructures, I was still being taken on a tour, the nature of which may harbour inherently performative aspects. Most of the participants had planned this tour in advance, and many also had experience in taking either the public, policymakers, home office inspectors, newly recruited colleagues, or animal welfare organisations, around their facility as part of a move to be more open and transparent (Jarrett, 2016). Thus, it was possible that the tour was part of a performance, and that staff members only showed me parts of the facility that they knew were, for example, less socio-ethically controversial (Oswald et al, 2014), cleaner, or spaces or procedures that were quite simply less likely to expose unchecked or uncontrolled behaviours or accidents. Indeed, the 'Hawthorne effect" relates to the process by which participants modify their behaviour when they are aware that they are being watched, observed or feel judged (Reeves et al, 2013).

Reeves et al (2013) suggest there are additional ethical issues which warrant consideration when undertaking ethnographies, which include the challenges of gaining fully informed consent from all those observed. For example, the behaviour, actions and practices of other staff members who came briefly into the facility (and to whom I was often introduced during the tour), such as animal technicians, were included in the research (their behaviour was also noted in terms of how they interacted with other people and animals). I did not have the full ethical consent of these individuals to participate in the research. However, practically speaking, to do so would have been difficult, especially given the fact these employees were often working at the time so asking them to sign a consent form would have been both physically challenging, and may have irritated the member of staff.

Finally, there may have been issues relating to the time spent in the facilities that affects the validity of the research and the data collected. The tours typically lasted between 20 minutes – 1 hour, which meant that I was not able to immerse myself in the culture for an extended period of time, which some note as a necessary and important component of undertaking ethnographies (O'Reilly, 2012). Indeed, many ethnographies involve sustained, long-term immersion in the space in which the

research is being conducted (Gorman, 2017; Holland, 2018). Relating back to discussing the performative aspects of such laboratory tours, it is possible that the short nature of these tours meant that the data I collected was not as accurate as it might have been had I spent a prolonged period in the laboratory and been able to distinguish between routine and unusual practices.

To summarise, ethnographic work represents the main methodology adopted by the majority of research in more-than-human studies (Pitt, 2015; Pacini-Ketchabaw et al, 2016; Locke, 2018). Spending time with the animals in both the laboratory and in the home space allowed me to challenge the anthropocentric gaze and permitted me to interact, touch, play and 'become with' the rehomed animals. However, a PhD project inevitably has time constraints, and I was therefore limited in how much time I could devote to the ethnographic components of this research. Although spending more time in the laboratory and in the homes of recently rehomed laboratory animals would have enabled me to know the animals on a deeper level, the maximum amount of time I could dedicate to individual laboratories and homes was two hours per interviewee. The result is that the majority of this research is based upon interviews with humans, which, although very useful, may provide a more human-centered and anthropomorphised view of rehoming. However, the ethnographic component of the research, whilst limited, provided me with a clear understanding of the context and position of animals and the humans they interact with in that space. In the following section, I move to explore in more detail, and reflect on, the ethical issues embedded in my research.

4.7 Integrating the ethical

Echoing Puig de la Bellacasa (2011), and drawing on Latour's (2004) concept of 'matters of concern', we, as researchers, should attend to 'matters of care'. Entangled in this is an awareness of, and openness to, the ethical-political engagements that arise in the course of exploring the more-than-human; which includes being mindful that our objects of study can also be vulnerable and deserve our care (de la Bellacasa, 2011).

Adopting a more-than-human approach calls for a consideration of moral issues that may underlie research, and a critical reflection of ethical issues embedded in attempts to "bring the animal in". This is particularly relevant when animals are 'brought in' from the sensitive and ethically contested space of animal research. Ethical issues are present in all forms of research (Orb et al, 2001), but when exploring practices in animal research specifically, the need to consider the welfare of both people and animals is paramount. Although it can be difficult to anticipate the effects of interviews on the respondent (Streubert and Carpenter, 1999), researchers should accept the moral obligation of anticipating all possible outcomes, whether these be positive or negative (Orb et al, 2001; Corbin and

Morse, 2003). In this research, discussing failed laboratory animal rehoming attempts, or the past life of a recently rehomed laboratory animal with their new owner, may be emotionally challenging for interviewees and may trigger psychologically painful experiences.

Other issues arise when undertaking interviews in a sensitive topic area, which concern the validity and accuracy of the data collected (Winchester, 1996). Interviewees may not be comfortable disclosing all details, and thus enabling a comprehensive investigation of laboratory animal rehoming. This discomfort was demonstrated by some participants who opted to undertake an interview using written script instead of meeting face-to-face. This may suggest that there are worries about what might be disclosed when answers cannot be controlled and well considered. Bowden and Galindo-Gonzalez (2015) suggests that participants may feel more comfortable when responding to questions in the comfort of their own home and in their own time. Some interviews (four) were also carried out over Skype. Although technologically mediated interviews may limit the types of interactions possible (Deakin and Wakefield, 2014; Bowden and Galindo-Gonzalez, 2015), this method of data collection was justified as it enabled access to a wider range of participants, allowing me to gather additional valuable insights. It should also be acknowledged that researchers have repeatedly argued that telephone and online mediums of conducting interviews still allow for the collection of rich and rigorous data (Janghorban et al, 2014; Hershberger and Kavanaugh, 2017).

There were also practical issues concerning undertaking research in a closed topic area. Certain information could not be disclosed during interviews due to the signing of confidentiality agreements, particularly regarding the research the animal had been involved in prior to rehoming. However, undertaking ethically sound research means participants' wishes should be honoured, and trust and respect integral to the process. This includes accepting the information the interviewee chooses to share, and, equally, hide. In fact, interviewing in sensitive topic areas can even provide benefits to the participant, including offering self-validation, contributing to a sense of purpose, promoting healing, and providing a voice to those who may otherwise feel disenfranchised (such as the animal technicians interviewed) (Hutchinson et al, 1994).

Further issues may arise with the validity of qualitative research; what is recounted in interviews cannot be taken as fact, especially when describing past experiences, which may be remembered inaccurately, or intentionally be reported differently. Interviews effectively encompass elements of storytelling (Diefenbach, 2009), and undertaking qualitative research specifically represents "emotion work" (Dickson-Swift et al, 2009). As such, researchers should experience and feel their work both intellectually, but also emotionally and affectually (Gilbert, 2000). It is an ethical imperative to understand and appreciate the different ways in which a participant might recall their individual

stories and memories, stories are often partial and incomplete, always being told and re-told (Mazzei, 2013). While this may reduce the validity of the research, it also demonstrates what participants feel is the most appropriate and important information to share, helping to divulge their main priorities and reveal the potentially significant ways in which they choose to be viewed and present themselves (Baxter and Eyles, 1996).

It is also vital to abandon the idea of understanding the activities of subjects objectively. It is necessary to be reflective and acknowledge feelings and emotion as part of the research process. Thus, it is important to view the interview not as an entirely objective and detached method of data collection, but instead to understand it as performed (Ferrando, 2012). Within us there are internalised norms and cultural scripts which dictate our reasoning and social views on matters, and the interviewer represents an active part of this social interaction (Diefenbach, 2009). Good interviewing involves being aware of how emotions, embodiment and performance may lead an interview in a particular direction. The framing and performance of an interview, which the researcher plays a large role in dictating, helps to determine interview content (Ezzy, 2010). Subtle differences in tone, speed of questioning or intonation may lead the participant to answer in a particular way (Diefenbach, 2009). For example, once certain themes had arisen within the research, it was possible that I would unintentionally ask questions and look for answers that supported, and contributed to, these themes (Chenail, 2011; Mazzei, 2013). Once I was aware that dogs and cats were more likely to be considered for rehoming, I may have inadvertently framed questions, or searched for answers, in a particular way in line with previous findings. As I explore below, being aware and reflecting on these issues and limitations is a crucial component of the research process.

4.2 Final thoughts: examining positionality and being reflective

The final section of this chapter will address an issue proposed by those advocating for a more-than-human methodology, which insists on the need to engage and reflect critically with the research undertaken by examining researcher positionality. The field notes were useful not only for recording human and animal behaviours and interactions within different settings (the laboratory, rehoming organisation, and home), but also held value when being reflective and examining my positionality during the data collection stage of the research. Sultana (2007) suggests being reflective is even more imperative in the context of inequalities (here, that between the human and the animal). In fact, when conducting ethnographies specifically, considering our positionality forms a crucial part of the research process (Chiseri-Strater, 1996). In effect, reflection demands an attempt to understand fully "the researcher, the researched and the research context" (Rose, 1997), and is an integral step if we

are to develop deeper understandings of the data we collect. As Dickson-Swift et al (2009) assert, research in sensitive areas has the potential to affect all of those involved, including the researcher.

As an ethnographic approach advocates, it is important to write "with", rather than simply "about" (Sultana, 2007). This requires a complex and reflective line of thinking which is attentive to the ways in which power, knowledge and context might affect the way the data is collected, and thus the data itself. Reflexivity encompasses reflection on the self, process and representation. In this research, my life experiences, biography and multifaceted identity are important aspects to consider within the research process, in terms of how they might have affected the way questions were asked, responses were given, and results analysed (Hopkins, 2007). An exploration of positionality also offers benefits to the research being undertaken - a reflective research process renders findings gathered open to more complex understandings and framings (Sultana, 2007). Thinking about our own feelings, actions and assumptions is invaluable, and allows us to "do better research". Although our beliefs shape the research we undertake (Sultana, 2007), and knowledges are always produced in the context of our own subjectivities, we should be open to being repositioned, as reflexivity can then inform us of how to know more, and understand better (Salzman, 2002).

Being reflective in research does not only enhance the depth and understanding of the data collected, but also provides a way in which to re-think our relationships with animals. Undertaking reflexivity forms part of what it means to undertake more-than-human qualitative research, which advocates for the need to critically examine traditional power relations, and bring animal agency into the equation when considering human behaviour. Merskin (2011) reflects on the difficulties of doing this when conducting multispecies research, and suggests that examining positionality in this context is complicated by species difference. Nevertheless, she acknowledges the importance of doing so, and proposes that although animals may not be able to communicate through language, they are social and intelligent beings (Merskin, 2011) with whom it is possible to communicate with in a way that enables the production of a shared understanding (Holland, 2018). Thus, in this research, I conceptualise animals as being in a co-constitutive relationship with humans. Within this, laboratory animals' relationship with those responsible for their care is considered, and power imbalances are counteracted by the undertaking of an ethnography, and the act of listening to complex human portrayals of animal individuality and mutually formed relationships within the interviews.

A constant reflection on how individual beliefs may impact the research means we can learn from experiences and address them differently in the future. I ensured that I documented my thoughts and

feelings whilst in different spaces, including laboratory[38], rehoming organisations, and the home environment in a research diary. This diary included some of the events, stories and actions observed, but also importantly how these made me think, feel and reflect. Not all data comes from carefully planned and conducted interviews, questionnaires and ethnographies. Some particularly rich data comes from examining our own experiences, a form of "turning back onto oneself" (Steier, 1995). Such "reflexivity" involves being aware of the representation, recognition and placement of self when undertaking research (Reeves et al, 2013). Mortari (2015) suggests that we should reflect not only on practical research aspects (including methodological shortcomings as discussed earlier), but also psychological and emotional experiences which work to construct meaning behind practices. Doing so renders transparent the underlying politics of constructions of self in research.

For example, upon completion of my first two interviews, I found that there were challenges regarding explaining my background in the social sciences to participants, and outlining what a social scientific perspective could offer to understanding the practice of laboratory animal rehoming. After reflecting on these difficulties, I developed a template introduction to myself and my research project which developed from the confusions that arose during my initial interviews. This consisted of outlining the importance of social science in answering questions regarding laboratory animal rehoming (including in accounting for animal agency, and in understanding how animals may both facilitate and jeopardise rehoming attempts), as well as explaining in more detail my personal background and education, specifically my undergraduate degree in Human Geography.

Reflexivity also represents an ethical imperative; reflecting on experience enables the researcher to identify potential unanticipated situations and deal with these in an ethically appropriate manner (Mortari, 2015). It is a way to place the researcher, and the research, under scrutiny, and appreciate ethical issues that permeate the study, but also, and perhaps more challengingly, those that may arise in the future (McGraw et al, 2000). Although rare, I encountered some unanticipated situations whilst undertaking my ethnographies and interviews. Whilst taking a tour of one facility, the researcher guiding me spoke of how to euthanise tortoises in a very matter of fact way, and the practical difficulties of doing so given the tortoises in question could protect themselves by bringing their head into their shell. I was not expecting the rationality in which he spoke, and so had to negotiate and monitor my shock and sadness so as not to make him feel uncomfortable.

Similarly, I also encountered challenging, and perhaps even awkward, scenarios where participants could not disclose certain information regarding the research in which animals had been involved prior to being rehomed. It was common that those working in rehoming organisations had signed

[38] I reflect on my feelings as I entered the research laboratory for the first time in the following Animal Research Nexus blog: https://animalresearchnexus.org/index.php/blogs/stepping-culture-care

confidentiality agreements with the research facility regarding the animal's past life. The first time this happened, I could see that it made the participant uncomfortable, as they had wanted to be helpful and answer my questions. As a result, before commencing later interviews I explained to participants that if they were uncomfortable, or simply unable to answer certain questions, then this was perfectly acceptable and that we would move on to another topic. This was potentially compounded by issues relating to the space in which the interviews were conducted; Harvey (2010) outlines that when undertaking interviews at the participant's place of work (I commonly interviewed staff at their facilities or rehoming organisations), interviewees may find it difficult to disclose confidential information or offer further time, for fear of colleagues overhearing them or believing they should be performing other roles.

The researcher is not a disembodied presence, removed from the research they undertake. Being reflective also involves an examination of how positionality may unintentionally bias the data collected. It requires self-reflection, and a consideration of the ways in which my background and moral perspectives may affect the data I collect (Diefenbach, 2009). My pre-existing stance on animal research (one which is accepting when animal suffering is limited, but also not entirely comfortable with the practice) may have unintentionally influenced my lines of questioning. Introspective emotional self-awareness ensures qualitative researchers can be more attentive, can listen more openly to participant stories, and feel more deeply participant experiences (Seale, 2004; Ezzy, 2010).

For example, I found it emotionally challenging to enter the laboratory for the first time. I had never previously encountered that space, so was unsure if I would be able to detect animal suffering, and was worried about how that might make me feel. However, after reflecting on such tours and how they made me feel, think and experience the laboratory and animals in a different way, my perception had changed to one more open minded, and I began to appreciate, in line with academic research (Holmberg, 2011; Davies, 2012; Greenhough and Roe, 2018) that people working in laboratories do in fact care deeply for the animals for which they are responsible. Indeed, I frequently felt as though I was being taken around 'the participants' facility. Interviewees even spoke fondly of "their" animals. I often detected a sense of pride when participants discussed the biomedical research undertaken at their institution and the impacts it had in terms of saving human lives and improving both human and animal wellbeing. Thus, it felt as though the facility, and the work performed there, formed a crucial part of the participant's sense of belonging. It is therefore crucial when undertaking research to avoid categorisation and closure (Davies and Dwyer, 2007), and even unintentionally perpetuate the polarised and stigmatised discourses that have historically circulated around animal research.

For example, I noted that some of those I interviewed initially provided quite guarded responses in the interviews, and I felt this may have been as a result of the fact that I was studying rehoming specifically. I believe that some participants felt that I had concerns about the use of animals in scientific experiments, and that instead I wanted to see the animals placed in a home. This view may have been reinforced by my being a young woman, as adolescent women constitute the majority of those involved in animal activism (Gaarder, 2011). It was consequently important that I portrayed myself as open minded to the participants, so they in turn felt they could share their opinions with me.

Another aspect on which I reflected in my research diary was the difficulty of interviewing elites. Harvey (2010) defines elites as 'directors' and 'managers', which constitute the positions of many of those I interviewed. It was necessary for me to interview these elites to explore their unique experiences as 'insiders' (Moyser, 2006, p. 85). These professionals were also more likely to be those making important decisions on whether to rehome, and how to do it. However, Harvey (2010) discusses that elite members of an organisation are likely to represent the position of the firm rather than their own individual viewpoint, which may represent issues regarding the validity of the data collected. There were also more demands on their time (Moyser, 2006); twice I had to delay commencing an interview as the participant was in a meeting or otherwise occupied. Compounding these issues, I also felt very aware of my younger age and less advanced career stage whilst conducting the interviews. Thus, I found there was a difficult balance to be struck between seeming professional, yet also approachable so participants felt comfortable sharing their views with me.

Tying into this were issues with the sometimes complex nature of the experimental research described to me during both the ethnographies and the interviews. For example, when discussing why certain genetically modified strains of mice could not be rehomed, I was aware that the participants were unsure how much I understood of the biology behind mutations and the effects they could have on the health of the animal. Before I began to explain my background in the social sciences (specifically my Human Geography degree), some participants speculated that I had undertaken a degree in Biology. It was therefore challenging to navigate complex biological and medical ideas and terminology described to me in the interviews, and I was aware that some participants felt slightly uncomfortable whilst trying to establish the degree of scientific knowledge I possessed.

Bourke (2014) discusses the difficulties with being both an insider and an outsider when undertaking qualitative research. Indeed, although there is a sense of shared belonging when interviewing as an 'insider', 'outsiders' do not belong to the group they are interviewing and can therefore be more objective (Harvey, 2010). I may have been considered an insider in that my research interests aligned

with the lived experiences of the participants, as well as their personal choices to enter animal research as a profession (Bourke, 2014), yet, I simultaneously compromised an outsider in that I am young, do not have a background in biological sciences and do not actively work in the field of animal research. These issues may have been compounded by the perception that I did not agree with animal research given my interest in rehoming.

It is crucial to note here that positionality is dynamic; it evolves and is in a constant state of flux during the course of data collection (Mikecz, 2012). For example, and as I have explained, although I, like many others, was initially hesitant to accept research involving animals, my positionality on the matter shifted somewhat after interviewing those who work in the field. In these intricate exchanges, I saw love, hope and care reflected in their personal accounts and stories of animals they loved, named, and with whom they established friendships. Researcher positionality thus undergoes transformation over time; it is continually shaped and re-shaped based on interactions and experiences with others, both human and non-human.

Some have critiqued the self-reflective turn in Geography, proposing it forms part of geography's reflective self-obsession (Peach, 2002), and supports the view of a privileged, self-indulgent focus on the self (Kobayashi, 2003). Nevertheless, undertaking qualitative fieldwork and discussing the thoughts, perspectives and experiences of laboratory animal rehoming with those who have chosen to enter that profession is an immensely personal experience – and being critical and reflective of the topics and issues raised in the research is valuable in many respects. This includes granting agency to animals and considering power hierarchies, accounting for vital ethical parameters in the research, situating the investigation and the knowledge gained, and finally reflecting critically on how my personal experiences, politics and beliefs may have shaped the research (Sultana, 2007). Accurate and rich enquiry into the lives of animals inherently requires some level of reflection. The hierarchical hegemony must be dismantled, and the critical consciousness of the participants (both human and non-human), and myself as a researcher, must be thoughtfully examined. It is vital to think through and with animals (Hovorka, 2015), and this research will help to demonstrate the complex ways in which our lives are enmeshed and interconnected with the animal other.

4.3 Conclusion

In conclusion, the following analysis of laboratory animal rehoming is based on empirical data derived from a questionnaire (n=41 facilities), interviews (n=28), and ethnographies undertaken at research facilities, rehoming organisations, and in the households of newly rehomed laboratory animals. Together, these materials provide a rich and comprehensive image of actors' perspectives and

experiences regarding rehoming practice in the UK. The collection of less structured qualitative data contributes to what Reeves et al (2013) coin a "toolbox of methods" (pg. 1367), which includes observational data and in-depth interviews. Drawing also on the questionnaire, I ensured that detailed and rich data was collected of the places, people and animals being studied, as well as ensuring methodological validity and rigour. Specifically, by triangulating these methods, it was possible to provide context to the numbers of animals rehomed from UK facilities (thus answering the call for a more robust and national context (Clark, 2014)), as well as to understand the primary motivations for taking part in such a practice and the steps taken to ensure success. Interviews allowed an interrogation of the main themes divulged from the questionnaire, and integrating ethnographic methods facilitated a richer understanding of the process from the animals' perspective, thus allowing me to answer calls in more-than-human literature to "bring the animal in". This chapter has discussed, justified and explained these methods, as well as recognising their limitations. By bringing animals into the conversation, this thesis rejuvenates and revitalises traditional methodological approaches.

In doing so, this research is well placed to offer up novel narratives and explorations which both challenge, and work with, dominant, scientific understandings of laboratory animal rehoming based upon quantitative questionnaires with new owners (DiGangi et al, 2006) and measures of animal welfare in accordance with biological indicators such as increased cortisol levels (Döring et al, 2017). This chapter thus furthers methodological debates in cultural geography, and enables a thorough investigation of current UK laboratory animal rehoming practice.

The following chapter, the first empirical chapter, reports on the questionnaire findings and provides a context as to the number and species of laboratory animals rehomed from UK facilities, the main processes and practices entailed in their rehoming, and associated opportunities and barriers posed by rehoming.

5. Chapter 4 – Context: an exploration of the policies and practices entailed in the rehoming of laboratory animals

5.1 Introduction

Despite the charted benefits of rehoming laboratory animals to research facilities (LASA, 2002; Wolfensohn, 2010), academic study of the topic, especially in a national context, is underdeveloped. In order to aid staff morale (Prescott et al, 2004), improve animal welfare (Döring et al, 2017) and enhance collaborative relations between the scientific community and other organisations (Carbone et al, 2003), further research should explore facility-level rehoming perspectives and processes. Informed by the challenges recognised by UK facilities, such guidance should support facilities if they choose to rehome their animals by providing advice regarding best practice.

Specifically, this chapter will address a widely acknowledged gap in literature which calls for a more concrete understanding of the numbers and species rehomed across UK institutions (Carbone et al, 2003; Clark, 2015)[39]. Understanding this is integral to enhanced awareness of rehoming in terms of the ethical and moral space that is navigated, the regulation that is followed, and the role of differing stakeholders in the process. This chapter will also provide an assessment of the practical and legal issues identified by facilities when considering rehoming. The themes raised in this chapter will be supplemented in later empirical chapters of the thesis, which draw on the data collected from the interviews and ethnographies. This approach of triangulating methods, whereby questionnaire findings are enriched by the in-depth data collected from interviews and ethnographies, allows for the collection of both contextual yet detailed data (Winchester, 1996; Olsen, 2004).

Most of the existing literature on rehoming bases its findings upon specific case studies, and focuses predominantly on traditional companion species, particularly terrestrial mammals (such as dogs and cats). Although it is speculated that these constitute the main proportion of animals rehomed (Clark, 2014), it is important that other species are not overlooked. As Philo and Wilbert (2000) advocate, and in keeping with a more-than-human framework, insects, fish and small rodents should be taken seriously. In a move to bring *all* 'animals in', it is important to understand the diversity of animal life and lives (Gibbs, 2019), and explore the rehoming of laboratory rodents, fish and amphibians that research finds are rehomed informally to members of staff (Bayne, 2002). As McAndrew and Helms-

[39] This chapter has been published in the journal PloS One, as "A semi-structured questionnaire survey of laboratory animal rehoming practice across 41 UK animal research facilities" (Skidmore and Roe, 2020).

Tillery (2016) acknowledge, rehoming, although in smaller numbers, occurs across many species, including rabbits, rats, guinea pigs and even mice. In fact, the "small size, easy and affordable maintenance and short longevity" of these animals may reduce the level of commitment needed from potential adopters (Franco and Olsson, 2016, p. 197). Despite this, there has been little work undertaken focusing specifically on the rehoming of rodents, fish and agricultural animals (all of which are commonly used in animal research), and consequently there is a need to expand understandings of rehoming frequency of these species, as well as the channels by which this occurs.

By providing the findings of a semi-structured questionnaire, distributed nationally, a more rounded and complete analysis of the novel social, ethical and regulatory issues posed by rehoming, and a deeper examination into the kinds of relations people have with laboratory animals both inside and outside of the laboratory space, is facilitated. This involves assessing the views of multiple facilities, and going beyond existing literature which adopts a case study analysis of particular rehoming schemes, with particular species, at specific facilities (Carbone et al, 2003; DiGangi et al, 2006; Harms and Stoskopf, 2007; Döring et al, 2017). Finally, although research has identified motivations to rehome and explored why facilities might not be engaging in the practice (Kerwin, 2006), no work has quantified which motivations and barriers are considered to be the most important by the research facilities themselves. This is necessary to adapt existing policy accordingly, and support facilities if they choose to rehome their animals in the future. As well as providing an understanding of facility-level rehoming perspectives, the format of the questionnaire also allows for a comparison of views between those facilities currently engaging in rehoming, and those not doing so. It is through providing this vital context, that the more conceptual findings of later chapters will be appropriately situated.

The key research questions of this chapter are:

- How many UK facilities are known to be rehoming?
- How many animals, and what species, are being rehomed?
- What are the motivations for rehoming, and the barriers for those not currently participating in the practice?
- What range of activities does the rehoming process typically involve?

This chapter will begin by exploring how many facilities are engaging in rehoming, which species are most commonly rehomed, and which species are typically rehomed in greater numbers. In terms of the rehoming process, I outline how animals are prepared for rehoming, how the right home is identified, and reflect on the main difficulties encountered and opportunities represented by rehoming from a facility-wide perspective. The chapter will conclude by exploring the factors preventing facilities from engaging in rehoming. The overall aim of this chapter, therefore, is to provide a background overview to current UK laboratory animal rehoming practice.

5.2 Context

Participants represented a variety of roles, including but not limited to: Establishment Licence Holders (ELHs), Named Veterinary Surgeons (NVSs), AWERB chairs, Named Animal Care and Welfare Officers (NACWOs), and Named Information Officers (NIOs). In terms of the species kept at facilities, questionnaire results reflect accurately the wider landscape of UK research institutions (Home Office, 2015b; 2016; 2017). The majority of facilities completing the questionnaire had mice (36 facilities), rats (29 facilities), and fish (23 facilities). A small number of facilities kept dogs (6 facilities), primates (4 facilities), horses (4 facilities) and cats (2 facilities). The types of research undertaken at the facilities also varied, including but not limited to; conservation, human medicine development, teaching, and animal behaviour, welfare and nutrition. Both public and private facilities completed the questionnaire. This is useful in providing a diversity of perspectives, and more accurately representing the sample population (Home Office 2015b; 2016; 2017).

5.3 Examining the number of facilities participating in rehoming

As there are ~160 UK animal research facilities, the 19 facilities that the survey found to be rehoming constitutes approximately 12% of the total number of UK research establishments *(Fig 2).* It is therefore possible to say with certainty that at least 11.9% of UK facilities are rehoming, and that at least 13.8% have not engaged in the practice from the 2015-2017 period, but scaling up to give speculative figures for the whole sector is not possible. Levels of uptake of rehoming suggest it is considered an option in UK research facilities. This is also demonstrated by only one facility of the 41 facilities (which kept solely fish) suggesting that they were "*unaware that rehoming was possible*" from the closed answer questions.

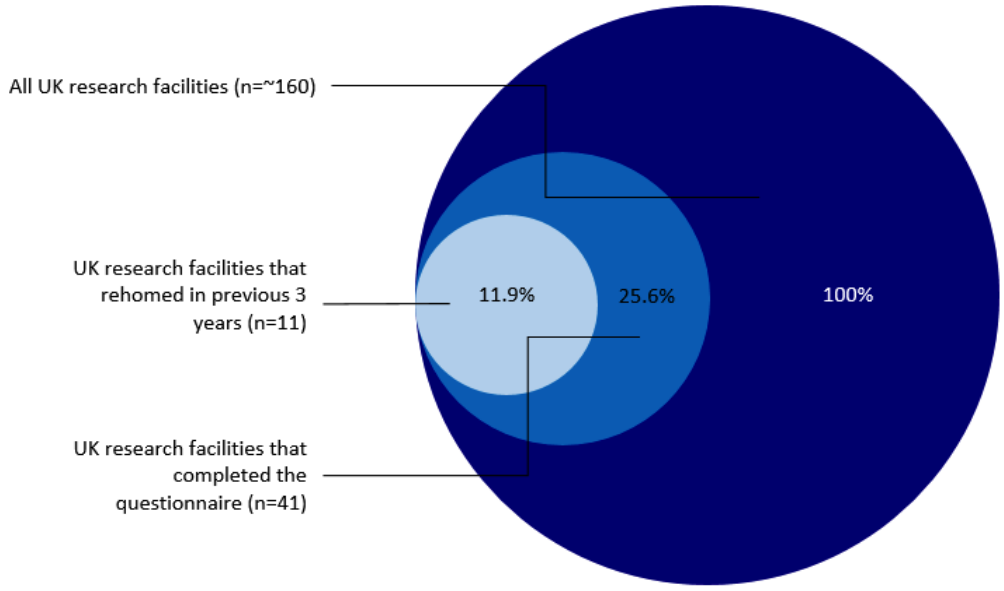

Figure 2 - UK research facilities that have rehomed in 2015-2017 period and completed the questionnaire as a percentage of all UK research facilities.

The questionnaire suggests that facilities are aware of, and, from the relatively high response rate to the questionnaire, have at least some interest in, rehoming. For example, the manager of one facility explained that they were not currently rehoming, but would "*remain open minded*" if the opportunity arose in the future. Another NIO at a facility housing fish and rodents explained that they would "*bring up [rehoming] at their next AWERB meeting*". This may be directly as a result of the publication of regulatory guidance on rehoming, or through the stories told by staff working at facilities. As later chapters will show, these stories provide fruitful ways in which to disperse affects (whether these be hope, love, compassion, or judgement, fear and secrecy), and, through their re-telling, can shape and reshape atmospheres in animal research.

5.4 Exploring the numbers and species rehomed

	Numbers of animals kept (first time use in procedure and bred but not used) 2015-2017 across all UK facilities	Numbers of animals rehomed, amongst facilities completing the questionnaire (n=41 of the ~160 UK facilities) (2015-2017)
Cats	448	171
Dogs other than beagles	447	71
Horses	1406	69
Gerbils	943	19
Cattle	10580	64
Beagles	10456	44
Hamsters	4742	16
Ferrets	1746	4
Amphibians	14706	31
Fish	1266584	1277
Birds	495889	383
Rabbits	41080	18
Pigs	17211	5
Guinea pigs	83886	18
Rats	1317886	103
Sheep	141941	7
Mice	7912669	22
Goats	726	0
Primates	8196	0
Quail	37	0

Table 2 *– A comparison of numbers of animals kept (using Home Office statistics) from 2015-2017, and numbers known to be rehomed (from 41 facilities that completed the survey). The colour coding helps to show which animal groups are kept in higher numbers within facilities, and which are rehomed in higher numbers. Higher numbers are represented in more saturated colours.*

Numbers rehomed across the 19 facilities from the years 2015-2017 are very low: just 2322 animals were rehomed *(Tab 2).* Both consideration for rehoming, and the numbers rehomed, appear to depend heavily upon the species in question. Those species kept in smaller numbers, such as cats and dogs, are more likely to be considered (goats and quail provide notable exceptions). This may relate to the enhanced ability to develop intimate relations with animals kept in fewer numbers in facilities (Bayne, 2002), as opposed to those species who may otherwise be grouped collectively as 'a mass'. Mice, for example, were kept in large numbers (7,912,669), but just 22 are known to be rehomed between 2015-2017. Buller (2013) suggests that when animals are housed in large numbers, individual animals are incorporated into a functional collective of normative material life.

The large numbers kept did not only result in symbolic difficulty in viewing these animals as potential companions (Birke et al, 2007), but also created practical difficulties when considering rehoming; participants remarked that finding homes for all the rats and mice kept in facilities would be logistically impossible. One participant, at a facility keeping solely small rodents (primarily rats and mice), suggested there was a "*lack of demand for such a rehoming*". Further, another participant representing a facility housing rodents, explained: "*we have never been approached to re-home any of our rodents*". These imply a belief that it is not a facility's responsibility to take the initiative to rehome.

Indeed, although 94.15% of species kept in laboratories are rodents, they make up under a fifth (19.14%) of all animals known to be rehomed between 2015-2017. Conversely, birds, cats, dogs, horses, amphibians and agricultural animals constitute 80.86% of total species rehomed, despite making up just 5.84% of those kept (*see Tab 2*).[40] There thus exists a clear preference for the rehoming of some species over others, implying that the nexus of moral concern extends to some species, and may leave others either intentionally or subconsciously excluded.

5.4.1 Retirement of laboratory primates

The rehoming of laboratory primates specifically has received the most academic attention, with a cluster of articles devoted to the "retirement" of such species (Seelig and Truitt, 1999; Prescott, 2006; Silverman, 2019). However, in this research, primates, despite both academic and public acknowledgment of higher levels of sentience (Quigley, 2007), constituting a specially protected species within A(SP)A (Hobson-West and Davies, 2018), and, in America, legal entitlement of

[40] This is based on the following grouping: dogs (beagles and all other dog breeds), small mammals (rats, mice, gerbils, rabbits, hamsters, ferrets, guinea pigs), birds (common quail and all other birds), agricultural animals (cattle, sheep, pigs and goats), and cats, horses, amphibians and primates.

chimpanzees to retirement (Hua and Ahuja, 2013), were not rehomed. Despite 10,141 primates being used in research in the UK between 2015-2017, none of the four facilities that completed the survey and kept primates had rehomed them. The ELH of one facility keeping primates explained that this was due to the difficulty in maintaining the social groups established in the laboratory, and consequently the negative welfare implications of separation when undertaking rehoming. They did however suggest that if the facility were to close, the "*rehoming of stable social groups would become a more viable option and would be considered at that time."* Thus, a complex ethical and practical problem emerges, whereby, although primates may be more likely to be considered for rehoming, due to their higher levels of sentience, rehoming them may present additional challenges in terms of compromised welfare.

Due to their taxonomic status and levels of sentience, research on primates presents ethical and practical challenges, as primates occupy a 'confused' and 'contested' space within boundary making practices (Hobson-West, 2007). Non-human primates possess an intelligence that allows them to learn, and is resonant of human capacities. This encourages humans to view primates as similar to themselves, and also to consider their intelligence in relation to the comparatively lower intelligence of other species (Conlee and Rowan, 2012). This is particularly important in the laboratory environment, where different species are kept in relatively close proximity (Home Office, 2015b; 2016; 2017). They are also similar to humans biologically and even visually. Primates have longer life spans, and, in the laboratory setting, this raises issues due to the prolonged periods they may spend in captivity (Carlsson et al, 2004) and the numerous experiments to which they may have been subjected. Their long lifespan also serves to make them more suitable to rehoming, as they are more likely to spend a considerable period outside of the laboratory if not euthanised (Prescott, 2006).

However, due to spending the majority of their life in a laboratory, primates can display post traumatic stress disorder similar to that of humans. Echoing the worries expressed by those that completed the questionnaire, Bradshaw et al (2008), who undertook a case study analysis of two chimpanzees at the testing facility LEMSIP in the US, found the chimps exhibited a compromise in "major categories in functionality". Although providing weight to the argument which recognises the similarities between humans and primates both biologically and physiologically (Weatherall, 2006), these findings further reinforce how rehoming should never be a sentimental consideration, and instead attempts to rehome should have at their heart a desire to improve the lived experience of experimental animals.

5.5 Policy

Of the 41 facilities that completed the questionnaire, 39% had facility-wide rehoming policy in place. Of those that rehomed, 73.7% had followed some form of policy in order to do so *(see Tab. 2).*

	Facilities rehoming (n=19)	Facilities not rehoming (n=22)
Facilities with rehoming policy	14 (73.7%)	2 (9.1%)
Facilities without rehoming policy	5 (26.3%)	20 (90.9%)

Table 3 – Table detailing the facilities that have facility-wide rehoming policy.

This suggests that having a robust and rigorous policy is considered important when rehoming. Current research on the rehoming of laboratory animals stresses the significance of developing an agreed policy for handling issues including biosecurity (Clark, 2014), care for the animal post-rehoming (Döring et al, 2017), and a contingency plan should animals be returned to the facility (LASA, 2002). This research finds that wider Home Office policy was commonly adapted and developed at the facility-level, and made appropriate for the species housed at that facility. For example, one facility had a separate section of their rehoming policy which applied specifically to xenopus frogs, which, as a result of chytridiomycosis (a serious fungal disease in amphibians), cannot be rehomed or released to the wild. Their specific facility policy outlines that:

> *"Tests carried out on Xenopus frogs in the University have been positive for the fungal organism, and the specialist breeders cannot guarantee its absence from the animals that they supply. It therefore has to be concluded that the re-homing of Xenopus frogs, however outwardly healthy they appear, cannot be permitted at the present time."*

Some facilities had adapted overarching national A(SP)A guidance on rehoming in order to make the guidance more relevant to their facility, and the information in the Home Office 2015 report (which is 49 pages) was commonly condensed into a smaller, more applicable, document for dispersal to facility staff (Home Office, 2015a). Having stringent policy in place can also help to counteract complex issues of liability and responsibility, lessening potential reputational risks for facilities. Discussions of the wider landscape in which rehoming occurs, including relations with other stakeholders and the importance of trust, risk and openness in these webs of formal and informal contact, will be explored in further detail in chapter seven.

Most facilities that had not engaged in rehoming over the period 2015-2017 stated they had no plans to consider a rehoming policy in the future, and over 90% had no current rehoming policy. Just three facilities explained that rehoming was being mentioned and/or discussed at AWERB meetings, or that the practice was something that would be considered in the future should the facility house a potential rehoming candidate. This suggests that most facilities have either developed 'rehoming cultures', whereby they rehome routinely, which research finds is crucial in creating a caring facility identity (Donald, 2018), or they consider themselves a facility where rehoming is considered impossible, now, or in the future. A discussion surrounding the affective atmospheres and cultures of facilities with regard to rehoming is discussed in more detail in the following chapter.

5.6 The rehoming process

This section of the chapter will explore the procedures followed in order to rehome laboratory animals, which the questionnaire reveals is a two-part process of both animal and prospective owner preparation. This includes a consideration of practical issues such as selecting the right animal to be rehomed, ensuring owner capability, and preparing them to adopt a laboratory animal. Yet the practices involved in ensuring a successful rehoming also result in a wider change to routine laboratory life, one in which the boundaries of the research facility are rendered more permeable through the flow of materials, ideas, people, and, ultimately, live animal bodies.

5.6.1 Preparation of the animal

Participants deemed selecting the most suitable animals for rehoming a crucial component, often guided by rigorous facility-developed policy, as outlined in the previous section. The survey revealed that various factors were considered significant when assessing the suitability of an animal for rehoming. These included the animal's health, their behaviour, age, breed and temperament, as well as the procedures they had undergone which would likely dictate their long-term health *(Tab 4).*

Factors to consider as raised by participants	Number of times referenced
Health	14
Temperament	8
Age	3
Breed	1
Species	1

Table 4 – Animal suitability frequency count (n=19).

The majority of respondents referenced the importance of the NVS in this process, who is typically in charge of judging these factors and enabling a comprehensive assessment of overall welfare and quality of life post-rehoming. The responses collected suggest that the most important factor to consider is the health of the animal, and if that cannot be guaranteed, then rehoming should not be attempted. As one respondent, a Named Information Officer at a facility which kept amphibians, birds and rodents, wrote: the *"NVS and the NACWO must confirm that the condition of the animal and its health allows for rehoming."*

In terms of preparation for rehoming, larger mammal species typically required greater effort from laboratory staff (in terms of time and resources) to rehome. This included establishing and ensuring the completion of comprehensive and effective socialisation and training schemes, exposure to new environments, and necessary medical procedures (such as neutering). These were not noted to be essential with livestock (only socialisation deemed appropriate) and no preparation was required for the rehoming of fish and amphibians. Despite the fact that it would seem that rehoming larger animals required greater effort in terms of time and cost, this does not appear to hinder efforts to rehome, and rehomed numbers are still much higher in these species *(Tab 2).*

Disputing literature which describes routine animal standardisation in the laboratory, where the animal's body is transformed from a 'somatic' or living body to one that is merely 'corporeal' (Lynch, 1988; Acampora, 2006; Birke et al, 2004), I find that, although the processes entailed in efforts to rehome could be generalised to an extent, participants stressed that they should be simultaneously modified to suit the needs of individual animals. Here, I find Mol et al's (2010) concept of 'tinkering' useful. The concept was originally used in exploring the nature of care in clinics and other healthcare settings, but its uses can be extended to critically interrogate how rehoming preparation schemes are adapted at an individual level. Here, although there exists overarching regulatory guidance (Home Office, 2015a), participants explained that it was vital that the policy was adapted (or "tinkered") to the animal in question. By continuously reading the behaviours of the animals, a form of "becoming with" (Despret, 2004), the animal laboratory staff were able to acquire tacit knowledge about animal characteristics that enabled the development of specific, individualised rehoming preparation

schemes. As one participant, who worked at a facility housing horses, explained: laboratory staff *"determine how inquisitive an animal is on daily checks".*

Indeed, a comprehensive assessment of the individual animal is key, as this feeds into developing appropriate training and socialisation. As one participant outlined, "*We get to know the animals as individuals and have them in our care long enough to understand what type of homes would suit the animal*". The idea that facility staff "get to know" animals helps to unearth complex questions regarding animal individuality and agency, and the dynamic processes through which novel possibilities, identities, and characteristics materialise between the animal and those responsible for its care. Such a care involves continually reading animal bodies, and produces an embodied and affective knowledge of the lived experience of individual animals. Following Winance (2010), 'tinkering' with rehoming policy can thus be conceptualised as a way to care, opening up a space which allows animals to "speak back" (Chaudhuri, 2007) and inform their own rehoming, and ultimately, their life outside of the laboratory space. However, it should be noted that certain species, mainly dogs, cats and horses, were more likely to qualify for this form of individualisation and subsequent 'tinkerings'. Further, attempts to appropriately train and socialise laboratory animals also aids in the manufacture of obedient, and therefore culturally accepted, companion animals that fit neatly within expectations of a pet (Power, 2008). Chapter six will explore this idea in further detail.

5.6.2 Finding the right home

Running parallel to efforts to select the right animal for rehoming comes a selection of the right home. This research finds that the majority of animals are rehomed primarily to staff, or their friends and family (18 facilities out of the 19 that rehomed employed this pathway to find homes). This route was more commonly sought when rehoming smaller numbers of rodents, such as rats and mice. Rehoming to staff can be beneficial; owner preparation, such as ensuring good handling ability, is rendered unnecessary as the member of staff rehoming the animal will likely have ample experience with the species in question (a factor noted by 10 facilities that rehomed to be an important owner pre-requisite). Eight facilities used word of mouth to find homes, suggesting that there is an acceptance of rehoming to the public, but that this is not generally advertised openly, and instead through staff contacts. Two facilities transferred their animals to third party rehoming organisations who undertook the rehoming process on their behalf, signifying that, although relatively rare, effective partnerships can be forged between facilities and rehoming organisations.

Private family homes did not constitute the only space in which laboratory animals were rehomed; homes were found in a variety of settings in which 'species meet' (Haraway, 2008), including bird

breeders, animal sanctuaries, schools, farms, and petting zoos. Thus, the relocation of laboratory animal bodies is not standardised, and instead animobilities (Braverman, 2013) are facilitated to a variety of spaces in which humans encounter the animal other. Simultaneously, and as will be explored in chapter six, this works to reveal the ambiguous status of the laboratory animal (Birke et al, 2007) and thus their capacity to acclimatise to a new identity or socio-legal category.

The spaces to which laboratory animals are rehomed can be perceived as natural, wild, safe, possibly educational (as with schools or zoos) or, in the case of farms and bird breeders, important in relation to the wider human political economy. It is in the farm where animals may find it harder to shift their status from what Wilkie (2005) terms "sentient commodities", or Barua (2016) coins "lively commodities". Thus, human-induced animal movement works to disclose wider geographies of science, value, capitalism and politics, as well as broader socio-cultural processes governing the use of animal bodies and the ways in which they are valued as they move to different physical, but also symbolically constructed, spaces (Philo and Wilbert, 2000). The movement of animals to different spaces also reveals the fluidity and variability of the rehoming process, which will inevitably fluctuate for every animal leaving the laboratory.

5.6.2.1 Owner suitability

Evaluating owner capability was judged to be very important in the rehoming process: 16 of the 19 facilities that rehomed required the prospective owner to meet certain criteria *(Tab 5).*

Factors to consider as raised by participants	Number of times referenced
Prior species experience	11
Suitable housing	3
Owner questionnaire completion	2
Home inspection	2
Demonstrate handling ability	1

Table 5 – Owner suitability frequency count (n=19).

Again recognising animal agency and individuality, much emphasis was placed not only on finding a home, but also on ensuring it was the 'right' home for the animal. Criteria included that the prospective owner must be able to demonstrate that they have suitable housing, previous species experience, and handling ability. In addition to this, and mainly for traditional companion species such as cats and dogs, the NVS may visit/inspect the proposed home to ensure its suitability. The potential new owner may have to complete a questionnaire (two facilities required this of new owners), which includes questions investigating the motivations to rehome the animal, previous experience of

owning an animal of the same species, as well as an enquiry into the personal situation of the prospective owner (such as whether they have other animals or children in the home, whether where they live is rural or urban, and what their current employment status is). The aim of these measures is to ensure the animal's welfare will not be compromised post-rehoming.

Some facilities explained that new owners are invited to the facility to view and potentially interact with the animal before rehoming, although again it should be noted that this was mainly for larger companion species. This contact is maintained over time; one participant, a NACWO at a facility keeping horses, explained that they would "*contact the new owner approximately 4 weeks after the pony's departure for an update on its progress*", and that relevant information would "*be logged on the Home Office database and the pony/new owner's file.*"

This introduces new forms of contact and lines of engagement with the public, simultaneously raising new ethical and regulatory questions regarding the relations the public have with the people, organisms and infrastructures of the animal research laboratory. The majority of the public will never have visited the laboratory space, and, through the (presumably) positive practice of rehoming research animals, historical legacies of conflict and narratives of secrecy around animal research should be reduced (Davies et al, 2020), and, importantly, trust (re)built. This is especially relevant given discourses of public mistrust regarding the work of scientists and science more generally (Marris and Rose, 2010). Thus, a successful rehoming experience could aid in efforts to be more open, and facilitate communication between the scientific community and the public. Although, as I will show in the final empirical chapter of this thesis, the role of rehoming in building relations with people and organisations external to the laboratory is complex in practice.

5.6.2.2 Owner support

As well as selection criteria, once the new owner has been identified, questionnaire responses reflect that preparing new owners appropriately is equally important *(Tab 6).*

Factors to consider as raised by participants	Number of times referenced
Rehoming packs	7
NVS support	5
Prospective owners invited into facility	3
Socialisation advice	2
Legal responsibility	1

Table 6 – Owner preparation frequency count (n=19).

12 facilities out of the 19 that rehomed undertook some form of owner preparation. This preparation was wide ranging; 7 facilities noted that the owner is provided with appropriate housing and feeding in what the NACWO of one facility (which kept a variety of species including horses and beagles) termed a "*going home pack*". This pack included a bag of the current diet, treats and a vaccination record.

Five facilities ensured new owners maintained contact with NVS should any medical issues arise in the future. Sustained NVS support is important; Patronek (1996) found that people who take their newly adopted companion to a veterinarian are more likely to keep the animal for life, so early and maintained contact with the NVS, which many facilities made an integral part of the rehoming process, is likely to be beneficial. This shows that, even once an animal has been rehomed, the facility continues to work to ensure standards of welfare are maintained. Thus, despite the animals physically leaving the facility, the sense of responsibility toward them does not fully dissolve as they leave the physical boundaries of the laboratory.

One facility mentioned the importance of ensuring the owner is made fully aware of their responsibility for animal wellbeing, and their legal responsibility as a pet owner. As they explained, new owners are "*asked to sign a document to confirm they will be responsible for the care and health of the animal(s) and seek veterinary attention should it be required*". This suggests that facilities are aware of the risks in rehoming in terms of liability, and have policy to ensure that owners are legally responsible for their new pet and that transfer of ownership is properly enacted. These documents travel with the animal as they are rehomed.

Thus, rehoming not only involves the physical transfer of the animal from the laboratory, but also reveals the wider mobile nature of material belongings which travel with the animal as it moves to its new home. Indeed, a variety of objects accompany animals as they move from the facility: from bedding, to food and water; environmental enrichment including favourite toys; but also forms, permits, and material transfer agreements. Forms regarding the legal transfer of ownership travel with the animal as they move, typically as an official document such as a passport. For example, one participant, a NACWO, explained in response to an open answer in the questionnaire survey, "*The new owner is made fully aware of their responsibility for the pony's health and well-being. They are also made aware of their legal responsibility to change ownership details on the passport*".

The movement of these materials is significant because they enable and facilitate the animal's travel, by making their journey both physically and legally possible, and more comfortable. In the context of rehoming, animals may also travel with information: they move across space with personal details regarding their breed, age and veterinary history. Much like the flow of human bodies, animal

mobilities are enabled by standardised documentation, such as pet passports (Birke et al, 2013). The transfer of leads, toys and bedding, as well as familiar food, help to reduce the stress involved in becoming accustomed to new environments for the animal. Hence, the practice of rehoming facilitates the wider circulation of animal bodies, materials, regulations and knowledges, both within the laboratory and beyond.

5.6.2.3 Collaborating with a rehoming organisation

Another possibility is to rehome the animal with the help of a rehoming organisation (two facilities rehomed this way). This offers advantages; the organisation finds and vets the new owners, provides them with necessary information, and remains available as a point of contact. Doehring and Erhardt (2005, pg. 2) suggest that using such an organisation is "safe and anonymous" for the research institution. Indeed, many facilities have already formed good working relationships with rehoming organisations (Carbone et al, 2003). As two facilities in this research use third party rehoming organisations to rehome their animals, there is growing evidence that productive new relations can be formed based on trust and respect. This shifts the atmospheres of animal research to become more collaborative, and helps to overwrite discourses regarding 'a culture of secrecy' (Vincent, 1998).

Thus, as well as rehoming reshaping practices by inviting the public into the laboratory, a space is also opened up to form additional novel relations with organisations outside of the laboratory. Although welfare organisations have begun to collaborate with the scientific community to prevent, or lessen, 'severe' suffering (RSPCA, 2015)[41] and deliver training on ethics, animal welfare and laws regulating both the use of, and care for, laboratory animals, these organisations can also provide invaluable expertise on rehoming.

Indeed, despite the primary goal of the RSPCA centring on the replacement of animals used in research, external animal welfare organisations are becoming involved in laboratory life and decision-making in new and innovative ways. Instead of guiding policy externally, these organisations become embedded practically and materially in laboratory animal lives, and are responsible for assessing behaviour, training, socialising, identifying new owners, and following up on progress. This emerges as particularly significant due to the perception that welfare organisations and research institutions harbour differing ethical approaches with regard to the value and utilisation of animals (Dol, 1999). A more in-depth analysis of the kinds of new relations forged between rehoming charities and experimental science with rehoming will be included in the final chapter of the thesis.

[41] The RSPCA specifically have a 'Research Animals Department', which aims to provide specialist expertise in a range of scientific, ethical, and welfare issues.

5.6.2.4 Conclusion

From the findings, it is possible to outline the 'typical' 5-stage rehoming process (*Fig 3).* Participant responses suggest rehoming schemes are catered to the individual animal, and so do divert in some ways from this broad framework. For example, rodents were commonly rehomed with housing, and companion species such as dogs and cats were more likely to be rehomed through third party rehoming organisations, and only after an NVS home visit. However, this diagram broadly conveys the consistent themes that feature in the rehoming process.

The typical 5-stage rehoming process

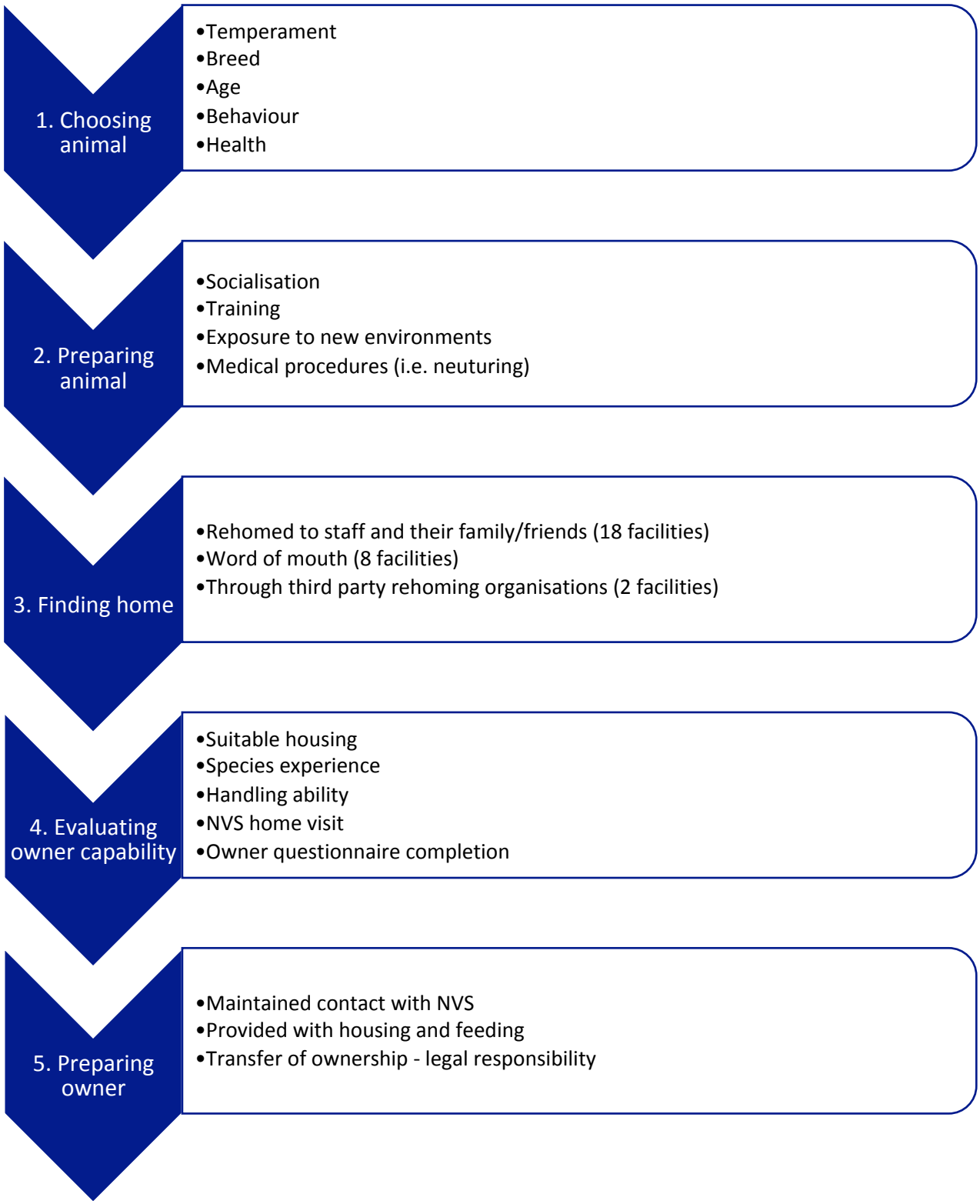

Figure 3 - The 5-stage rehoming process as understood by those UK facilities currently engaging in rehoming.

5.7 Difficulties in the rehoming process

The majority (58%) of facilities that had rehomed from the 2015-2017 period report that they encounter no problems (Fig. 4). However, eight facilities that had rehomed during that period stated that the process was time consuming; one NVS suggested there was a "*delay in Home Office approval*", whilst another facility director argued there was an extensive "*level of documentation required*".

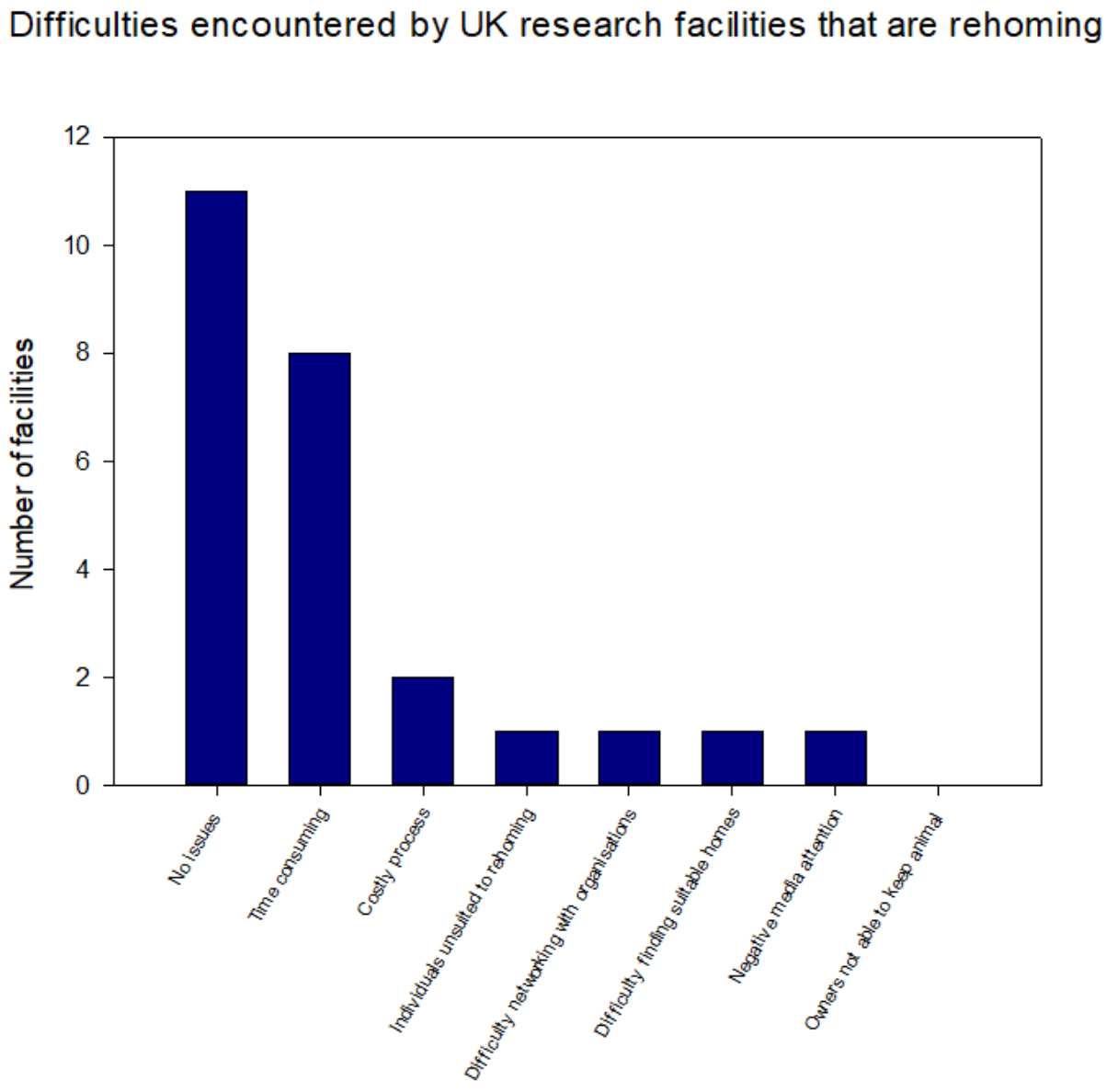

Figure 4 – Examining the main difficulties experienced by UK research facilities that have rehomed in the past 3 years.

This suggests that generally, if attempted, rehoming does not pose many challenges, but can be time intensive due to the need to navigate complex regulatory boundaries in order to sign the animal off from A(SP)A regulation. These issues are compounded by the wider socio-economic environment in which universities in particular are short-staffed (Cressey, 2013), and thus do not have spare time to dedicate to what is ultimately a voluntary decision.

Conversely, very few suggested rehoming was a costly process (2 facilities), that there was difficulty finding homes (1 facility), networking with relevant organisations (1 facility) or that their rehoming experience attracted negative media attention (1 facility). The latter is important as it suggests that, although research finds the worry of receiving negative media attention a significant factor preventing research facilities from considering rehoming (Kerwin, 2006), attracting negative media attention as a result of rehoming is a rare occurrence.

As there is an understanding that in order for rehoming to be successful it must be considered carefully and planned thoroughly (Wolfensohn, 2010), it is inherently resource intensive for the facility. Interestingly, Kerwin's (2006) research did not raise time as a significant issue when rehoming non-human primates. This is especially relevant given the fact that rehoming primates is likely to be more time and resource consuming compared to the rehoming of a rat or a guinea pig. However, Prescott (2006) and Seelig and Truitt (1999), like this research, also conclude that finding and assessing a home of adequate quality is a time consuming process. Medical considerations also warrant contemplation; Carbone et al (2003) explain that animals should be spayed prior to rehoming, and that if this is not standard procedure, it can be time-intensive in terms of set up, surgery and aftercare. Working through a third party rehoming organisation can help to counteract this as the organisation can undertake any medical attention needed (including neutering and vaccinations), as well as the sourcing and screening of prospective owners (Carbone et al, 2003).

Crucial to these discussions is consideration of the species being rehomed; research finds large mammals, which have a higher capacity for stress and behavioural issues (Honess and Marin, 2006), may be more time consuming to rehome (LASA, 2002; Carbone et al, 2003), especially if transportation requires extra consideration (Seelig and Truitt, 1999). This also holds true at the preparation stage; the participants indicated that rehoming dogs, cats and horses required significant levels of socialisation and training, which often necessitates substantial time investment on the part of facility staff (LASA, 2002). Interestingly, this did not deter efforts to rehome these species, as they were much more likely to be considered for rehoming (*Tab 1*). LASA (2002, pg. 24) recommend that the resources needed to successfully rehome should not be a deterrent and that it should still be "recommended for the sake of the dogs". Fleury (2017) too acknowledges that retiring chimpanzees

is time consuming, but a necessary process to undertake in terms of its potential to enhance animal welfare and offer a dignified retirement to laboratory animals.

5.8 Opportunities presented by rehoming

The majority of facilities that completed the questionnaire (58%) reflected that rehoming was "good for staff morale" (24 facilities). A similarly high number (23 facilities) believed it showed a positive ethical stance. The expectation of future well being of the animal played a significant, but slightly lesser role (19 facilities), while 13 facilities felt rehoming offered no opportunities. Interestingly, but perhaps unsurprisingly, those facilities not currently engaging in rehoming generally felt that it offered them no benefits. Conversely, those that had engaged in rehoming in the previous 3 years were more likely to suggest it contributed positively to animal welfare, staff morale and demonstrated a positive ethical stance *(Fig. 5).*

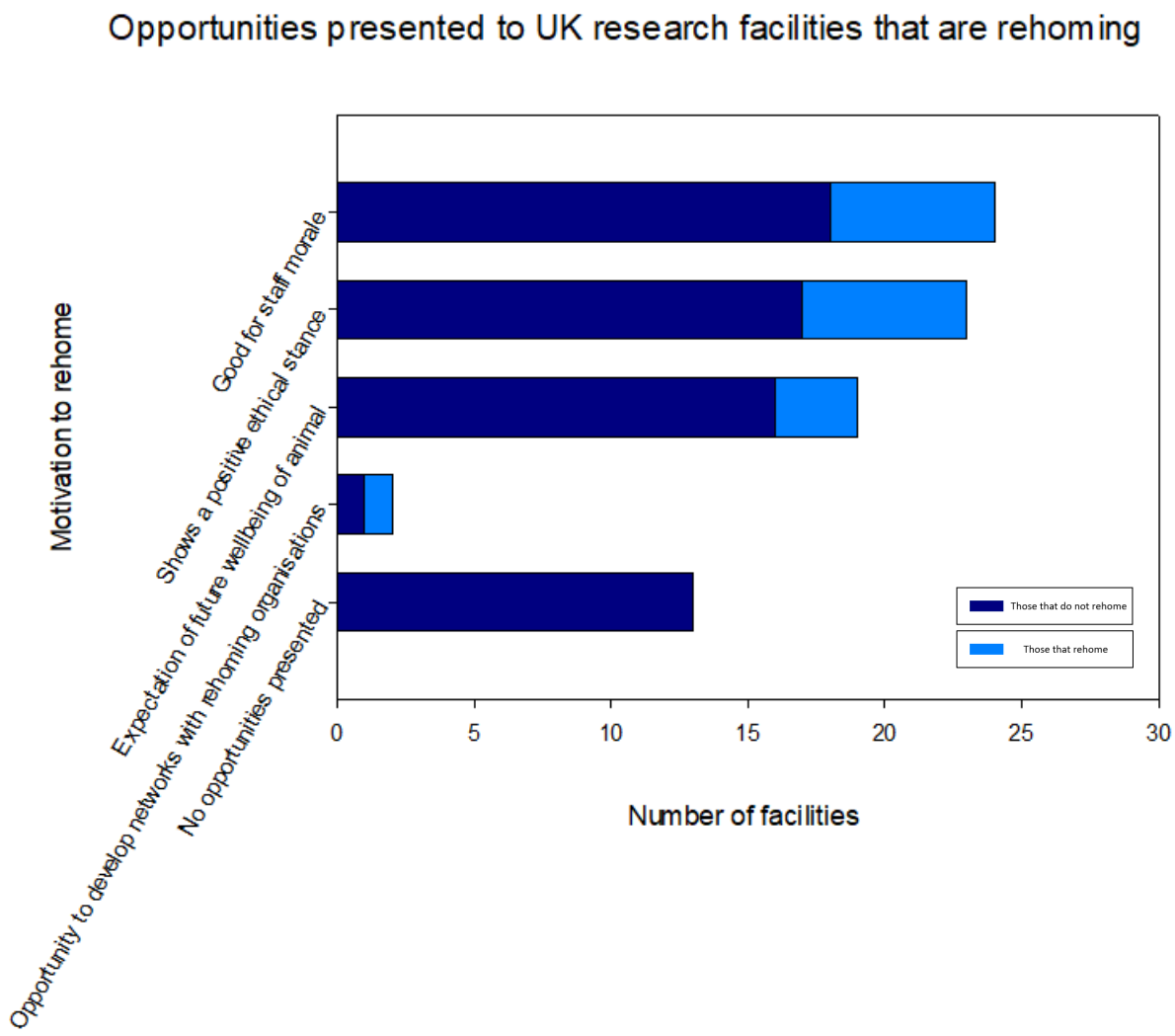

Figure 5 – Investigating the perceived opportunities presented by rehoming as understood by UK research facilities.

Much of the research exploring the rehoming of laboratory animals reflects on the benefits rehoming brings (LASA, 2002; Wolfensohn, 2010; Franco and Olsson, 2016). McAndrew and Helms Tillery (2016) suggest that rehoming non-human primates to sanctuaries helps to 'uphold scientists' ethical responsibilities'. This relates back to moral and ethical arguments surrounding providing laboratory animals with a good quality of life, echoing arguments that it is scientists' ethical responsibility to rehome animals when euthanasia is not mandatory. Fleury (2017) proposes that rehoming allows a dignified and deserved retirement, and also has important ramifications for the wider facility in helping to foster and maintain a "culture of care" and improve staff wellbeing (Prescott, 2006; Wolfensohn, 2010).

The positive effect on staff wellbeing is likely to be enhanced if the staff member is able to rehome the animals themselves, which the survey reflected was common; 18 facilities rehomed their animals to staff members. Rehoming to staff is not without challenges; an NVS at a facility that kept a variety of species explained how the rodents they kept could not be rehomed to employees as they might "*acquire rodents from other sources*" that are "*microbiologically dirty […] which could present a risk of inadvertent delivery of disease*". However, rehoming to staff offers several benefits; routine euthanasia is emotionally challenging and stressful for facility staff (Bennet and Rohlf, 2005), so any opportunity to allow animals to have a life outside of the laboratory will prove beneficial to morale. Staff care deeply about the animals with which they work (Bayne, 2002), and their well-being is intimately entangled with that of the animals for which they care (Sharp, 2018).

Even within the contested ethical space of the laboratory, where staff are responsible both for caring for animals, and deliberately harming them to aid science, emotions cannot be divorced from the act of care. For example, in the laboratory there are instances of animals being personalised, set aside from scheduled euthanasia, and treated as pets (Bayne, 2002; Holmberg, 2010). Greenhough and Roe (2018) reveal instances of laboratory animal individualisation, and tell the story of 'Fat Frank', a rat for whom ATs had developed a particular affection. Interestingly, even in the laboratory the permeability of boundaries separating 'pet', 'wild', and 'lab' animal are revealed (Holland, 2018). It is in these intimate accounts that the true complexity and multi-layered nature of human-animal relations are divulged.

Rehoming represents a novel way in which to care for animals. Being 'response-able' (Haraway, 2008) facilitates the meeting of animal desires through ethical practices and 'tinkerings' (Mol et al, 2010), as wider ethical and caring frameworks are adapted to the individual animal. The form of care enabled through rehoming demonstrates a moving beyond carefully prescribed 'animal husbandry' advocated by legislation, and instead surpasses it. Being attentive to whether rehoming is in the best interests of the animal in question opens up a space for an affective and embodied care based on an intimate attunement to the animal other (Greenhough and Roe, 2011). Rehoming allows the research subjects to 'speak back' (Giraud and Hollin, 2006) and sanctions the meeting of their individual needs and wants. In this framework, animals are not viewed solely as commodities, but instead attributed an intrinsic value and therefore an inherent right to life. These ideas are further interrogated in chapters five and six.

5.9 Reasons facilities are not currently engaged in rehoming

Amongst those facilities that had not rehomed between 2015-2017, eight reported that the reason was concern for the animal's health if it were to be rehomed. Eight also articulated that high demand means few are left to retire. Slightly fewer numbers felt rehoming would be too stressful for the animal (4 facilities), that it was difficult to predict long-term health implications (4 facilities), or that rehoming would result in a decrease in welfare standards (4 facilities). Fear of unwanted or negative media attention (2 facilities), convenience (1 facility) and being unaware that rehoming is possible (one facility) were rarely selected as reasons not to rehome *(Fig. 6).* Reasons for not rehoming can thus be grouped into 1) welfare concerns with regard to the animal's health if rehomed, 2) practical issues surrounding demand and the fact that research needs tend to leave few animals to retire, and 3) external challenges including fear of negative media attention.

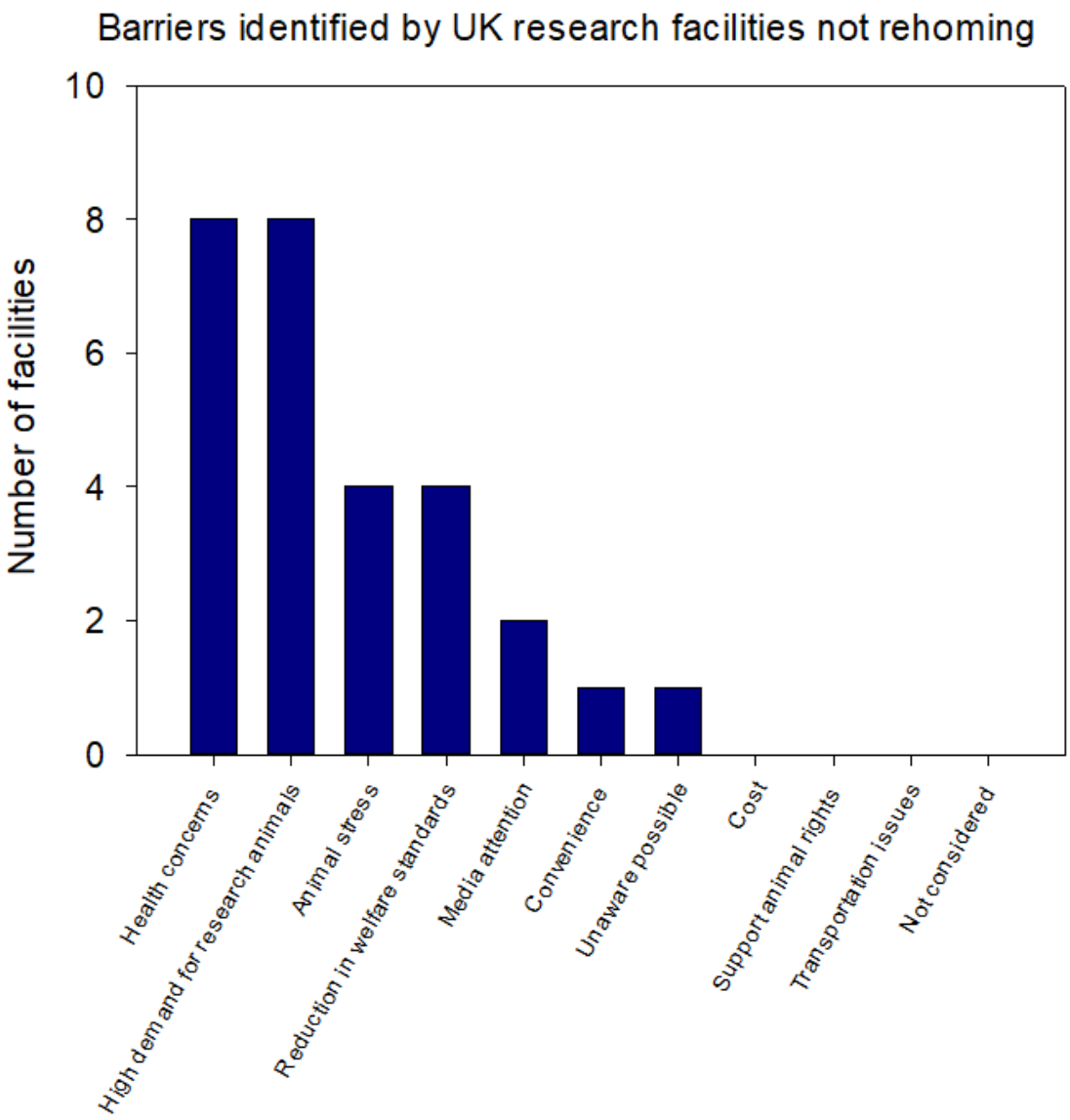

Figure 6 – Reasons cited by UK research facilities for not rehoming in the 2015-2017 period.

5.9.1 Animal health and stress

Four facilities proposed rehoming would be too stressful for the animals kept at their facility. Research shows that even animals legally permitted to be rehomed may display physical or behavioural abnormalities as a result of being in the laboratory environment for a sustained period of time (LASA, 2002; Kerwin, 2006; Chanvin et al, 2012; Franco and Olsson, 2016; Döring et al, 2016). Lorimer et al (2019) term the process by which an animal's behaviour reflects their lived environment 'animal atmospheres', and propose that the confined nature of the laboratory may lead to animal boredom and repetitive behaviours. Equally, however, as Prescott (2006) suggests, it is these animals

which may benefit most from retirement. Thus arises an ethical dilemma. If the abnormal behaviour cannot be relieved within the confines of the laboratory, then rehoming should be considered to a home or a sanctuary where behaviour can be monitored and addressed as a priority. This can prove effective; sanctuary directors in Kerwin's (2006) study received monkeys displaying atypical behaviour, which disappeared after 3-6 months when placed within a more natural setting.

There is a concern that rehoming can negatively affect both the psychological and physiological health of an animal; this often depends on age, health, and duration of transport to the new home, thus again alluding to the importance of selecting the right animal for rehoming (Seelig and Truitt, 1999; LASA, 2002). This is particularly relevant for laboratory animals who have likely undergone no formal training and are poorly socialised. Transportation of animals, especially primates who possess significant mental capacities (Towner, 2010), can also be very stressful (Novak et al, 2013). Thus emerges the dual and complex role that perceived future animal welfare plays, in terms of acting both as a motivation for rehoming, and as a barrier in terms of loss of control and potential reduced standards of care.

5.9.2 Loss of control of animal welfare

Four facilities suggested a loss in control of animal welfare was enough to prevent them from considering rehoming. In the laboratory, animal welfare is tightly controlled and subject to stringent legislation. However, once rehomed, this legislation no longer applies as the animal crosses socio-legal categories and is no longer a 'laboratory animal', protected under A(SP)A. One participant, a NACWO at a fish and rodent facility, explained how it was "*too difficult to monitor animal welfare after re-homing has occurred*". Another participant, a manager at a mouse facility, outlined that the animals at their facility required "*high standards of care not readily available*". Indeed, ethical regulation, like the animal itself, undergoes transformation as it moves across different spaces and places. Protective legislation does not travel with the animal, and is therefore, as animobilities are enabled, at times rendered inapplicable. This legislation also extends to those responsible for animal care; A(SP)A necessitates that animal care staff are well trained in animal husbandry, and thus know how to "care-well" (Buller and Roe, 2018, pg. 66). For example, animal technicians have developed somatic sensibilities (Greenhough and Roe, 2011) derived from a complex mix of their training, an enduring interest in animals, and sustained time periods working with a particular species.

New owners, however, are unlikely to have received formal training in animal care. Indeed, Sollund (2011) explains that abuse of companion animals in the form of maltreatment, neglect and omission is worryingly common in companion animal owners. This abuse can be physical, psychological or even

emotional. Even if companion animal abuse is reported to the police, there is often no follow up on such complaints, which allows the abuse to continue unobstructed (Larsen, 2003). Carbone et al (2003) also discuss the high turnover rate of companion animals, suggesting owners may lose interest and consequently relinquish their animal. The main challenge, as also reflected in the questionnaire, comes from the difficultly in ascertaining sufficient information to judge a prospective owner's capability to care for an animal (Sollund, 2011), again reiterating the importance of well-planned policy in owner selection and assessment.

5.9.3 Regulation, biosecurity and perceived risk

Utilising the open answer function of the questionnaire, five facilities reflected that, for genetically modified animals, rehoming is simply not an option. This relates primarily to biosecurity issues. Anticipated risk thus contributes to some facilities choosing not to/being unable to rehome. As a result of their genetically modified status, some facilities had made it legislatively impossible to permit these animals to leave the laboratory. Many UK facilities house genetically modified animals, and this number is increasing (Home Office, 2017). The Home Office advice note on rehoming (Home Office, 2015a) states that an animal should only be rehomed if it will not harm the environment, other animals, itself or people, but participants acknowledged the difficulties in guaranteeing this when rehoming genetically modified laboratory animals. One participant, a Director at a rodent facility, explained how their genetically altered rodents are "*not permitted for rehoming*". Another, an AWERB chair at a fish and rodent facility explained, "*We are working almost exclusively with infectious pathogens so rehoming cannot be achieved from a human safety point of view*". Another AWERB chair at a rodent, fish and pig facility, discussed the "*associated risks*" involved with rehoming GM animals used in "*infectious work*".

The future of genetically modified animals after research concludes is currently legislatively obscure. What is clear is that rehoming these animals may require the navigation of additional regulation, additional work which may instead work to prohibit attempts to rehome. This means that the ability of staff to ascribe value and care is in a complex network with legal guidance and regulatory requirements, perceptions of risk, and biological status of experimental animals (Davies et al, 2018). The Advice Note (2015) states that:

> *"Genetically Altered Animals (GAA) and Animals Containing Human Material (ACHM)11 can be kept alive at the establishment under the care of the NVS at the end of their use in regulated procedures providing they meet the criteria of ASPA section 15 (see Advice Note on Use, Keeping Alive and Re-use). As well as meeting the requirements of ASPA*

s17A, other legislation may apply to re-homing or setting free of such animals. Please contact your assigned inspector if you wish to re-home or set free such animals."

Clark (2014) also reflects on the difficulties of rehoming GM animals. He discusses how GM EnviroPigs were not rehomed for fear of potential environmental and food safety risks, rendering their transfer to a farm sanctuary "irresponsible". The main perceived risks in this situation were whether the pigs would escape into the environment or enter the food system, and the promise of adequate containment did not provide the security the facility required to enter into an agreement with the sanctuary. Thus, the rehoming of some animals can entail complex legal and liability issues should animals escape (Clark, 2014). Carbone et al (2003) also advise that no genetically modified livestock be rehomed or enter the food chain, arguing genetically modified animals should not be adopted, importantly whether they are neutered or intact, to any member of the public.

More complex psychological and cultural complications arise in addressing these ethical debates. GM animals are bred, and their bodies created, to serve a single purpose: to improve knowledge of human health. When laboratory animals are aesthetically, but also biologically analogous, a form of standardisation occurs. Hobson-West (2007) outlines how the "technical bespoking" of GM animals translates to them being understood as objects that can be manufactured. GM animals are therefore unlikely to be considered for rehoming because they are more likely to be only instrumentally valued and thus limited to their original purpose, reducing their capacity to articulate an individual identity. Individualisation of animal life (Bayne, 2002), and the reclassification of animal roles, which Koch and Svendson (2015) find is necessary for rehoming, is consequently challenging for staff, who rely on the bodies of genetically modified animals in their daily work. GM animals are thus both discursively described as laboratory animals, but are also physically mass-produced as such. This suggests that some animals are physically, but also conceptually, confined to the laboratory and their social category as a research animal, in turn fortifying the boundary between GM animals and their non-transgenic conspecifics. Thus, both symbolically and practically, the rehoming of genetically modified animals raises additional and complex challenges.

These insights also expose how ideas of risk permeate, and thus also inform, laboratory practices and regulation. Understandings of risk were found to lie at the heart of rehoming decisions in this research. Beck's (1992) thinking regarding the 'risk society' of the modern world proves fruitful here. With modernisation, he argues, comes the irreversible endangering of human, plant and animal life. The transfer of information deemed 'scientific' (important here as notions of risk are perpetuated by scientists working in animal facilities) can be altered, minimised or dramatised (Beck, 1992). Risks are understood as both "unpredictable" and "incalculable" (Macnaughten, 2004, pg. 548), thus reflective

of the views of facilities, where rehoming GM animals was perceived to be precarious and could introduce unnecessary hazards. Beck argues ideas of risk are defined by, and originate from, these 'scientific' institutions. Indeed, and crucially, the fact that there is an insistence on the purity of scientific analysis, further paints the contamination of human, animal and plant life as perilous (Beck, 1992). Issues with biosecurity are magnified in the context of rehoming as the practice could be traced back to the facility that released the animal(s) from A(SP)A. If a dangerous rehoming were to be traced back to a specific facility, the result would be, as Clark (2014, pg. 102) terms it, a "PR nightmare".

The human desire to control animal movement also illuminates perceptions and flows of risk. Animals that defy human orderings are commonly defined as a threat, and Hodgetts and Lorimer (2018) argue that there exist established concerns about the enhanced mobilities of animals that spread disease, thus necessitating careful monitoring of their movement through bordering practices. Yet, the character and nature of the bio that is threatened by the rehoming of laboratory animals is not clearcut, demonstrated by the challenging nature of distinguishing between natives and invasives, who belongs and which bodies are forbidden. Using the rehoming of GM animals as a case study, this chapter has confirmed that the ethics of animal management is always political in nature, and constantly drawn and re-drawn in relation to different forms of mobile animal life.

5.9.4 Demand for laboratory animal bodies: euthanasia necessary

The final reason animals may not be considered for rehoming relates to the scientific research itself, much of which is of a terminal nature. For example, euthanasia may be required for the collection of tissues or blood, necessary to enhance both the validity of scientific research, and human health and well-being (Wolfensohn, 2010). As one participant, a NACWO at an amphibian and rodent facility, explains, the "*vast majority of projects involve terminal or non-recovery final procedures.*" The survey responses thus reflect a conflict between the demands of the research and any possibility of rehoming. As laboratory animals are bred as a result of scientific requirement, rehoming is therefore rarely a priority. This perspective is further reinforced by the veterinary stance of death not constituting a welfare issue. As such, animals are born and die in a complex interaction with human need, or as Kirksey and Helmreich, (2010, pg. 545) state: "animal lives and deaths are linked to human social worlds".

There are also symbolic elements to the practical necessity of animal death. Exploring how the value assigned to an animal may shift in death, Lynch (1988) discusses how animals are naturalistic whilst residing in the laboratory, and become analytic beings in their death; the animal's body is literally

carved up and presented as biological material, simultaneously relinquishing human responsibility toward the animal. It should be noted that this conceptualisation is in direct contradiction to Bayne's (2002) and Arluke's (1988) research that finds laboratory staff often develop pet-like relationships with the animals in their care, and thus save, or 'salvage' (Sharp, 2018) them from their fate of euthanasia. There thus exist complex symbolic, ethical and practical contradictions within the animal house, which are rendered visible when exploring both animal death in the laboratory, or the intentional act of prolonging a life otherwise scheduled for euthanasia.

5.10 Conclusion

This chapter has demonstrated that rehoming occurs in just under 50% of the UK research facilities that participated in the study, but is usually in very small numbers (just 2322 animals are known to have been rehomed from 2015-2017). There exists a clear species preference for rehoming, whereby traditional companion animals (cats, dogs and horses) are more commonly considered. Rehoming appears to occur through two pathways: 1) in small numbers of rodents (typically gerbils, rats, guinea pigs and rabbits) rehomed to staff and their families and friends, and 2) in larger numbers of traditional companion animals through extensive public rehoming schemes. The main motivation for rehoming is to boost staff morale and demonstrate a positive ethical profile. Expectation of future well-being of the animal also played a slightly lesser, but still noteworthy and connected role. These benefits were not always recognised by those facilities not engaging in rehoming.

The most significant barrier is the perceived time taken to rehome, yet generally most facilities that rehomed in the previous 3 years found the process to be easy and few experienced substantial difficulties. This may be because the survey revealed that rehoming is generally a very well-planned process, with 14 out of the 19 facilities that had rehomed in the 2015-2017 period employing facility-wide rehoming policy which included choosing appropriate animals, socialisation and training, and owner selection and preparation. This importantly differed through its tailoring (or 'tinkering') to the animal in question.

The main reasons for choosing not to rehome include concern for the animal's health if it were to be rehomed, high demand for research animals (or rather, their biological bodies), and animals in the facility being unsuitable for rehoming (participants explained this was primarily genetically modified mice, whose rehoming introduced complex imaginings of reputational and biological risk).

Now that context has been provided which outlines the current UK laboratory animal rehoming landscape, the following chapter, drawing on care literature, moves specifically to explore why efforts are made to prolong animal life in research facilities, namely how rehoming can be conceived of as an act of care for animals, people, and wider facilities.

6. Chapter 5: Rehoming laboratory animals as care for animals, humans and spaces

6.1 Introduction

As the practice of rehoming laboratory animals is not currently mandated by European law, and has been recognised to involve significant facility resource in terms of labour, time and cost (Prescott, 2006), this chapter will investigate, why, in some scenarios, these potential deterrents are circumvented and rehoming is attempted[42]. Although rehoming, as Carbone et al (2003) propose, has long been recognised to constitute an important refinement in humane animal care and use, and represents an innovative way in which to surpass 3R requirements (Bayne et al., n.d.), understanding why attempts are made to prolong animal life in the laboratory necessitates a complex level of analysis, and involves the cultivation of an understanding of the ways in which 'care-full' (Buller and Roe, 2012) practices develop in animal research facilities.

This chapter will attend to these arguments by drawing on, and developing, understandings of care theoretically as an emotional and relational concept. Doing so involves attention specifically to the promotion of 'a culture of care' in the laboratory and the concurrent growth in the recognition of care as inherently embodied and affective (Greenhough and Roe, 2019; Donald, 2018). I argue that current understandings of care overlook embedded multispecies entanglements, and the complex and often innovative ways in which the desire to care directly *about* animals in the laboratory can be acted on, in this case through rehoming and prolonging laboratory animal life. Moving from existing conceptualisations of care as a mundane, daily practice which arguably also serves science through the making of 'happy' animals (Poole, 1997; Friese, 2013), rehoming demonstrates how animal life can be valued intrinsically, as well as how staff well-being is always situated and entangled within the welfare of the animals for which they are responsible. This chapter will explore how rehoming signifies a more fluid form of care across three different scales: 1) for the animal 2) for the staff, and 3) for the wider facility culture, thus answering the call in multispecies scholarship which asks for an improved understanding of what it means to practise care, specifically in the ethically complex space of the laboratory (Donald, 2018).

[42] This chapter has been submitted as a journal paper.

6.2 Care in the animal house

Although there exists stringent ethical regulation to guide the practical care of experimental animals, such as the 3Rs, A(SP)A, and harm-benefit analysis, recent more-than-human scholarship has turned its attention to recognise the complexity of care simultaneously as an affective state, an ethical obligation, and a practical labour (de la Bellacasa, 2012). Indeed, care entails the provision of practical, psychological and emotional support. Yet, care is a complex term; Milligan (2014) discusses what it means to care, proposing that there is a need to care *about* before something can be cared *for*. Care is therefore highly relational (Friese and Latimer, 2019), complex and uncertain. Care has always been a key focus of cultural and social geographies, but research typically explores how to assure competent and safe care for people (specifically in the nursing context, see Henderson, 1995; Leininger and McFarland, 2006), and not typically for their non-human counterparts. This chapter will help to address this gap.

Even when research on care shifts the lens of analysis onto animals, companion animals are the main subjects of care literature (Serpell and Jagoe, 1995; Serpell, 2003). However, the complex nature of care is magnified in the context of the animal laboratory. In such spaces, staff are responsible both for the husbandry of animals, but also deliberately harming them to benefit primarily human health, and euthanising them once procedures are completed. Their role is thus highly conflicted and emotionally challenging (Rollin, 1987), but can be alleviated when alternatives to euthanasia (such as rehoming) are sought (LASA, 2002; Wolfensohn, 2010).

Building on the work of scholars who explore care and welfare in the animal house (Mol et al., 2010; Holmberg, 2011; Davies, 2012; Sharp, 2017; Greenhough and Roe, 2018), this chapter introduces and explores a novel way in which to study care by focusing on the role it plays in rehoming debates and decisions. The chapter thus draws on empirical evidence to illustrate a new way in which to conceive care that centres on understanding its fluid nature, in the process re-envisaging care both as a process and a versatile affective state that trickles down and infiltrates. In doing so, this new ontological approach contributes to the body of work in the social sciences which is increasingly interested in what laboratory animal lives reveal regarding wider societal, ethical, moral and regulatory structures (Davies et al., 2018; Friese and Latimer, 2019).

Existing animal studies' research on care typically focuses on mundane daily practices (Greenhough and Roe, 2011; Holmberg, 2011; Greenhough and Roe, 2018), and how small but meaningful ethical 'tinkerings' enrich the lives of experimental animals. Indeed, care can be implemented to meet basic biological needs (which is certainly true in the context of the laboratory animal house, where staff strive to ensure the animal's food, water and bedding is in constant supply), but can also work to

surpass these and enhance quality of life. Conceptualising care in this way introduces the possibility not only of avoiding negative states, but crucially of facilitating those considered positive. This provides a practical demonstration of the narrative of "caring about" (Friese, 2019), which will be the focus of this chapter.

Current understandings of care also typically direct attention to the care receiver (i.e. the animal), and do not attend to how care also benefits those providing care, and even the wider infrastructures in which care is practised. Yet, not doing so neglects to appreciate the relational nature of care, and overlooks how care is inevitably performed in relation to other bodies, both human and non-human. This chapter draws on the existing concept, developed in nursing literature, of a "shared care", which argues that family dyads where one family member cares for another results in the development of a "shared care" (Sebern, 2005). The author posits that this shared care develops through three principle routes: 1) communication (the exchange of thoughts, feelings and opinions), 2) shared decision-making, and 3) reciprocity (characterised by empathy, listening, and partnership in managing the illness) (Sebern, 2005). Yet, this approach overlooks the affective entanglements of this relationship, and despite recognising that care can be shared between parties, the 'shared care' concept neglects to explore the ways in which care can mutually affect these parties in a complex relational web. This approach, like most that focus on care, also directs its attention specifically to humans, and does not extend the circle of ethical and scholarly concern to the animal.

Yet, in the laboratory, care is not unidirectional, and multispecies scholarship notes how the act of caring for the laboratory animal in the material space of the research establishment involves constant forms of "caring together" (Druglitrø, 2018, pg. 653). For example, Druglitrø (2018) discusses how there is a need to care for many different bodies, systems, people and technology in the laboratory, and how practices of care are inevitably dependent upon the constant coordination of multiple logics or modes of caring (Mol, 2002). Despite this acknowledgement, again we see how the focus is on *delivering* care for many, and not specifically on how one practice, such as rehoming, can actually result in, and directly foster, care for many, whether human, non-human, or even entire spaces and places.

In fact, the implications of sharing care, or at least that of sharing suffering (Haraway, 2008), are enhanced in emotionally challenging environments such as animal facilities, where multispecies welfare is intricately entangled. In keeping with a geographical metaphor, and in order to address the shortcomings in current understandings, this chapter thus introduces care as fluid, crossing species boundaries and pooling in some facilities in higher concentrations. When conceived this way, care through rehoming both persists, and flows, and reaches many, but seems not to dry up. Even where

rehoming has not recently taken place, stories endure. Care flows and extends after and beyond the rehoming event through the re-telling of stories. Therefore, this chapter introduces a novel way in which to understand care by drawing on examples from rehoming practice, which allow us to explore how care can be conceived as fluid, circulating and seeping into multispecies bodies and infrastructures.

Care is recognised by those working in animal facilities as an integral component of laboratory life. In fact, many managers, researchers, and animal technicians are familiar specifically with the concept of a culture of care, and reference the importance of integrating such a culture into the daily practices of the laboratory in a move to constantly strive to improve animal welfare. Importantly, facility staff argue that the ethical practices advocated by a culture of care will increase in prevalence as the importance of providing these caring cultures are realised. As Josh, a researcher at an animal facility, explains:

> *"I think all of the things that are good for animals in the research context will be more common in the future. That's what the culture of care is about. And, I think people are, and should, engage with it".*

Crucially, staff explain how ensuring the existence of a culture of care is accepted as a facility-wide responsibility. As Freya, a facility manager, elaborates:

> *"[A culture of care] means any animal under our roof, I suppose you would call it, has the best possible care, and that's not just by researchers, not just by animal care staff, it's across the board. Everybody has that caring side [….] And it really means, I suppose, a responsibility of the whole institute, so it's the vet, the animal care staff, the researchers, administrators, everybody is firstly engaged with making sure the animals have the best possible environment, and, you know, we'll do research on them but the animals shouldn't really know anything about it […] They should have the best possible care."*

Freya's interpretation of care provides a useful lens for introducing and opening up care as a positive, flowing and affective state. Freya understands care to extend beyond animals, and to seep, infiltrate and be felt, in some capacity – whether it be a moral responsibility, affective state, or physical labour - throughout the "whole [research] institute". Freya discusses a culture of care as a responsibility to embrace a "caring side" of which everybody is inherently in possession. Care thus trickles and flows at different levels in the laboratory, and can be conceptualised as ethical behaviours and atmospheres in need of continual assessment and cultivation. In order to demonstrate the fluid nature of care, it is

necessary first to isolate and understand each care strand. I begin by exploring rehoming as care for organisms below.

6.3 Rehoming as care for the animal

6.3.1 Care and recognising the value of animal life

There is a growing body of research, primarily in philosophy, anthropology and ethics, dedicated to examining the moral status of animals in a move to take seriously their respective ethical standing (Carruthers, 1992; DeGrazia, 1996; Swart and Keulartz, 2011; Rowlands, 2016). The majority of this work focuses on exploring the role of moral theory in the treatment of non-humans from an epistemological perspective, and has rarely applied this theory ontologically to practices in the laboratory such as rehoming (a notable exception being Koch and Svendsen, 2015). Further, although previous research has demonstrated how intrinsic value might vary between species (Frey, 1988; O'Neil, 1997), little has examined how an individual animal's intrinsic value may develop over time in the laboratory, and the affective relations and tangible outcomes that might foster this.

Yet, I find that, entangled in rehoming decisions and practice, is an appreciation of the intrinsic value of animal life. Thus, a consideration of the moral position of laboratory animals emerges as crucial in efforts to understand why decisions are made to rehome. In fact, the majority of staff recognise that rehoming represents a practice which directly reflects the value imparted to animals. As Chris, responsible for developing a rehoming scheme for laboratory dogs, suggests:

> *"Emotionally, yeah [rehoming is] a nice thing to do. Because I think it reflects a culture of care and that the animals are seen as having their own intrinsic value […] and I think if you're going to care for animals properly in the laboratory and things then you should consider that they do have an intrinsic value"*

Imparting intrinsic value was not only important in rehoming, but had wider implications in dictating what it meant to care, and to practice sound, ethical research. Similarly, William, who works at a facility with a comprehensive laboratory dog rehoming scheme, explains how *"rehoming is all about trying to--, trying to do the best thing for the animal […] I do feel strongly that it does reinforce the culture of care."* Dan, a researcher at a facility keeping a variety of different species, also explains the link between rehoming and the drive to place animal welfare as a primary consideration.

> *"Well, I think when we rehomed the guinea pigs, it definitely fed into a culture of care. I mean, the particular staff member was quite convinced, and we agreed with her, that it was in the animal's own interests to be rehomed."*

Assigning value to animal life heightens and enriches the desire to care *about* them (Holmberg, 2011). As the primary purpose of the laboratory is to enhance human health, it is rare that actions are taken solely for the benefit of the animal. For example, though enrichment strategies can be conceptualised as care-full (Birke et al, 2007; Friese, 2013; Druglitrø, 2016), it could equally be argued that such practices are undertaken to ensure animals are unstressed, as this aids the collection of scientifically valid and rigorous research. This argument is supported by the rhetoric of "happy mice make good science" (Poole, 1997). In a similar vein, Giraud and Hollin (2016) propose that care in the laboratory exists to create obedient research subjects, to manufacture compliancy, and to ensure the end goals of the experiment are not troubled. Druglitrø (2016) discusses how, in order to transform macaques into organisms to fight polio, care was given to animals, but that ultimately care was often displayed to make the work of staff easier and more efficient. These narratives disclose that care for animals is infused with tensions and contradictions, and can often be traced back as a way to aid science.

However, the rehoming of laboratory animals does not serve any benefit to scientific investigations. Staff felt rehoming evidenced a desire to make the animal, and its welfare, a priority. Klein and Bayne (2007) reflect on an "institutional culture of care", which is built upon an "ethics-based decision-making paradigm" (pg. 3). They imply that, at the heart of such a paradigm, is the "overarching endeavour" (pg. 10) to provide high standards of animal welfare. In this caring circuit, the animal, and what is considered best for their psychological, physical and emotional wellbeing, is central to decisions and practices. The idea of a caring circuit draws upon Murdoch's (2003) call for enlarging the "circle of sympathies" to include exploited animals. He argues that the discipline of Geography is key to showing theoretically that the divisions between humans and animals are socially constructed. Rehoming to provide an affective caring atmosphere involves practices which do not serve science, and may instead result in significant facility resource output (Skidmore and Roe, 2020). It is thus a desire to care for the animal that is at the heart of a fluid care, and care then infiltrates and trickles down to people and infrastructures. The following section moves to explore how rehoming represents a form of care for animals practically through the extension and enrichment of their lives.

6.3.2 Care and the extension and enrichment of animal life

Integral to understanding why rehoming represents care for organisms involves recognising the limitations in attaining a varied and fulfilling life for animals while they are housed in the laboratory, a space in which animal welfare is intricately bound up in, and dependent upon, the demands of science. Thus, we see the potential to care for animals as contingent upon their spatial placement, and, as the following chapter will discuss, the categorical boundary animals occupy as "laboratory animals". For example, Davies (2012) discusses how efforts to enact new policies to improve animal welfare, such as rehoming, can conflict with practical, economic and epistemic framings of biomedical research (Dean, 1999; Druglitrø and Kirk, 2014). As Isobel, who works at a rodent facility, explains:

> *"They can't really express their natural behaviours in the cages we have. They can't really stand up or anything. They can't climb or anything, so they just sort of sit and sleep."*

Similarly, Olivia, who had previously worked in an animal facility, outlined how the need for biosecurity meant laboratory animal movement was restricted:

> *"[The laboratory environment] is controlled. It's hugely limited because [laboratory dogs] can't go outside in case they pick things up and it's sort of limited in terms of interactions"*

Thus, the natural behaviours of animals are suppressed in the laboratory, and, although still controlled to an extent when rehomed (as we will see in chapter six), the levels of control are relaxed somewhat when animals are no longer kept for economic or medical purposes. For example, in the laboratory, Stengers (2011) suggests that an animal's ability to 'speak back' is limited by the constraints imposed by experiments, and that this makes it difficult to communicate to scientists their own, non-human, requirements. It is consequently challenging to ensure animals can "object" (Candea, 2013) to the research undertaken on them. This process operates bilaterally; within a standardised environment, facility staff may also be limited in their ability to hear individual animals.

The lack of enrichment in the laboratory environment also impacts animal welfare. A wealth of literature tracks how humans shape animal movement, and the implications this can have (Philo and Wilbert, 2000; Bull, 2011; Hodgetts and Lorimer, 2018). Poorly designed housing can lead to suffering (Hodgetts and Lorimer, 2020), in turn affecting animal atmospheres (Lorimer et al, 2019). An absence of stimuli can lead to psychological problems; such as boredom or depression (Davies, 2010), stress

and repetitive behaviours (Wemelsfelder, 1991; Burn, 2017). Indeed, Friese and Latimer (2019) explain how the body of a mouse is emotionally "stressed" by the boredom of "living, for a very long time, in a small cage" (pg. 127). Participants thus recognise the laboratory space to limit the quality of life of research animals.

In order to overcome limitations in attaining a varied and enriched life for laboratory animals, rehoming emerges as a care-full practice, and one which has the ability to improve the quality of life of laboratory animals. While in the laboratory providing environmental or social enrichment may interfere with the validity of scientific findings, and so at times is not attempted (Bayne and Würbel, 2014), when in the home this conflict no longer exists. This form of analysis involves a careful attention to lived, sensed and felt geographies, and the diversity of encounters with differing bodies, materials and sensations (Lorimer et al, 2019). As Louisa, who rehomed three rodents from the laboratory in which she works, discusses:

> *"I got mine little hammocks and stuff. They love a toilet roll tube. They have everything. Different layers that they can climb up on, so they can express their natural behaviours."*

In fact, the difficulties in attaining a good quality of life for research animals are articulated simply in discussions surrounding the deliberate and sometimes strenuous efforts to allow animals to experience a life outside of the research facility. As Adam, who works at a facility rehoming dogs and cats, explains:

> *"We know we don't want to euthanise, so that's not an option, so the alternative is we keep it here until it dies, or we put it in a home where it can hopefully have a good life, or a better life, than it's had here, so it has a nice fire and a warm place to sleep rather than a noisy dog next to them."*

Adam implies that the 'home' environment is somehow preferable to the laboratory, introducing the idea that the capacity, and perhaps even desire to care transforms across different spaces. This belief was stronger with certain species such as dogs, who were thought to 'belong' in the home, a space in which they could flourish. As Ella, an NVS, explains *"But I think there was also pressure from staff to- most definitely- like I said this feeling that the place for a dog is in the home."* Ella goes on to explain how, when she rehomed her laboratory dog, his personality was nurtured and enriched with novel experiences:

> *"This might be 8 or 9 years after I had taken him, we moved house and we had cats, we had hens, and we had the kids, and I remember seeing him in the garden sometimes with the kids, and a cat laid out next to him, and then a hen scratching around. And I would think, it's remarkable really, to see what his life is now, how he behaves compared to what his life had been."*

The reference to "what his life had been" is crucial, and it is this comparison that enables an understanding of how perceptions of quality of life vary across different spaces. Once rehomed, Ella implies that her dog's quality of life was transformed; she deduces this from his relaxed behaviour in close proximity to a variety of stimuli. Indeed, rehoming, or more generally the act of moving an animal from one space to another, transforms animal atmospheres and thus the animal's respective social and environmental circumstances. Crucially, these atmospheres are social and collective; research finds that atmospheres of play and friendship, which can improve the quality of life of research animals, develop amongst people and their pets (Goode, 2007; Haraway, 2008). Susan, who helped to rehome a beagle from her welfare organisation, develops these ideas further:

> *"It was really nice to see him saying hello to people, getting him out in the ring, he was comfortable, and that was amazing to see because this dog had sat at the back of his kennel quivering, and had gone home with these people and had built a bond massively and was ready to just conquer the world essentially. The success stories were amazing."*

The discussion of the transformation of the animal from a "quivering" dog to one that was "ready to conquer the world" discloses a more complex narrative of rehomed laboratory animals construed as victims later transformed into loved family members. Here, animals are framed as having a 'second chance' at life in their 'forever home' (Weaver, 2013) as part of a caring discourse.

Thus far, I have traced how rehoming represents a form of care for laboratory animals through two principle means: 1) normatively, through revealing, in tension with a utilitarian care ethic, that animals have an intrinsic value whilst in the laboratory and thus facility staff go beyond the types of care advocated in legislation, and 2) practically, rehoming demonstrates the desire to provide laboratory animals with a varied and improved quality of life than they can experience whilst housed in the laboratory. Yet, by re-positioning care as fluid, the benefits of caring through rehoming do not end with the animal, but instead extend beyond. In order to further illustrate care as a fluid concept across multiple species, as opposed to a simple and unilateral relationship between a caregiver and care receiver, the following section will attend to the second strand of care provided through rehoming: care for people.

6.4 Rehoming as care for staff

6.4.1 Feel good having done good

Geography as a discipline recognises emotion as an essential aspect of the human experience (Thien, 2005), and the multi-species affective ties between laboratory staff and animals have long been recognised (Bennett and Rohlf, 2005; Holmberg, 2011; Greenhough and Roe, 2018; Friese and Latimer, 2019). Emotion and care are closely linked: Kittay (2001) proposes that it is impossible to divorce good care from its affective components. Milligan (2005) too reflects on the emotional investment in a caring relationship, which can bring reward and satisfaction to a demanding job. Yet, and as Murdoch (2003, pg. 289) argues, research has tended to focus solely on the human exploitation of animals, and not, in line with a feminist care ethic, on the "shared identity or tangible connections" humans may have to the animal other.

Yet, recognising the synergy between emotion and care is useful when applied to ethical and moral discourses. Aaltola (2004) advocates that emotions act as a base for understanding ethics. Developing this idea reveals the attribution of intrinsic value to laboratory animals not as a logical process, or one undertaken based upon shared and equal rights, as promoted by Singer and Reagan, but one based on emotion, feeling and an inherent compassion for the animal other (Plumwood, 2007). Indeed, the quality of care received depends heavily on emotion and some form of attachment to those being cared for (Milligan, 2005). Emotion continually reshapes practices in the animal house; hope exists in the laboratory; Mol (2008) explains that animal technicians constantly tinker with ways to care to promote and cultivate hope, crucial in an environment that can be emotionally challenging for staff (Rollin, 1987). Drawing on the accounts of animal facility employees, I develop this argument to posit that the kind of care displayed through rehoming also ignites a sense of hope, and equally an avoidance of the guilt and shame staff may feel when they are personally responsible for undertaking routine euthanasia. This analysis involves a consideration of the kinds of emotion and affect humans share and display toward laboratory animals, in order to trace the distribution and fluidity of care and moral responsibility within animal research. As Druglitrø (2018, pg. 653) advocates, care is ultimately a logic of the heart.

Legally, good animal care is reduced to principles including the space the animal needs, and the right temperature, ventilation, and humidity of its housing (National Research Council, 2010). Yet, facility staff demonstrate care to be more complex than this, and instead find care to rest upon an intimate attunement to animals, not as a strict obligation but as a result of shared bodily vulnerabilities. This narrative feeds on Despret's (2013) embodied empathy. Researchers and care staff routinely risk

being affected by what matters to the animals they care for. This is revealed partially through the routine affection they display toward animals in terms of tactile, body-to-body, and fleshy contact. This form of care has parallels with the stroking or patting of a companion animal (Walsh, 2009). As Anne, an NVS, explains:

> *"Sometimes with the rats, the technicians will just have them on their shoulder while they're cleaning out the cages and things like that. So, I think that's part of a culture of care"*

These shared intimate and physical bonds are displayed elsewhere. An animal technician, Isobel, explains why she rehomed three rodents she was responsible for looking after:

> *"Once I started working with the rats I would go and take one of the pups from the cage and put them in my pocket, and take them around while I did health checks. There were only three, and I kept doing it every day until they got to weaning age, and I thought, 'I don't even know who you are– let's see', and they were all boys and I fell in love with them. And I just thought, they're not going to be used, and eventually they were due to be culled and I was like 'nooo' and so I took them home."*

Indeed, these emotions are not only embedded in the acts of daily care for laboratory animals, but also extend and have a crucial role in rehoming practice. Those working in animal facilities commonly reflect on personal feelings such as joy and pride after a successful rehoming. As Charlotte, a facility manager, explains:

> *"Another couple that we're very very fond of took two [cats] as well, and they actually built a wee garden outside for [the cats], stuff for them to climb on and grass – they sent us a video of their new abode, which is, you know, it's lovely to see. These cats had never put their foot on grass before. It was --it was so good. That's a great feeling. I felt that as a centre we had done something really really brilliant."*

The passage above brings to life the emotional benefits of rehoming. Charlotte reflects on the benefits of rehoming for herself – rehoming provides her with a "great feeling" – but also across the entire "centre", where she reflects they had done something "really brilliant". This demonstrates how care flows from animal, to individual, to wider establishment, simultaneously revealing the narrative of a fluid care, and illuminating the complexities in attempting to segregate care for the animal from care for oneself. In this research, rehoming signified a way to 'give back' to animals, and this was extremely beneficial to staff morale.

Other authors have drawn on the idea of human redemption in multispecies relations; Sutherland and Nash (1994) explain how, using the lens of the animal rights movement, a community of people are created who seek redemption through the act of saving animal lives. The authors suggest that "the only humans worthy of redemption are those who speak for the voiceless and act as protectors of animals" (pg. 182). Irvine (2013, pg. 21) explains that animals function well as vehicles of redemption because of imaginations of them as innocents, standing as "silent witnesses to our behaviour". Their dependence on humans too offers a way in which to express care and "speak for", mobilising the human as a moral agent. Animals in this narrative emerge as a vehicle of hope. Indeed, even if only a small number of animals are permitted for rehoming, staff reflect on the emotional benefits of the practice. As Alice, a vet, describes:

> *"I did do some work with some mice recently, and I think it was 5 mice that were going to be rehomed out of like 100…. It was nice. You know, we'll lose the rest, but these ones are going to be okay. I think it's still beneficial for staff."*

Louisa, an animal technician who rehomed four rats she previously cared for in the laboratory, also describes how, for her:

> *"It's nice to know that some of them can have a nice life after. Mine were destined for culling, so it's nice that I've saved them-- that I've given them a nicer life."*

Louisa feels personal pride in her "saving" of the laboratory animals in question. Outside of the world of animal research, studies reveal the positive impact of adopting rescue animals on the mental health of the new owner, especially when animals are construed as victims that are saved, and later loved and integrated into family life (Taylor et al, 2004; Weaver, 2013). The same holds true in the laboratory setting, where, as a result of acting on an ethical impulse to care, facility staff felt gratitude that they had been able to provide the animal with a second chance outside the walls of the laboratory. This existed if the member of staff had a role in facilitating the rehoming, but was amplified, and care's fluid components enhanced, if the staff members were able to rehome the animal personally, as in the case of Louisa and Anne.

As well as good care being integral to the attainment of high standards of animal welfare, care also allows those working with animals to "flourish" and "thrive", imparting a sense of hope in a morally challenging environment (Sharp, 2017; Druglitrø, 2018; Davies et al, 2020). Crucially, by imagining care as fluid, it is possible to visualise a form of care that flows, but rarely ebbs away. Instead, the

stories of rehoming continue to be shared, and these intimate narratives are shaped and are passed down even to staff who have not been personally involved in rehoming. They create affective atmospheres in which care and its wider benefits circulate freely. However, and as the final empirical chapter will show, exploring the flow of this care to spaces outside of the laboratory is complex, and despite a general perception that the public would support rehoming, facility staff still worry that the public may be sceptical of the practice due to the wider suspicion of animal research, and reservations regarding whether care can be shown in the laboratory at all.

6.4.2 Rehoming as a way to avoid moral stress

After research is completed, the vast majority of laboratory animals are euthanised (Franco and Olsson, 2016; Skidmore and Roe, 2020), which, if the animal is suffering, can be conceptualised as an act of care. However, especially when euthanasia is undertaken as a practicality, emotions cannot be divorced from the act of taking a life. It is ATs who are typically responsible for routine killing; Birke et al (2007) suggest that technicians are not so invested in the research and are not required to uphold an objective detachment from the animals, leaving them particularly vulnerable to 'being affected' through multispecies entanglements and "seeing and feeling another" (Friese, 2019, pg. 288). Linking back to the attribution of intrinsic value (Frey, 1988), what makes killing emotionally painful for staff (which in animal research should mean the animal is free from pain and suffering - (Morris, 2012)) is that it involves the destruction of something considered valuable. Rehoming therefore, although beneficial for researchers, is arguably of more significant value to ATs.

Routine euthanasia instead reiterates, for some, the contested belief that death does not represent a welfare issue (Franco and Olsson, 2016). If euthanasia is justified given the animal's life is not worth living, it could equally be argued that animals should not be killed if they have a life worth living (Yeates and Main, 2009). As well as introducing a moral and ethical argument for rehoming, this also reveals one way in which facility staff may feel circumventing euthanasia constitutes a caring practice.

Herzog et al (1997b) explain that with guilt comes the possibility of redemption, and the idea that a different practice (in this case, rehoming over routine euthanasia) may constitute a more morally compelling course of action. The Oxford English Dictionary definition of redemption is "the action of saving or being saved from sin, error, or evil". It can be applied to delivering an animal from suffering, pain or distress (Irvine, 2013), or equally extending and enriching animal life through rehoming. In order to help overcome feelings of culpability and powerlessness, staff explain that rehoming helps them to act practically on the empathy and compassion they feel toward laboratory animals. Indeed,

participants reflect on the shame entangled in the act of euthanising healthy animals. As Sophie, an NIO at a facility keeping a variety of species, explains:

> *"People generally don't want to euthanise a healthy animal. You know, it goes against all of our- you know- all the people that work with animals are welfareists at heart, otherwise we wouldn't be working with animals if we didn't love them."*

Sophie explains that facility staff "love" animals, in fact, that very love constitutes part of what motivates them to enter the profession. Therefore, the practice of euthanising healthy animals goes against their individual ethical code, and can induce feelings of guilt which can be alleviated through rehoming. As Freya proposes,

> *"I wouldn't want anyone working for me that liked animal research. I want a bunch of animal lovers. But then if you're too emotive you would struggle. Because it is a tough industry to be in, and rehoming definitely makes you feel better about it."*

Theorising the intersection between care and morality (the latter being a framework used to judge the right, or ethical, course of action), Milligan and Wiles (2010) describe how care can benefit the provider through avoiding or alleviating shame. Facility staff reflect that rehoming saves animals from perceived 'evil' (euthanasia), but also themselves from feelings of guilt and shame entangled in the act of killing. Referring back to the fluid dimensions of care, I argue that care can consequently flow into facilities and drown out the guilt and shame related to the routine euthanising of laboratory animals. As Sharp (2018) explains; through rehoming, one is also 'salvaging' a life, an action informed by an unspoken moral drive to prevent animal suffering and provide the highest quality of care. As Anne, an NVS at an animal facility, explains:

> *"They were excess ones [surplus to experiments] and some of them-- it's because they were used for hearing studies and they had pink eyes, so they're pigmented guinea pigs […], and so they couldn't be used. And some of the others just got too big for the experiment, and so I ended up feeling sorry for them."*

Anne describes how she felt "sorry", and thus pity, for surplus guinea pigs scheduled to be euthanised. The "moral stress" (Rollin, 1987) experienced by those associated with the euthanising of surplus animals tends to be higher when euthanasia is a practicality, revealing cultural and economic narratives surrounding unnecessary waste and how they play into laboratory practices. As Dan explains: *"surplus is something that carries negative connotations. I think we'd all agree on that. So*

rehoming is all about avoiding that otherwise negative ethical stance." In a move to prevent this waste of animal life, Anne decided to rehome seven guinea pigs, and describes how she feels doing so demonstrates that *"[facility staff] care about what happens to [laboratory animals] afterwards".* She goes on to propose that, *"if the animals can go somewhere else then I think that—yeah, that's nice for everyone to be involved in."*

In an ethically challenging environment where animals are systematically harmed and routinely euthanised for human benefit, rehoming represents a new way to care *about* the welfare, and lived experience of, laboratory animals. Yet, as a result of the deeply entwined bonds between animal and carer (Bayne, 2002), the practice also positively impacts staff well-being. This draws upon Haraway's (2008) notion of "shared suffering", but implies it can also hold true when animals are alleviated of suffering, thereby lessening the emotional distress of facility staff. The result is a 'shared joy', which reveals the fluid nature of care, and how it flows, circulates and crosses borders between human and non-human bodies. The final section outlines how a fluid care can 'pool' in certain animal facilities which engage more commonly with rehoming.

6.5 Rehoming as care for the facility

6.5.1 'Pools of care'

Although this chapter has thus far revealed the fluidity of care across both human and non-human spheres, the care displayed through rehoming also seeps into, and is felt across, spaces and cultures, which then permeates to bodies connected economically, culturally and socially to that space. This section now moves to attend to how care is, through rehoming, both performed *by*, and *for*, the facility.

In order to explore the idea and development of specific and situated 'care pools' within animal facilities, I draw on Milligan and Wiles' (2010) concept of 'landscapes of care', which provides a useful analytical framework through which to interrogate such ideas. The authors explain that care is grounded in socio-economic, structural, temporal and organisational spatialities, which change the way in which care is understood and experienced. Milligan and Wiles (2010) draw on the need to understand both macro-level governances and social arrangements that flow throughout both international and national circuits, but also in the micro landscapes of care, including the hospital,

nursery, and home. The authors do not expand these ideas into the non-human circuit, nor spaces such as the animal laboratory.

I also draw on Ben Anderson's (2009) concept of affective atmospheres. Anderson reflects on the dynamic qualities of atmospheres, which can at once feel 'calming', 'relaxing', 'comforting', 'tense', 'heavy', or 'light', and can both animate or dampen the 'background sense of life' (Stern, 1998, pg. 54). Atmospheres are never finished, static or at rest. Atmospheres are always in the process of emerging and transforming. They are always being taken up and reworked in lived experience, becoming part of feelings and emotions connected to that atmosphere. However, Anderson neglects the infrastructures and bodies (both human and non-human) involved in the creation of these very atmospheres. Indeed, atmospheres do not simply form of their own accord; they are a product of those that reside within the atmosphere, and the policies, practices and performances these agents (re)produce and undertake. I find that rehoming cultivates hopeful and compassionate atmospheres, and offers a practice which resists dominant discourses in science that imply objectification, standardisation and rationalisation. This final section will reveal how caring practices, such as rehoming, originate from the ways in which facilities uniquely interpret their ethical responsibilities, which in turn affects the performance of care and facility atmospheres. In other words, rehoming, and the concurrent influx of care which accompanies the practice, becomes crucial to the identity and ethos of facilities as they then attempt to build and foster their unique cultures of care.

Many of those working in animal facilities explain that rehoming is ultimately an institution's prerogative, and thus decisions on how best to practise care are ultimately made at the facility rather than the individual level. However, as Chris asserts that he believes *"rehoming will be down to institutions really, and people just encouraging their institution to do it",* and that *"that's the way it's always been really",* he implies that facility staff possess the capacity to influence the ethical stance of their establishment. This suggestion also helps to demonstrate how the desire to care is fluid, and flows from individual members of staff to influence institutional atmospheres. Similarly, Peter proposes that rehoming decisions have to be made "as an organisation"; further highlighting the role rehoming has in building the ethical identity of a facility:

> *"So [institutions will] have to put all those things together and make the decision as an organisation. I think the key thing is to be clear on why you do or don't want to rehome."*

The ways in which care manifests vary across different facilities because the potential to care, and ways in which to perform it, are dependent upon the norms, values, labour, and animals kept at each facility. Further drawing on the geographical metaphor of fluidity, I thus posit that the fluid care

shown through rehoming 'pools' in higher concentrations in certain facilities. I find that whether or not a facility participates in rehoming feeds into the development of their affective atmospheres, which crucially represents a form of care for facilities.

In establishments where rehoming was more common, staff raise animals to be rehomed, and are permitted to have a different relationship with the animals that resisted their routine standardisation and enforced detachment of emotion. In these facilities, as well as representing a research tool, animals are also considered pets and constructed as 're-homeable'. This results in the circulation of a different affective relationship with animals: one that permits a relational, embodied, and affective way in which to practice care. This in turn allows staff to act on personal, ethical and moral imperatives, such as rehoming a specific animal with whom they have developed a bond, and taking pride in the ethical identity of their facility.

Care, emotion and affect are consequently crucial components of the complex moral economies and philosophies of individual facilities. Indeed, Peter proposes that the practice and performance of care originates from the unique way in which facilities interpret what constitutes ethical practice:

> *"So I think from an institution's point of view we're trying to be as ethical as possible and we're trying to rehome and stuff and that's what we think we should do [….] It's right for the institution to try and do it."*

Amy, whose facility had established a comprehensive rehoming scheme, discusses a collective 'we' when explaining the facility-wide prerogative to avoid euthanasia and allow animals to experience a home:

> *"We feel it's important to [rehome]. We would like every animal possible to experience a home. And if there's a way we can facilitate that then—and, at the end of the day, it's expensive to keep animals here. So it's not necessarily more expensive to support them in a home than it is to keep them on site, and then they get to have that home experience."*

Demonstrating the ingrained nature of rehoming policy, and the ways in which flows of care also have practical implications in the transformation of science and regulatory activities, Adam, who works at the same facility, asserts:

> *"I think if we got to the position where we said it's unlikely we can rehome these fish, then we probably wouldn't do the research. That's just part of the way we operate."*

However, this view is unique to specific facilities, and is certainly not consistent across all establishments. Although it is crucial to attend to how rehoming contributes to the maintenance of affective caring and hopeful atmospheres, it is equally important to recognise that the kind of care shown through efforts to rehome is not static across facilities, and instead there exists a diversity of institutional attitudes in response to rehoming. For example, Chloe, the manager of an animal facility, explains:

> *"If you can only rehome a few, then it's actually not going to make a big difference. And where do you go, how do you go about doing that? Rehoming them? And also it's quite a lot of paperwork with the Home Office and the vet and it seems like--, not that that's not a reason to do it, but when everyone is so pushed and you're prioritising everything, legislation and to keep licensing and keep everything moved, it probably won't be your priority, and that's the truth."*

For Jenny's facility, unlike Adam's, rehoming is not prioritised. Jenny rationalises her decision not to attempt rehoming because she feels that doing so with so few animals would not make a significant difference (though those facilities that do rehome reflect on how 'saving' just a small number of animals offers significant psychological and emotional benefits to staff). Jane, who works at a rodent facility, also draws on the large numbers of animals used in experimental research to justify why her facility does not participate in rehoming:

> *"I mean there's quite big numbers. You know, we breed over 6 figures every year. So it would be difficult to choose which to rehome. Yeah, and lots of [the animals] would be used in experiments and lots of them would, I mean, usually the mice that have gone through experiments have to be euthanised for their tissues at the end anyway. So you might need their liver and kidneys in those scenarios. […] Yeah, so for a lot of them euthanasia is necessary. So for a lot of them we keep them to the end of their healthy breeding cycle which might be six or nine months. Lab mice may live up to two years, but they're pretty unhealthy by the time they're that age. So, you wouldn't want to rehome anything that is over one year old because, I mean, it would be going down hill if you like."*

It is therefore possible to see how the kind of care rehoming instils, which is performed both *by* and *for* the facility, is not fostered at all establishments. Although rehoming creates wider institutional caring cultures, the care demonstrated through rehoming 'pools' at certain facilities, and seemingly eludes others (which, in line with findings of chapter four, typically keep large numbers of rodents

such as mice and rats). The kind of care expressed through rehoming, which is evident in the pride and morale boost that it offers, does not flow through to all people, animals or establishments.

The fluid care I discuss in this chapter therefore 'pools' at some facilities, and, for these facilities, the benefits are numerous. For example, if staff believe they are acting on ethical and moral responsibilities, then this represents a form of care for those connected to that space, as affective atmospheres are transformed and hope, love, empathy and compassion fostered and integrated into facility life. Peter's idea that the staff at his facility attempted to "be as ethical as possible" suggests that care in some way is performed (Holmberg, 2011), and that this performance both shapes and is shaped by facility atmospheres and senses of responsibility. This analysis has parallels with Friese and Nuyts (2018) understanding of how culture shapes the ways in which the ethical frameworks of the 3Rs are transformed as they travel.

For example, the overarching regulations in place to guide animal research were transformed at some facilities that encompassed rehoming practice into their individual facility cultures and philosophies. As Amy explains: *"We would like every animal possible to experience a home […], which is a key part of our kind of ethos and how we work."* Similarly, Ella, an NVS, discusses a collective "they", and references how, at her facility, animal care was a principal consideration: *"Where I worked they did go above and beyond in terms of looking after the dogs".*

This reveals that facilities which have embedded long-term rehoming programmes into their facility ethos are proud to share their experiences of working at an establishment that they feel has truly understood and fostered a culture of care, and reflect positively on the care these policies foster for all at the establishment. This is important as Carbone et al (2003, pg.41) suggest that adoption should be an "institutional commitment", and "heralded as an integral component of an institution's commitment to humane animal care and use". Rehoming, and the consequent flows of care, can therefore be conceived as transformative. The practice alters what it means to care, and shifts cultural attitudes and practices. Rehoming creates additional professional roles (one facility had a staff member responsible specifically for coordinating rehoming), results in costs to rehome being encompassed into initial grant proposals, and can even result in the prevention of research in situations where rehoming will not be possible afterwards. Some of these facilities, which more commonly house traditional companion species such as cats and dogs, have 'rehoming rooms', which physically mirror a family living room or kitchen. These rooms enable socialisation of laboratory animals from a young age, effectively preparing them for a life after the laboratory. At such facilities, rehoming is ingrained in facility cultures, and forms a crucial component of wider research aims and policies. Facility atmospheres thus dictate how care is felt and managed; affect is materialised

through built architectures (socialisation rooms), regulatory structures (no euthanasia policies), scientific practices (not undertaking certain types of research if rehoming is not possible afterwards) and even funding procedures (calculating rehoming costs into initial grants). This reveals the importance of undertaking practices considered to be 'care-full' (Buller and Roe, 2012) in shaping the atmospheres in which care is practiced.

Echoing de la Bellacasa (2012), there is a need to ask how to care in each situation, in each facility, and ideally with each individual animal. Care is grounded in the 'inescapable troubles of interdependent existences' (De la Bellacasa, 2017, p. 70), which, as Gorman and Davies (2020) suggest, may manifest differently within separate institutional cultures. As Amy suggests, the ethos and identity of facilities harbours important implications for 'how [staff] work', and, by extension, perhaps even how they ultimately feel about that work. Different facility atmospheres develop based upon the unique policies and practices of establishments. In facilities which commonly rehome, pools of care develop, in turn creating hopeful and compassionate atmospheres, which circulate uniquely to benefit the humans working, and animals kept, at the facility.

6.6 Conclusion

This chapter has built on previous work in the social sciences which examines why and how humans come to care for the animal other, and how, in turn, this can improve the lived experience of laboratory animals (Greenhough et al, 2011; Davies et al, 2018; Greenhough and Roe, 2018; 2019). It has probed understandings of care, but re-imagined them as fluid by exploring laboratory animal rehoming. A more fluid conceptualisation of care is needed because, although previous work has recognised the existence of a shared care (Sebern, 2005), and the need to practice care for many aspects (across science, technology, animals, and people) in the laboratory (Mol, 2002; Druglitrø, 2018), research typically focuses on benefits to the care receiver, and not those to the care provider. This produces a static and unidirectional understanding of care, which this chapter has revealed is oversimplified and risks obscuring complex entanglements across species and spaces. In the words of Haraway (2016), we need to make a concerted effort in multispecies scholarship to 'stay with the trouble'.

This chapter reaches several conclusions by examining how care, in its many forms, is invoked, performed and flows through decisions to extend animal life in the laboratory. However, complexity is embedded in these relations; thus it is crucial to attend to how care flows dynamically across a wider nexus of spaces and bodies. For example, as Dillon (1992) acknowledges, it is necessary first to recognise the intrinsic value of something before it becomes possible to care not only *for*, but also

crucially *about* the animal. Similarly, it is only once the value of animal life has been recognised that staff feel a duty to consider and improve their welfare (Honess et al, 2004). Finally, once a facility has established a caring culture, positive affective atmospheres flow, which improve multi-species emotional wellbeing. Care thus circulates, and both impacts, and is impacted by, multispecies bodies, regulatory processes and infrastructures. Care is captured in certain facilities, and pools, creating wider affective atmospheres of hope, compassion and even love in an environment that may otherwise be associated with suffering, harm and pain. The more facilities participated in rehoming, the more care amplified, and the benefits of this care seeped, trickled and permeated to others. Crucially, rehoming does not have to be attempted frequently and with many animals; instead care through just one successful rehoming filters through and benefits animals, people and infrastructures, and does not ebb away easily. It creates folklore as it is passed from person to person through word of mouth, creating and augmenting caring facility cultures and becoming crucial to ethical and moral identities.

Friese and Latimer (2019) discuss how both embodied and institutional animal care practices affect facility staff, producing a form of joint cross-species occupational health. This assertion is developed in this analysis by revealing entangled and fluid natures of care. Care persists after rehoming through stories. It extends and permeates, yet is also in a delicate balance with wider scientific demands. Of course, care exists in facilities where rehoming does not take place; but with rehoming a different form of care flows and seeps into and across spaces and multispecies bodies in a way that benefits animals, leaves staff feeling fulfilled, and creates caring cultures and affective environments. It is crucial here to note that care also leaks out beyond the laboratory walls; as Döring et al., (2017, pg. 133) point out, rehoming dogs and cats can help to address the "high level of public concern about the fate of such animals". Given the growing interest in ways to develop and enhance a culture of care (Davies et al, 2018), this chapter sheds a timely light on how cultures of care are interpreted, realised, and improved through novel practices in the laboratory. Through rehoming, a different set of care regulation and duties toward animals circulates, reshaping the political and imaginative spaces in which care, hope, empathy and responsibility are practiced.

The following chapter moves to explore how rehoming is enabled and the tangible, psychological and cultural processes through which the laboratory animal assume the role of a pet.

7. Chapter 6 - ‘Making pet’: Employing boundary work to explore the transition from research instrument to family companion

7.1 Introduction

As a rehomed laboratory animal moves from being considered what Lynch (1988) famously termed a “scientific tool” to a loved companion animal, a wider symbolic change is initiated in the value and socio-legal status attributed to it. Exploring this concept necessitates a critical interrogation of the construction of boundaries and borders that frame the relations humans have with animals. Using the rehoming of laboratory animals as a case study, this chapter will probe and unpack these constructions, and answer the call not only for understanding the construction of boundaries, but also crucially the ways in which such boundaries might be transgressed.

As explained in the literature review, boundary-work, a term coined by Gieryn (1983), was originally used to describe the process by which borders are drawn around what constitutes the privileged category of science and what does not. The concept has since been employed more generally to demonstrate the construction of symbolic borders around themes, people, places, objects and ideas in order to establish what ‘fits’ into socially accepted ideals (Davies, 2000; Sage et al, 2016). This chapter will expand this definition to include the animal.

Further, this chapter answers the call to study boundary crossing, shifting, and the politicisation, relocation and institutionalisation of boundaries (Lamont and Molnar, 2002). The example that will be most frequently discussed in this chapter is transformation of the laboratory animal into a pet. The Oxford English Dictionary definition of the word pet is “an animal that is domesticated or tamed, and kept as a favourite, or treated with indulgence or fondness”. More loosely, it is a term that describes animals kept for no obvious economic or practical benefit. This represents a clear departure from the animal’s previous identity as a laboratory animal, whose purpose is to further human (or possibly animal) health. This chapter will discuss how domestication processes (primarily socialisation and training) facilitate the production and making of the new ‘pet’ animal, and the complex ways in which individuals act both toward and with the laboratory animal as it is prepared for, and acclimatises to, its new identity. Exploring boundary-making processes is also crucial in providing a theoretical base through which to effectively probe the regulatory, affective and cultural factors at play when

laboratory animals are rehomed. Here, the laboratory animal is the boundary object that demonstrates how other practices, policies and perceptions change and modify as the animal is rehomed. The rehomed laboratory animal thus represents both a transitionary object, and a process which demonstrates how human affection, uses for, and attitudes toward animals can change as their identity undergoes transformation.

Although previous work has identified the multiple subjectivities, and thus liminal status, of animals in terms of their being considered "edible, palatable, useful, good company, vermin, nice to touch, or intelligent" (Anderson, 1997, pg. 478), this chapter will show how individual animals can span multiple subjectivities at once, as well as reveal the processes by which such transgressions occur. I will demonstrate 1) how boundaries (including that of 'pet', 'laboratory', 'wild' and 'farm' animals) are actively constructed around research animals by those working with them, 2) establish how such boundaries are transgressed through processes such as socialisation and training, and 3) discuss the implications of boundary transgression in the behaviour of the animal, how human-animal relations transform when the animal is moved to the domestic human home, and how rehoming can symbolically shift the ways in which the animal is viewed. However, and as the final section of this chapter will explain, caution should be exercised when simplifying these boundaries, as they are inherently complex.

7.2 The construction of boundaries

Before analysing the processes by which animals transgress boundaries, it is necessary first to attend to the boundaries that were actively constructed by those working with experimental animals. Boundaries were continually drawn and re-drawn around the role of laboratory animals, as well as that of the laboratory itself. I argue that such constructions serve as a way to make sense of laboratory life, including both the function of the laboratory, and that of animal lives within it. Boundary distinctions also inform the types of relationships it is appropriate to have with laboratory animals as they move both across and within socially constructed and material spaces.

7.2.1 Laboratory animals and pet animals

Firstly, boundaries were actively constructed around the identity and status of "laboratory animals" and "pets". As Amy, responsible for coordinating a rehoming scheme at a research facility, explains:

"As much as we recognize that we're a research centre and that they are research animals, we also try very hard to treat them like pets, and I guess, as a pet, that's what we would like them to experience at the point where we no longer wish to use them for research. We treat them as a pet, so why wouldn't we try to put them in a pet environment?"

To Amy, animals are grouped as 'research animals' or 'pets' based upon their use: animals are deemed 'research animals' when humans "wish to use them for research". They can thereby transcend such boundaries when this use and purpose to humans is no longer required. In effect, they are then able to adopt a new identity and 'become pets'. However, there are uncertainties, and consequent complications, arising in boundary-making processes, rendering static categories of pet and non-pet overly simplistic.

Indeed, several factors warrant consideration in exploring the potential for an animal to 'become' a pet. William, a researcher at an animal facility housing a variety of animals, including dogs, suggests certain species may be predisposed to undergo this transformation of status. William argues that companion species more typically kept as pets in the Western world are more likely to be rehomed:

"I don't think there's a huge number of people who keep pet rats and pet mice and therefore volume-wise there's no chance of a significant proportion being rehomed in my view. Whereas as you move towards, shall we say the more 'normal' pet category, you potentially can rehome a greater and greater number of those-- a greater percentage. And I don't think it's--, I just think it's a perception of them being pets".

By discussing movement "towards the more normal pet category", William hints at the permeable nature of boundaries that categorise what constitutes a pet (Jones, 2009; DeMello, 2012). Even if an animal is deemed a pet, certain species are considered to be more "normal" occupants of the boundary, while others may teeter on the periphery of such categorisations.

As well as species, space is also important to consider in debates which deliberate why, and how, animals are deemed to be pets, research animals, or both simultaneously. Jane, a researcher at a rodent facility, explains how:

"When we had the animal rooms, it wasn't unusual for ATs to have pets. You know, to keep a cage of mice with an interesting phenotype, or just a cute one that they liked the look of. So one of them would just have a cage of them that they kept as pets. […] But they had to stay in the animal facility."

Jane explains that, if an animal was of an interesting phenotype or aesthetically appealing, ATs may set the animal aside from euthanasia and treat it as though it were a pet (Bayne, 2002). Thus, animals do not necessarily have to leave the laboratory space in order to be considered a pet animal. Instead, a designated 'pet cage' provides a material and tangible border that dictates different categorisations, and therefore also varied treatment and levels of care.

Indeed, it is clear that the categories to which animals are designated results in different conduct toward, and handling of, the animal: both Amy's and William's responses suggest that animals viewed as a pet would receive privileged treatment as well as the avoidance of euthanasia. Amy also implies that, by treating the animal as a pet while it resides in the laboratory, its eventual placement into a home after research has concluded is enabled, and even encouraged. Thus, the symbolic identity given to the animal has practical implications regarding life for the animal post-research.

Simultaneously, there exists an acknowledgement that research animals will never truly be pets whilst kept in the laboratory. Indeed, despite the laboratory being a material space, its symbolic representations dictate levels of care afforded to animals. Participants reflect that the capacity to love in the laboratory is limited in comparison to having an animal in the home as a pet. As Olivia, the manager of a rehoming organisation, describes: *"I'm sure that the people that work with [laboratory animals] really love them, but it's not quite the same as having a dog in your home, a pet dog."*

Similarly, Louisa and Isobel, both animal technicians who rehomed laboratory rats, discuss the home as a space enabling greater levels of individualised care for animals. As Louisa explains, *"at home you can get them out and play with them more."* Isobel agrees:

> *"Once you get them home that's it, they're yours. No one else is going to be looking after them. You know, you don't have that set cleaning regime, and you can get them out whenever you want, do whatever you want with them"*

Hence, boundaries are actively constructed around pets and laboratory animals that relate to the space in which they are kept. Participants reveal differences in the capacity to care and provide affection between the spaces of the animal house and the home. Additional efforts can be made in the laboratory to treat the animal as a pet, but Amy acknowledges that this is perhaps atypical for a "research centre". Indeed, once placed in the human home, it is possible to freely "love", "play" and "get [the animal] out more". Thus, when both the physical boundaries of the laboratory, but also symbolic borders attached to an animal in this space, have been removed, the value attached to the

animal, and the interactions it is possible to have with them, undergo drastic and unexpected transformations.

7.2.2 Laboratory and 'wild' animals

Boundaries are also actively constructed which segregate laboratory animals from wild animals. Wild animals (or at least those perceived to have an inherently wild nature) are viewed as less 'tameable' through domestication practices and therefore are not rehomed in the traditional sense to private homes. Megan, an NVS, explains how, when looking to rehome laboratory marmosets, it was important that the new owner would:

> *"Treat them like marmosets, because a lot of people, when I rehomed, said "ooh can you cuddle and stroke them" and you're thinking 'but they're marmosets' […] Anyway they're not really suitable as pets. You have to keep them as marmosets kind of thing."*

She thus reflects on the need to maintain the "wildness" of certain species and therefore not permit human physical contact in the form of 'cuddling' or 'stroking' that might be associated with typical companion species. Megan implies that these practices may instead detract from the 'wild nature' of these animals, damaging their intrinsic qualities. Primates, including marmosets, are not typically domesticated, and instead efforts to rehome them (typically to sanctuaries) tend to be framed as rehabilitation or retirement. This is in contrast to laboratory mice, which are reliant on humans (Davies, 2012). Thus, participants reflect that their capacity to survive in the wild is limited. As Freya, the manager of an animal facility, outlines: *"So we could rehome them to the zoo, or to the wild. But then they're laboratory mice, they're not going to survive are they?"*

Finally, animal aesthetics were found to be important in the boundary construction process. As Peter, the manager of an animal facility, explains:

> *"I used to work for a breeder so we used to have all sorts of different colours of lab rats and the brown ones are just too brown. They're too wild rat looking for me. And I've got three in my garden, so I don't need anymore."*

Thus, Peter expresses his negative perceptions of laboratory rats that are "too wild rat looking". To be rehomed, therefore, animals may be required to possess aesthetic appeal. Consequently, animals that look 'cute' (or, in Peter's view, have a more colourful coat) may be more likely to be considered pets

(Lorimer, 2007). Similar to discussions surrounding the ability to care for laboratory animals while they are kept in the facility, the above quotes also evidence that the space in which the animal resides (i.e. "my garden" "the home" or "the lab"), is important in dictating perceptions of animals.

7.2.3 The role of the laboratory

As well as space being crucial to an animal's symbolic categorisation, this process is symbiotic, and the role of such spaces are also categorised, which in turn affects the animal lives kept in them. For example, participants reflect that culturally the laboratory space has a clear and defined role, and rehoming does not sit well with these expectations. As Chris, responsible for co-ordinating a dog rehoming scheme, reveals:

> *"I think, probably with the smaller species, like rats and mice, and the fish, it's probably the sheer volume. You might find yourself, you know, almost behaving a bit like a pet shop, and then you won't have quite the same control over your rehoming policy and process because of the sheer volume."*

Freya, manager of animal facility, also explains the difficulties of the laboratory fulfilling a role not within its remit:

> *"There are space issues. You know, we've got 16 guinea pigs here, and they're all lovely […] So you give [laboratory staff], say, a month to rehome them, but in the meantime—that space is needed for research or teaching or whatever. You know, it's not a petting zoo is it?"*

Thus, participants express concerns with the laboratory engaging in an activity (rehoming), which would transform its role from a scientific establishment to a "pet shop", or "petting zoo". When rehoming is attempted, the laboratory is re-made as a hybrid zone or boundary space (Edwards, 2005). Rehoming therefore also demonstrates the potential of the laboratory to perform and embrace alternative framings, and reveals it as a space in which ethical practices are implemented which transform static conceptualisations of the laboratory solely as a space for science.

7.3 Enabling transition – becoming pet:

Leigh Star (2010) notes the importance of investigating "backstage" work when exploring the processes by which an object, idea, animal or person, moves from one boundary to another (as in rehoming where laboratory animals are moulded into companions). Bökönyi (1989) conceptualises domestication (a process necessary for equipping laboratory animals for life in the human home) as the start of a symbiosis requiring at least two partners (here, between the laboratory animal and the trainer). There are a number of practical ways in which humans domesticate non-human others in order to attain acceptable 'pet' behaviour. This chapter will attend to practices of socialisation and training specifically. Existing research on the rehoming of laboratory animals judges the success and effectiveness of rehoming schemes (Carbone et al, 2003; DiGangi et al, 2006; Döring, 2017), but does not critically explore what these tangible practices can reveal regarding complex human-animal relations. This chapter attends to these gaps in knowledge, and will reveal the symbolic, embodied and performative processes encompassed within routine efforts to train and socialise laboratory animals, and crucially how schemes are 'tinkered' to the animal to recognise them as individuals with distinct personalities. The following section explores why the training and socialisation of laboratory animals is considered necessary in order to rehome.

7.3.1 The controlled nature of the laboratory

Birke et al (2007) suggest that there is an irony in the fact that the 'nature' scientists study is scrupulously removed from research facilities. Life in the laboratory is constant and controlled, with little variation in stimuli. As Knorr-Cetina (1983, pg. 119) suggests, "nowhere in the laboratory do we find nature or reality which is so crucial". Wild versions of the laboratory animals (and the diseases they might bring) are deliberately kept at bay (Birke et al, 2007). The people with whom animals interact are dressed in personal protective equipment and white clothing. The laboratory animal is thus a product of science, bounded and defined within the laboratory space itself.

Thus, if an animal is to be rehomed, it will inevitably encounter new sights, smells, sounds and tastes upon leaving the facility. It is unlikely that laboratory animals will have interacted with children, cars or animals outside of their own species (LASA, 2002). From a veterinary and behavioural perspective, in order to be rehomed successfully, the animal must demonstrate that they can adapt to novel stimuli. LASA (2002) propose that animals should be assessed by testing reactions to a wider variety of people (i.e. both sexes, individuals with facial hair or glasses), tactile objects (tiles, carpets, grass and balls/toys), as well as audio acclimatisation (including the sound of a washing machine, hoover, or

traffic) (Home Office, 2015a). It is through the practical exposure of laboratory animals to novel materials and settings that the degree of permeability of the boundaries surrounding its identity as a laboratory animal are revealed.

Despite the challenges of understanding the life history of laboratory animals, participants speculate that these animals, similarly to "farm dogs" and "racing greyhounds", would experience a lack of preparation for life in a human home. As Olivia, who manages a rehoming organisation, outlines:

> *"You can see exactly the same thing from puppy farms, racing greyhounds, if they've lacked that socialisation, a home life, even dogs that have been farm dogs, they still might not have ever lived in a home environment. They might not have ever seen a washing machine, be used to cars and traffic, and just sort of day to day family life. […] They are generally used to seeing specific individuals, usually in particular scrubs… or just particular clothing, so anything different outside of that is a bit like 'woah'. I've never seen a person in a hat before!"*

Susan, assistant manager of a rehoming organisation, also explains how laboratory animals have limited experience with stimuli outside of the laboratory walls:

> *"Handling-wise some were a little bit more nervous. You'd open the door, they'd never been on grass, you know, they'd never experienced traffic or general people, and it was a lot harder for them to come round. But they did eventually. We just needed to have the right home with people that were willing to put the work in"*

The phrase "come round" relates specifically to the domestication process. By 'coming round', the animal is trained to acclimatise to novel environments and embrace its new identity as a pet. But such a phrase also hints at initial resistance on the part of the animal regarding full acceptance of a new identity, which raises an important question concerning whether animals possess agency in objecting to becoming a pet. McFarland and Hediger (2009, pg. 18) argue that "choice is part of what defines agency" among animals. Indeed, animals may resist domestication (Bökönyi, 1989). After all, Porter (2019) asserts that, through domestication, animals are trained to alter their reactions to situations and stimuli that may render them vulnerable. Yet, if animals cannot display appropriate behaviours for a pet, their agency resists the expectations of 'responsible ownership' and predictable and controllable behaviour in companion animals (Fox and Gee, 2019).

7.3.1.1 Socialisation

In order to ensure that animals adjust to pet expectations, and overcome issues associated with limited life experiences, socialisation is necessary. Socialisation, based on a complex interaction between genetic factors and learning experiences (Casey and Bradshaw, 2008), introduces friendliness in animals. As well as spatial, temporal factors are also crucial; socialisation is significant in relation to an animal's entire life experience. As Alice, a vet, explains:

> *"There are so many factors-- what have you done to that animal, how old is it, has it been socialised… the socialisation period for dogs and cats is very tight, so if they're not socialised then it impacts them for rest of their life. So everything is important, right from the beginning."*

Thus, a vital element of the rehoming preparation stage, and thus how well the animal crosses borders, rests with the actions of the suppliers of laboratory animals. A laboratory animal's ability to 'become pet' is crafted from the minute it is born. The Home Office (2015a) suggest AWERBs become involved in instigating the post-weaning socialisation of companion animals, including exposure to humans, other animals, novel objects and environments. Interspecies interaction from an early age emphasises co-development based on embodied and 'fleshy' interactions. Early socialisation highlights that beings are multiple, and are shaped through dynamic relations with others: the human and non-human, the animate and inanimate, and the living and lifeless (Kirk, 2014). Hence, early multispecies interaction helps to predict the ease through which animals later in life will transgress boundaries and multiple subjectivities.

Socialisation is also legally necessitated; the Home Office (2015a, pg. 4) advice note guiding the re-homing of laboratory animals outlines that an animal can only be rehomed if there is "an adequate scheme in place for ensuring the socialisation of the animal upon being […] re-homed". Participants also reflect on the importance of slowly exposing rehoming candidates to novel environments, infrastructures, people and objects. As Louisa, an AT who rehomed laboratory rats, reflects:

> *"For the first couple of days they seemed a bit skittish. I think with mine it's when they had just been weaned. They were probably just missing their mum. And it was a totally new environment. And they had a massive cage to get used to."*

Isobel, who also rehomed rats, similarly reflects the importance of socialisation: *"I just had to take them out and play with them on the sofa – letting them explore and get used to that environment outside of the cage."*

Furthermore, it is crucial that the new environment into which the animal is placed post-rehoming is not initially vastly different to that of the laboratory. As Alex, the manager of a rehoming organisation, explains:

> *"They hadn't really experienced much of laboratory life except the kennel that they had lived in before. That was a challenge in that it was important to make quite a protective environment for them to go into so that they weren't going to experience too much too soon."*

Participants thus reflect on the careful balance that must be struck in terms of ensuring animals are exposed to novel stimuli, without overexposing them to too much early on in the boundary transgression process, which may compromise attempts to successfully mould a pet. This form of 'backstage work' (Leigh Star, 2010) inherently involves the moulding (or 'tinkering') of rehoming schemes to specific animals, as will be discussed later in the chapter.

7.3.1.2 Training

Training represents another method through which boundaries dictating what constitutes a laboratory animal can be transgressed, as behaviourally animals begin to perform as a pet. Training involves ensuring animals adjust to a new life by helping them to engage in behaviours appropriate for that space. Brown and Dilley (2011) assert that giving an animal the label of 'bad' refutes the notion that the handler and the animal are a multispecies team who rely on complex forms of non-verbal communication. Consequently, positive interactions and reinforcements are generally preferred and are described by Spiezio et al (2017) as 'tools for care'.

Positive cross-species interactions are not only encouraged when rehoming, but are routinely performed to maintain cultures of care (Greenhough and Roe, 2018). Actively encouraged in animal welfare research and in policy (Hubrecht, 2002; Home Office, 2015a), multispecies training is beneficial for staff, science and the animal. Sharp (2017) discusses how, through positive reinforcement training, laboratory primates are trained to "sit calmly and without fuss" (pg. 235). Westlund (2015) indicates that with frequent one-to-one training, staff may notice signs indicating health problems, and by pairing potentially aversive experiences with treats (usually in the form of

food), animal stress is reduced. Central to this process is a cross species dialogue based on a more-than-human recognition of animals as sentient individuals. Trainers are responsible for 'listening' to animals, and allowing them to 'speak back', simultaneously facilitating knowledge transmission across species.

Although environmental and social enrichment is vital for many species, training efforts are arguably most relevant when rehoming laboratory dogs (LASA, 2002; Buller, 2012). Power (2012) suggests the bodies of dogs in particular are produced as 'domestic', and argues that in order to maintain the clean and tidy multispecies domestic house, dogs must be well disciplined. Despite training becoming increasingly 'dog-centered' (Koski and Bäcklund, 2017), which allows dogs to shape their own training in an interactive and dynamic approach, training is still governed primarily by dominant cultural forces that dictate animal behaviour in the human home.

Training is an interactive process, intended to induce motivation for the animal involved. Behavioural responses are facilitated by repetitively performed scripts, and often depend upon material items considered 'kit', including whistles and treats. Bodies (both human and non-human) can also be considered kit, and the reward can be stroking or patting, which facilitates cross-species contact and physical engagement. Walsh (2009) suggests stroking "decreases tensions and builds rapport and trust" (pg. 494). This contact is tactile, and the vocal processes that often accompany this – a 'happy' voice and pleasurable body language – helps to strengthen the intersubjective bond (Kirk, 2014).

Indeed, Despret (2004) proposes that subtle movements in the human body result in attunement across species. She argues that such a process invites the fostering of novel identities and new ways for animals to perform. These performances are particularly acute within the human home. As Peter, the manager of an animal facility, explains:

> *"We put together a very detailed process, because it was dogs. Obviously dogs in the lab environment, well, they're still dogs, but they– in terms of what you'd have to do to train them to live at home, it's more complicated. Because of course they live in pens now. So the policy was very clear in terms of making sure that anyone who came forward to rehome understood what that meant and that you may get accidents for a period of time, because, you know, it's not the dogs fault, they just haven't been trained"*

Peter also evidences the use of boundary work in his discussion of dogs being somehow different when housed in the laboratory environment. Although explaining that laboratory dogs are "still dogs", he draws a distinction (or boundary) between those inside and outside of the laboratory in terms of their behaviour. He also seems to reflect that the boundary transgression process is ongoing once the

animal is rehomed: the dogs are not rehomed as 'pets' but instead constitute 'works in progress'. The rehoming process is therefore not an event of the past but an enduring process, undertaken to ensure animals are "continuously negotiated and held in place" (Power, 2012, pg. 371). As he suggests, "you may get accidents" (behaviours that do not conform to that of a good pet) for an indefinite period as the dog moves away from their categorisation as a laboratory animal.

Indeed, boundary transgressions are not simple, and instead require significant levels of "backstage work" (Leigh Star, 2010). Hannah, who rehomed a laboratory dog, reflects on the difficulty of getting her new dog to adjust to the human home space. She reveals the expectations that come with acceptable animal behaviour in relation to the home space, but also demonstrates the agency her dog possesses in shaping human behaviour through acts of co-doing and co-being (Koski and Bäcklund, 2017). Specifically, she discusses the difficulty of toilet training:

- *"It took him 21 hours to have a wee. So, we brought him home and I was paranoid about him not going out for a wee. And, yeah, it took a long time, 21 hours to wee. I even rang [the rehoming organisation] and they said it's a confidence thing, you just need to wait. He'll be alright, but hopefully it won't go on too much longer.*

Q. *And did he have any accidents inside?*

- *Oh yes. Previously where we were when we got him, luckily we had a conservatory, a much smaller one than that one [*gestures toward current conservatory*], but I kept him out there before I allowed him in the house and he was housetrained from there, so I spent a few nights on the floor with him trying to get him to go outside before he did anything inside. He got the hang of it quite quickly, it was just a bit messy"*

By explaining that she "spent a few nights on the floor with him", Hannah evidences the 'tools of care' discussed previously by Speizio et al (2015). By being physically close to the dog, she provides a calming presence, and employs her body as a tool to aid in the training process. This suggests boundary crossing involves the use and interaction of multiple species and bodies. This narrative draws directly from Twigg et al's (2011) notion of 'bodywork', initially employed in healthcare settings, which describes the way in which bodies are assessed, treated, handled and monitored. By gently encouraging animals to adopt expected behaviours using bodywork, boundaries are slowly crossed and animals move from an instrument for research to a much-loved family member. Thus, dog behaviour is moulded to conform to household routines. However, as Hannah's experience shows, these practices are complex and can result in the un-making of traditional human domestic practices in novel "doggy" ways (Power, 2012). Canine body boundaries, despite well-executed

training schemes, are always subject to cracks and fissures; dogs moult hair, urinate in the home, and disrupt human temporal sleep patterns.

However, exposing animals to novel and potentially aversive stimuli can be beneficial in encouraging them to tolerate and eventually accept unusual objects, people or environments. Laule et al (2003) states that by pairing positive rewards (in Hannah's case above, physical contact and attention) with stimuli that cause animal anxiety, they will slowly become less fearful. The authors conclude that desensitisation is a "powerful, versatile, and valuable technique" (Laule et al, 2003, pg. 168). Research facilities employed similar desensitisation attempts when rehoming their laboratory animals. As, Amy, responsible for coordinating a laboratory animal rehoming scheme, explains:

> *"We try to expose them in workshops and sessions to things that they would meet in a home environment. So they don't live with those things, because, generally, they'll eat them [laughs]. But in those workshops they'll get them used to breeds they don't know if they haven't already been housed with them, or different things that you might see in a home environment. You know, we walk them on the site so they see traffic and things like that."*

Amy's establishment has 'puppy socialisation rooms' that physically mirror the living room of a human home. The domestic therefore is materially brought into the laboratory as animals are raised to ensure the smooth transition from research animal to pet. This reflects that the boundaries drawn around laboratory animals that define them as such are inherently more permeable at some facilities. Training practices are routine in laboratory life, and therefore demonstrate an example of response-able relations (Haraway, 2008), and cultivate sensitivity to the animal other (Greenhough and Roe, 2010).

Building on more-than-human literature, Haraway draws on her experience of play with dogs through "wonderful, joy-enticing signals" – a way to both sense and respond to the needs of the animal other, and enabling the formation of a deeper bond based upon "unconscious physical communication" (Kirk, 2014) and trust (Schuurman, 2019). The significance of this communication is recognised by participants who acknowledge the importance of being attuned to animal body language. In fact, participants suggest that a "responsible rehoming" would mean prospective owners would be able to recognise subtle changes in animal body language. As Olivia explains:

> *"It's about having that understanding, you can tell a teenager to look out for body language signs, and when a dog might be worried and to know when to give the dog*

space. Whereas with a younger child they might not pick up on those things and it's harder for them to understand things about giving the dog space. It's all about responsible rehoming really."

"Having that understanding" of animal behaviour goes beyond a simple and objective teaching of animal "body language" (Arluke and Sanders 1993, pg.133). Following Fletcher and Platt's (2018) discussion of 'listening' to animals in order to anticipate their actions, having "that understanding" emerges as an intricate and embodied 'knowing' of an animal based upon a fluid and dynamic intra-bodily communication. This communication is integral to a successful rehoming, and thereby also to a smoother boundary transition. Drawing on non-representational theory (Thrift, 2008), both the human and the animal rely on more-than verbal communication, and 'train together' (Haraway, 2006). Here, a different form of communication emerges as the handler reads a language they do not have "sufficient neurological apparatus to test or judge" (Hearne, 1986 pg. 107). Once rehomed, animals assume a new symbolic identity that is more attuned to human behaviour and body language. Indeed, part of what makes a "post-human family" (Charles, 2016) is the animal's ability to listen and act in accordance with human body language (Holland, 2018), and therefore become fully embedded in the post-human family (Schuurman, 2019).

7.3.1.3 'Tinkering' boundary transgressions

Neither the pace of movement across boundaries and subjectivities, nor the ways in which boundaries are transgressed, are static, and instead vary between individuals. For some, boundaries are more permeable than for others. For example, by making it legally complex to rehome genetically modified animals, adoption programmes create a subcategory of laboratory animals whose members are more tightly consigned to the role for which they were bred (Clark, 2014). Even when rehoming is permitted, an intricate attention to the individual is necessary; the American Veterinary Medical Association (2015) state that simply exposing animals to other species or people as a form of socialisation will not meet their specific needs, and thus "individual-paced" socialisation schemes should be tailored to animals. Those working with laboratory animals commonly reflect on individual differences in animal personalities. As Hannah, who rehomed a laboratory dog, explains:

"[Laboratory beagles] are probably slightly different in character. I know when I would go in and say 'I've done this, I've done that' they would say 'oh god you're lucky' – because you can either have, apparently, a very quiet, chilled, or a very over the top beagle! And he's definitely a chilled one"

Olivia, the manager of a rehoming organisation, also reflects on the differences in a dog's capacity to adjust to becoming a 'pet':

> *"Of course [rehoming] won't be the best thing for every dog – there are some that will be more nervous, there will be different personality types, there's the genetic element, regardless of experience some aren't going to be as adaptable as others, so I think you need to be quite careful and quite pragmatic."*

Indeed, Anderson's (1997) paper, which envisioned an alternative human-animal ethics, determined that there is no guarantee of success with domestication. In fact, the process should be subject to continuous refinement to enhance success rates. Similarly, Bökönyi (1989) argues that domestication is not a simple and uniform process, and instead the animal's agency is reflected in their ability to shape their own domestication. For many, this means efforts to train and socialise are modified by individual, but it can also mean simply that rehoming is considered unethical, as we saw with Megan's discussion of rehoming marmosets.

Thus, through rehoming, animals are assigned agency and personhood which foster individualised socialisation and training schemes. The 'tinkering' of such schemes forms a way of practising "attentive experimentation" (Mol et al, 2010, pg. 13), and modifies the boundary transgression process so that it varies with, and is appropriate to, every animal. For example, Susan explains how training:

> *"just depended on what that dog needed. Some of them, within a couple of days they were coming up to the front of the kennel, they wanted fuss, they wanted attention, some were in the back of the kennel. We then just had to go on, as we do with any dog that comes into the centre, what they show us."*

Susan's idea of having to 'go on what they show us' reflects how, through 'speaking back', dogs might communicate the specific types of preparation they require in order to 'become pet'. This notion draws on Nussbaum's (2009) work regarding the 'capabilities approach', which suggests that each animal has its own unique set of varied capacities for functioning. These capacities include health, emotions, thought, play and imagination. Human awareness of personality and somatic sensibility (Acampora, 2006; Greenhough and Roe, 2010) means that socialisation schemes are 'tinkered' to the animal, involving an attentiveness to their unique lived experience. This attentiveness is not taught, but innate, and reliant upon multispecies bodily comportments and facial expressions which are apprehended through the "shared experience of having a body" (Greenhough and Roe, 2010, pg. 55).

7.4 Implications of boundary transgressions

The final section of this chapter attends to the wider implications of boundary transgressions as animals transform from laboratory animal to pet. I draw on Anderson's (1997, pg. 464) understanding of domestication as "a process of drawing animals into a nexus of human concern where humans and animals become mutually accustomed to conditions and terms laid out by humans", but, using a more-than-human framework, will expand this by examining the implications of domestication. I will also, in keeping with Power's (2012, pg. 372) analysis, work to acknowledge the "gradual and vernacular relations through the focus on processes of drawing, and keeping animals in, and the broader political, social, cultural and economic context of these practices". Indeed, despite transforming the categorisation and symbolic identity of laboratory animals, the movement of animals across multiple subjectivities also practically transforms their lived experience.

7.4.1 Behavioural change

The primary outcome of boundary transgressions concerns animal behaviour. Participants reflect on the differences in the behaviours of rehomed animals, many of which had become more relaxed, playful and affectionate. As Alex, the manager of a rehoming organisation, explains:

> *"We had such great feedback – you know, 'the dog started playing with toys, they started doing this, they started doing that' we never expected to get as far as we did and that was a real plus."*

Alex explains how the rehomed laboratory dog came to "embody and perform the material, spatial and temporal ideals framing the domestic" (Power, 2012, pg. 276), including engaging in play relations. Alex also hints more subtly that the process of 'becoming a pet' operates on a spectrum. By suggesting that staff "never expected to get as far as they did", he implies that the dog more fully adapted to its companion status than predicted, thus moving further categorically from its previous position as a laboratory animal.

Alex also explains the importance of human emotion, which is intricately entangled in the process of 'producing' a pet. Anderson's (1997) discussion and interpretation of domestication proves a useful tool to interrogate this. For her, domestication is framed as an experimental process, and one that invites emotions of fear and hope. Those involved in rehoming similarly reflect a sense of achievement when rehoming is successful. 'Becoming pet' is thus positive both for the animal (in

terms of flourishing personalities), and in igniting a sense of hope and achievement for staff. Susan, the assistant manager of a rehoming organisation, recalls one particularly successful boundary transgression:

> *"We had [the former laboratory dog] come back in for a fun day, and he won his category. It was really nice to see him saying hello to people, getting him out in the ring, he was comfortable, and that was amazing to see, because this dog had sat at the back of his kennel quivering, and had gone home with these people and had built a bond massively and was ready to just conquer the world essentially. The success stories were amazing."*

Susan describes a complete boundary transgression as a "success story". Yet, the process of rehoming is still one of domestication, which Anderson (1997) frames as a way to bring animals into the home, and in the process simultaneously exploit and aestheticise them. Such a process consequently concerns the broader moralities of what is wild, and whether attempts to domesticate are appropriate. Indeed, despite pets being valued as family members (Cain, 2016), they are still fundamentally physically and psychologically adapted to the human home; some have their tails docked, coats trimmed, are neutered and declawed, and trained to fulfil human expectations of a pet. Dominance thus combines with love and affection in order to produce the pet (Nast, 2006). Thus, humans always mediate the processes by which animals can, in Susan's words, "conquer the world".

However, this does not mean that the animal's intrinsic wild nature is systematically removed; in fact, it is employed as a tool to effectively domesticate. Harry, responsible for a rehoming organisation, explains that laboratory animals are taught pet behaviour from other, obedient dogs: *"Importantly as a foster, we prefer to place our former lab dogs in homes with other dogs so they can learn basic socialization skills and learn 'how to be a dog'."* He advocates that by learning from other well-socialised dogs, and enabling wild pack behaviour, rehoming success can be increased. This hints at the intrinsic wild nature of animals brought into the home and called pets, which, despite efforts to domesticate, can never fully be removed. Thus, Millan (2006) suggests that we need to use dog psychology in order to understand animal behaviour independently from the social world of humans (Greenebaum, 2010). This opens up a space in which dogs can be used to 'teach' other dogs how to behave as a canine in the human home.

7.4.2 The domestic home as a haven

As a companion animal is traditionally defined by its residing in the human home (Bökönyi, 1989), conceptualisations of what constitutes a home for laboratory animals, the meanings attached to the home space, and how animals are expected to behave in these spaces, are crucial to debates surrounding boundary transgressions. Participants reflected that, once rehomed and brought into a domestic space, animal personalities flourished as spatial boundaries were crossed. As Ella, an NVS who rehomed a laboratory dog, explains:

> *"I feel that he really came alive after-- he was a different dog in the home. And like I said, I thought I was crazy taking the psychopathic dog, but after a year he was the most gentle and calm dog. He completely changed, his personality completely changed."*

The reference to her dog being different in the home, suggests that a spatial transgression (i.e. the dog was removed from the laboratory) was needed in order to enact a positive change in behaviour. Animal atmospheres (Hodgetts and Lorimer, 2018) are crucial in dictating welfare, and poorly enriched housing, synonymous with laboratory cages, tanks and pens, can lead to animal suffering. Ella explains how her dog was "crazy" and "psychopathic" in the laboratory, yet "gentle" and "calm" in the home environment. Therefore, through a spatial transgression, animal personalities flourish and suffering associated with repressive environments lessens. Ella goes on to explain how, at the facility she previously worked:

> *"Dogs were rehomed for behavioural reasons because they—they weren't suited to the lab environment, and, you know, I think that was a good thing, the institution was happy to accept that it was in the dog's welfare to get out of there"*

However, this does not mean 'animal atmospheres' are always improved in the human home. As I discussed in chapter four, new owners do not always 'care-well' (Buller and Roe, 2018) for their pets. Even those that are treated as loved companions in 'post-human homes' (Charles, 2016, pg. 2) have their lived experience modified in accordance with performances of domestic ideals. Power (2012) finds that domestication re-makes both canine bodies and the image of the human home in an entangled relationship. Through domestication practices, dog's bodies are disciplined to conform to home expectations and cleanliness, order, and control. Unwanted digressions include, for example, animal moulting, becoming overly energetic, or disrupting human sleep patterns. Pets are thus trained to embody and perform social, temporal and material expectations of them that frame the domestic home space. Thus, despite the romanticised notions of rehoming as freeing animals from

the laboratory, there exists a complex counter narrative in which animal behaviour and mobility continues to be controlled.

7.4.3 The creation of individuals

Simply embarking on the rehoming process can be instrumental in aiding boundary transgressions, even before an animal is formally rehomed. For example, once efforts are made to socialise and train animals, and appropriate paperwork permitting release from A(SP)A completed, the animal commonly experiences individualisation. As Chris, the manager of animal facility, elucidates: *"Once you've dotted the I's and crossed the T's you get individuals in the process".*

The practice Chris describes is the rehoming process and all included performative, embodied, affective and regulatory processes. By planning rehoming, Chris suggests that individual animals are actively produced and removed from their previous objective status as a scientific instrument. Linking to this, and further promoting the individualisation of the laboratory animal, is the naming process. Dan, the manager of an animal facility, recalls having to provide guinea pigs with names in A(SP)A paperwork when rehoming them:

> "*So we actually had to give them names… so the letter from the Home Office authorizing the rehoming had to refer to them by name. I actually have a letter from the Home Office talking about Jim and George the two guinea pigs [laughs]. You just have to identify them, you couldn't have authority to rehome two nameless guinea pigs. You actually had to say who they were"*

Naming can transform anybodies into somebodies (Holland, 2018), and results in a wider asserting of individuality and personhood. In fact, naming can be a vehicle for crossing boundaries (Bodenhorn and vom Bruck, 2009); Bökönyi (1989) segregates pets from other animals through their being viewed as subjects and quasi persons, and suggests the characterisation of animals provides a distinguishing factor in their grouping as a companion animal. If, as Beck and Katcher (1996, pg. 11) assert, having a name constitutes "the essence of being an individual and being a person" it follows that extending the act of naming to animals allows for the development of their unique individuality and personhood. Therefore, through rehoming, it is not only a behavioural change that is facilitated, but also a wider symbolic transformation as animals are viewed as individuals, and not research instruments, economic assets or data points (Lynch, 1988).

7.5 Critical reflections

It has previously been claimed that those engaged in scientific research involving animals "will point to the fact that these animals are not pets, [that] they were bred for research, as if that fact alone should dictate their fates after the research has ended" (Carbone et al, 2003, pg. 90). Yet, this chapter finds that, when laboratory animals are conceptualised as boundary objects, they are "plastic enough to adapt to local needs and constraints of the several parties employing them, yet robust enough to maintain a common identity across sites" (Star and Griesemer, 1989), and can thus transgress the borders that label laboratory animals as such. However, as part of the need to sustain critical and reflective enquiry, it emerges that theorising the rehoming of laboratory animals as a routine, uniform and systematic crossing of one boundary is too simplistic. As demonstrated, a range of different imagined and physical borders are transgressed (those symbolic, spatial and those relating to identity) and these constantly interact and mutually alter in a network of boundaries and borders. Instead, rehoming results in gradual change in the performance of animal identity that is situated in a constant interplay with the wider environment, and continues long after the animal is formally 'rehomed'.

For example, training ideally continues after the animal is moved to the home space. As Power (2012) suggests, domestic ideals are made and re-made as canine behaviour meddles in ideas of the home space as clean and dirt-free. This suggests that movement across a boundary may be better conceived as a continuum, and thus one where the animal's position in relation to particular boundaries is in a constant state of flux. Similarly, there are differing degrees of physical, behavioural and psychological change that are required in specific rehoming cases, in specific species and even specific individuals. For example, rehoming a rat does not represent a significant departure from its life in the laboratory, yet for a laboratory dog the change in social and environmental setting means the level of appropriate preparation required is substantial. These notions are further complicated by symbolic ambiguity; is the way dogs are viewed in the laboratory significantly different to how they would be viewed in the home? Are research dogs, due to human's deep-rooted affection toward the species, ever simply considered a scientific instrument when used in experimental research? Conversely, is it easier to view a rat, a species occupying a liminal space and straddling multiple subjectivities, including a pest (Birke, 2012), as an economic asset and consequently to detangle it from its potential as a pet? These discussions imply the increased permeability of some boundaries in relation to others.

The processes by which boundaries are shifted are also dependent upon the facility. As the previous chapter revealed, facilities have diverse atmospheres, policies and modes of operating. Research facilities harbour unique cultures that will dictate the boundary transgression process economically in

terms of resources allocated to rehoming, but also emotionally in guiding staff attitudes toward rehoming. Indeed, in the facilities that have embedded rehoming into their regulation, infrastructures and affective atmospheres, the boundaries that separate laboratory animals from pets are less rigid, and have an increased potential to dissolve. In these spaces it is possible to ask whether animals are ever truly considered laboratory animals and instead simply 'pets in the making'.

Boundary transgressions also fluctuate with conceptualisations of the 'home' in 're-homing'. Although this chapter has focused primarily on rehoming to private homes, some laboratory species are rehomed to wildlife sanctuaries or zoos. These forms of rehoming may involve teaching animals to be wild, but there are issues surrounding whether that innate ability can be (re)taught (Palmer and Malone, 2018). In contrast, rehoming traditional companion animals involves training to 'become pet'. This reveals the complex nature of what is perceived to be the right 'home' for animals, as well as human expectations of animal behaviour as the animals cross different spaces and assume differing subjectivities. The shifting of boundaries is consequently complex and dependent upon a nexus of cultural, social, historical beliefs.

The final noteworthy complication is of a spatial nature, which reveals the intricate network in which symbolic, categorical and spatial boundaries are transgressed. Simply removing an animal from the laboratory (and thus enacting a spatial transgression) is often not enough to also result in a parallel change in symbolic identity. For example, agricultural animals are commonly 'rehomed' from the laboratory and transferred to slaughterhouses or farms (Home Office, 2015a), where their symbolic significance as an economic asset remains intact (Buller and Roe, 2012). This is likely due to the space into which the animal is 'rehomed' – in the farm or abattoir, animals are still used and systematically harmed for human benefit. Thus, the movement across one physical, material border (the laboratory) does not necessarily result in movement across symbolic borders. Similarly, boundaries relating to animal identity can be transgressed without the animal being removed from the laboratory space; the work of Greenhough and Roe (2018) and Bayne (2002) reveals intricate stories of animals treated as pets in the laboratory and set aside from euthanasia.

Thus, although boundary work presents itself as a useful analytical tool through which to probe intricate human-animal relations, caution should be exercised in drawing static and uniform boundaries that risk overlooking complex matters at play. As Gieryn (1983) himself suggests, boundaries are continually drawn and re-drawn in flexible, historically changing and ambiguous ways. They are embedded in a complex nexus with one another, and are contingent on the actions of society. Yet, it is by studying the performance of these complex boundaries that a light is shed on intricate and dynamic human-animal relations both in the laboratory and beyond.

7.6 Conclusions

Dwelling with residual objects and inhabitants is a theoretical requirement. This chapter has endeavoured to make visible the processes by which the movement between two forms is made possible, in line with Leigh Star's suggestion that we attend to the underlying 'backstage' work that enables this transformation. The study of boundaries presents itself as a sophisticated analytical framework for understanding the regulation, lived experience, bodily capabilities and infrastructure that become crucial in understanding and facilitating shifting animal identities. As Leigh Star (pg. 614) writes: we "live in a world where the battles and dramas between the formal and informal, ill structured and well structured, standardised and wild, are continuously fought." When boundary objects transform, there is a magnitude of invisible work that transcends representation and facilitates a wider change in animal identity. This chapter has attended to the significance of this 'work'. Indeed, a wealth of emotional, practical and regulatory labour goes on "behind the scenes" when rehoming laboratory animals.

Those working with laboratory animals reveal the sustained and complex ways in which boundaries are drawn to make sense of laboratory life, and to determine the treatment of specific animals and therefore their likelihood of being considered for rehoming. However, boundaries are not impermeable. Through "ritualistic practices" (Schuurman, 2019, pg. 15) such as training and socialisation, a nexus of moralities including care, control, mastery, and paternalism mix to create the ideal 'pet' and transcend the socially constructed identity of 'laboratory animal'. Animals are reshaped physically and behaviourally to domestic, material and temporal expectations of the home and its routines (Anderson, 1997). Yet, it is crucial to acknowledge that the animal's agency cannot be separated from its life history; all that the animals have seen and experienced of the world, and the human and non-human actants in it, continues to shape them long after they are formally rehomed.

Indeed, the animal often holds more agency in shaping the transition process than previous literature and regulatory guidance has acknowledged: rehoming schemes are 'tinkered' to individual animals, accounting for differences in personality, character and a continual reflection of the animal's life history. Those helping to rehome laboratory animals acknowledge that some take longer to 'become pet'; some need extra attention, rely on mimicking the accepted behaviour of other pets, and may require additional patience and understanding from new owners. Thus, when species meet (Haraway, 2008), often in unusual and novel ways, species both affect, and are affected by, the behaviour, personality and actions of the other (Power, 2012). These behaviours are governed by the expectations of the space in which the animal is encountered. As Greenebaum (2010, pg. 130)

proposes, “our love and commitment to pet animals is stronger when they are housebroken, quiet, and walk nicely on a lead.”

Leigh Star initially explored people as objects of scientific and political “marginality”, but this chapter has revealed it is also possible to extend this logic to animals. The rehomed laboratory animal does not fit into neat categories or standards, but instead represents a liminal, inter-categorical being, which straddles multiple residual categories based on a nexus of social, cultural, economic and spatial factors. Movement across space (from the laboratory to the home) triggers a physical change to the environment in which the animal lives, but the change to the animal’s identity and the way it is valued suggests a simultaneous, and more complex transgression. By exploring boundary making processes, this chapter has attended to how categorisations as a research instrument (Lynch, 1988) can be transgressed, as animals transform physically, behaviourally and symbolically to their new identity as a companion.

The final empirical chapter uses organisational boundary work to explore wider stakeholder relations in the rehoming debate.

8. Chapter 7 – Using organisational boundary work to explore cultures of collaboration and communication in stakeholder relations when rehoming laboratory animals

8.1 Introduction

Leigh Star (2011) argues for the importance of investigating "backstage" work when examining boundary objects and the process by which an object, animal or person, crosses boundaries and moves from one form to another. Following Leigh Star's conceptualisation, the previous chapter explored the laboratory animal, both before, during and after its rehomed state, as a boundary object that is "worked on". However, as well as exploring small-scale affective multi-species interactions in immediate 'face-to-face', or 'body-to-body' encounters in the laboratory, Davies et al (2020) argue there is also a need to explore the relations of animal research at a range of scales: from the laboratory to external organisations, and, in so doing, chart the wider nexus of relations across UK stakeholders (Davies et al, 2020).

I address this gap in this final empirical chapter, which turns to explore the multiple stakeholders negotiating the backstage work necessary in rehoming, and the processes through which they share ideas, practices, knowledge and resources. In attending to the web of intricate stakeholder relations, this chapter draws on organisational boundary work as a structuring device to unpick how complex notions of trust, risk, and openness influence the way in which stakeholders negotiate wider policies and practices of laboratory animal rehoming. This necessitates an exploration of how boundaries between different organisations (or stakeholders) are imagined, the particular discourses this presents, and how this harbours practical implications for the forging of cross-stakeholder contacts and bridging of organisational boundaries. Herbst (1993, pg. 3) argues that "to ignore discourse is to gain an incomplete understanding of social and political life'', and this chapter addresses this gap by exploring the discourses in circulation around laboratory animal rehoming practice.

8.2 Organisational boundary work and the bridging boundary object

As part of Gieryn's (1989) work exploring how the boundaries of science are (re)established, he suggests we need to understand the complex interactions between the scientific community and those outside of it, specifically where roles and decision-making practices are constantly blurred and re-asserted. Boundaries are not neutral spaces, and instead are sites of struggle and identity formation (Edwards and Kinti, 2010). This is reinforced as groups use what Leigh Star (2010) terms specific language and "private codes" (pg. 605) to communicate within their respective organisation, causing tension between stakeholders. It is this under-consolidated site of analysis, which explores how multiple stakeholders negotiate practices aimed at enriching animal life, which will be explored in this final chapter.

In order to do this, organisational boundary work will be used to guide analysis. An organisation can be defined as "a community that partakes of a common meaning system and whose participants interact more frequently and fatefully with one another than with actors outside the field" (Scott, 2001, pg. 56). In this research, these organisations will be termed "stakeholders", examples of which are provided below (Tab. 7). Boundaries exist between these stakeholders based on identity (who we are as an organisation) and organisational objectives (what do we want to achieve) (Velter et al, 2020). Crucially, these boundaries are not static, but are continually re-shaped based on a nexus of interactions with others.

Drawing from Velter et al's (2020) work, which investigates how organisational boundaries are negotiated, disrupted and re-aligned, this chapter will explore how 'boundary dissonance' affects the potential for organisations both inside and outside of animal research to work effectively together. Such dissonance relates primarily to the ways in which external 'others' are imagined, organisational and disciplinary borders reasserted, and discourses in which those pro-, and anti-animal research are pitted against one another. However, the picture emerges as far more complex than a polarisation of beliefs, which obscure complex entanglements (Davies et al, 2020). Working at the boundaries helps to unpack the levels of complexity necessary to fully understand how stakeholders imagine 'others', and how this effects networks of communication.

Unpicking these imaginations involves employing actor network theory (ANT), which helps to understand how both human and non-human actants become important in communication efforts. Actants composed of laboratories, social media, academic journals, regulatory documents and welfare organisation websites help to communicate the practices of animal research and rehoming specifically (Latour, 1996). The effects of these discursive cultures of communication ripple outwards, where, as Thomas (2008) argues, easily accessible information, such as that in mainstream media,

may represent the only exposure some have to biomedical research involving animals. ANT helps us to understand how discourses are generated. This includes painting the public as uninformed (Twardowski and Malyska, 2015), lab technicians as dirty (Mills et al, 2018), scientists as dispassionate (Rowan, 1995), and rehoming organisations as sites of rehabilitation and care (Villanueva, 2018).

It is in these discussions, where stereotypes might otherwise proliferate, that boundary objects, which help us to analyse the nature of cooperative work (Leigh Star, 2010), find a place. Leigh Star explains how, when stakeholders come together, consensus is rarely reached, can be fragile when it is, but that cooperation continues. Boundary objects are thus conceived as mediators or translators between types of knowledge belonging to different social worlds, and can facilitate cross-organisational collaboration (Uri, 2008; Robinson and Wallington, 2012). Boundary objects have conceptual flexibility; they possess different ontological statuses, and as multidimensional entities they bridge conceptual tensions (Trompette and Vinck, 2009). This conceptual flexibility can, according to Wenger (1999), facilitate dialogue between social worlds.

This chapter continues, as previous chapters have done, to conceptualise the body of the laboratory animal as a boundary object. The animal possesses symbolic ambiguity, and different organisations view the animal differently, for example as a scientific instrument, a (potential) companion, a pest, or a heroic lifesaver. Through rehoming, the laboratory animal can re-shape organisational boundaries to become more collaborative. For example, as rehoming efforts commonly involve the scientific community, animal welfare groups, third party rehoming organisations (or a farm, wildlife sanctuary, or zoo), and the public, the practice brings together diverse stakeholders who are unlikely previously to have collaborated. The laboratory animal thus provides what Velter et al (2020) term a "spanning tool" to unite organisations and enable conversation across organisational boundaries, re-moulding traditional stakeholder relations in animal research and opening up new collaborative spaces. However, Doring and Ratter (2015) note the complexity of stakeholder relations based on the conflicting institutional logics, values and interests of stakeholders. This chapter will demonstrate that, although boundary objects can support interaction, the process is not simple, and, when poorly planned, using such objects to unite stakeholders can aggravate tensions and further organisational agendas.

8.3 Defining a stakeholder

Before I move to explore complex stakeholder relations, it is necessary first to outline what constitutes a stakeholder. The relatively recent term, initially employed in the field of politics and business management (Brugha and Varvasovszy, 2000), is now applied to other fields, including

healthcare and policy (Hyder et al, 2010). The term is rarely used in more-than-human geographies, despite recognition of how multidisciplinary perspectives can enrich understandings of the ways in which animal research is informed (Davies et al, 2016).

In this research, stakeholders are defined as an entity with a direct or potential interest in the rehoming of laboratory animals. They can be external to the laboratory (rehoming organisations, wildlife sanctuaries, zoos, farms, aquariums, breeders, schools, animal rights organisations, or lobbying organisations) or internal (NVSs, NIOs, NACWOs, ATs). Another class of stakeholder constitutes the public; some of whom have elected to become direct stakeholders by personally rehoming laboratory animals. The figure below outlines the stakeholders typically involved in rehoming (Tab. 7)[43].

Internal	External *(directly involved)*	External *(indirectly involved)*
• Named Veterinary Surgeon • Named Information Officer • Named Animal Welfare and Care Officer • Facility manager • Animal Technicians • Scientific researchers	• Rehoming organisations • Zoos • Aquariums • Wildlife sanctuaries • Farms • Schools • Petting zoos • Breeders • Animal welfare organisations • Individual recipients of rehomed animals	• The public • The media • Animal activist groups

Table 7 – An overview of stakeholders involved, either directly or indirectly, in rehoming laboratory animals.

However, in keeping with a more-than-human approach, and in addition to the human stakeholders referenced above, it is important also to account for the animal. Previous chapters have revealed the importance of animal agency in rehoming practice, specifically stories of embodied multispecies encounters in which animals are conceived as individuals with the capacity to affect us (Greenhough and Roe, 2019). This chapter continues in this vein, and follows Frawley and Dyson (2014) in proposing that animals are usually rendered invisible in stakeholder debates. However, as animals are

[43] The stakeholder list shown in Table 7 was gathered from interviewee accounts.

affected by rehoming, Molavi et al (2018) propose they should be considered a stakeholder. Doing so allows us to reveal complex human discourses centring around the animal. Although in this chapter the animal will not be discussed as a stakeholder per se, it is nevertheless crucial to acknowledge that it is because of the animal, and a desire to improve their lived experience through rehoming, that these human conversations, collaborations and conflicts occur at all.

The chapter will begin by exploring why stakeholders feel collaboration is important, as well as the potential difficulties that may arise. The following sections will attend to three main issues in the rehoming debate: openness, risk and trust, detailing how, in some scenarios, stakeholders collaborate, and in others, differences of opinion and a lack of trust results in conflict and the fortification of organisational boundaries.

8.4 Cultures of stakeholder collaboration around rehoming

Academic literature has long reflected on both the benefits of, and the challenges posed by, multi-stakeholder collaboration. This spans contexts; for example in health care and research (Keckley and Hoffmann, 2010); tourism (Gopalan and Narayan, 2010); land management (Elbakidze et al, 2010) and conservation (Hartley and Robertson, 2008). Kohler (2002, pg. 11) reflects that organisations do not live in isolation, and instead in a zone of "active interaction and exchange". He suggests that it is in these borderlands that boundaries blur and novel hybrid practices develop.

Rycroft-Malone et al (2016) argue that effective collaboration entails careful navigation and negotiation to facilitate productive conversations and engage in meaningful partnerships. Crucial to this process is mutual respect, an understanding of one another's roles, contexts and contributions and a "mutual learning and better appreciation about each other's perspectives and contributions" which "may lead to […] better processes and outcomes" (Rycroft-Malone et al, 2016, pg. 222). At both individual and organisational levels, different cognitive and emotional representations circulate, shaped by a complex mix of values, experiences and interests. It is important that, whilst recognising this to be the case, stakeholders co-operate, co-ordinate and collaborate to sustain effective, long-term partnerships (Goodman and Thompson, 2017).

Animal research has historically been framed as a highly polarised debate (Smith, 2001; Davies et al, 2020), structured around pro-animal and anti-animal research accounts. However, this narrative is oversimplified, and risks obscuring deep cultural, political and ethical entanglements and shared beliefs between animal protection groups, scientists, and policy-makers that regulate animal research (Davies et al, 2020). Indeed, most participants acknowledge that, in order to rehome successfully, effective stakeholder collaboration is vital, especially so in the face of difference in personal

perspectives. For many, rehoming means working with individuals or organisations outside of those with whom they would normally collaborate. For example, Rose, who represents an animal welfare organisation, outlines how she feels her organisation must work collaboratively with the scientific community:

> *"A lot of the work we do is about ethical review, and you can't do any of that from outside the research community. You have to be working together, and actually, I think very very early on. Because, I actually come from a scientific background, and when I went to [the animal welfare organisation] it was quite a surprise that there was no sort of link between the welfare organisations and the research community. So when I joined I did make an effort to do that."*

The language used here demonstrates how organisational boundaries are implicit in stakeholders' imagination, and their interpretation of self versus other. Collaboration for Rose means creating a sustainable and mutually shaped network through which ideas, knowledge and practices can flow. Rehoming thus invites novel stakeholder partnerships, which facilitate new relations and innovative practices. William, manager of a research facility, also outlines the value of working collaboratively:

> *"I think the [animal welfare organisation] has had a huge influence because [they] took that approach of saying, 'We'll not be confrontational, let's just simply get people together and discuss what's the best way to do things' […] They were really quite ahead of their time I think."*

A recognition of differences, but a desire to move beyond them to attain a common goal is perhaps key to igniting and sustaining effective cross stakeholder partnerships. As Charlotte, the manager of a rehoming organisation accepting former laboratory animals, explains:

> *"We have a great working relationship with them. […] I think it's really important to work together—you can have strong differences, you know, everybody knew what we felt, and we knew what they felt, but you work together in those areas where you can, and the rehoming is one very good example."*

These narratives reflect a moving beyond traditional discourses that paint a polarisation of beliefs amongst those inside and outside of the scientific community (Davies et al, 2020). Instead, they acknowledge overlapping perspectives and highlight collective moral and ethical beliefs which operate across organisational boundaries. Rehoming thus represents a vehicle through which to move

beyond static and oversimplified discourses, and to probe the intricate and novel relations between organisations that arise. Rehoming thus bridges divides and highlights a new collaborative discourse which centres around how stakeholders make joint decisions surrounding animal use and treatment, and work together from a shared desire to improve the lived experience of laboratory animals.

8.5 Why collaborate?

Rehoming simultaneously unites organisations through a process, a set of values, and a shared goal, guided by ethical, but also commonly personal, belief systems grounded in care for the animal other. The reasons to form partnerships are complex, but doing so evidences a desire to respond to the needs of animals (Despret, 2014). It is here that the animal emerges as a stakeholder with agency. I find three reasons for collaboration when rehoming: 1) to share intimate knowledge of specific animals, 2) to avoid practices that could compromise animal welfare, and 3) to practically enable facilities to engage in rehoming through the sharing of resources.

The first reason concerns the pooling of knowledge regarding individual animal health and behaviour. As Olivia, the manager of a rehoming organisation accepting former laboratory dogs, explains:

> *"For people that are working in rehoming, we don't exactly understand the environment and the constraints of the work that is being done with these dogs. So, although you know that they're ex-lab dogs, you don't know a high amount about what their day-to-day life has looked like, what their handling has looked like, their routine. The people that worked with these dogs probably knew these dogs really really well, and they could probably have said themselves what their personalities were like, and which ones were more inquisitive and outgoing and adventurous, and which ones were a little bit more standoff-ish."*

Olivia goes on to say that *"[The dogs] came with a note from the facility – you know, that there is a possibility that you might see this".* She explains that these hand-written notes include detail on possible behavioural or health abnormalities specific animals may display, gathered after extensive and sustained one-to-one contact in the laboratory. This involves a personal form of labour by facility staff, and one based on an affective attunement to animals and a recognition of animal individuality. It is important that these intimate knowledges are shared between the physical and ideological boundaries separating stakeholders (in this case the laboratory and rehoming organisation), as Riege and Lindsay (2006) find knowledge transfer fundamental to the establishment of successful

partnerships. However, and as I will demonstrate later in the chapter, this does not always take place due to fears of reputational risk.

A second reason to collaborate is the avoidance of practices which may be detrimental to animal welfare. Practical 'tinkerings' (Greenhough and Roe, 2018) to the rehoming process can limit stress in animal transportation, or ensure adaptation to a new environment post-rehoming. Charlotte, the manager of a rehoming organisation accepting laboratory cats, outlines how cats were transported in a manner that reduced levels of animal stress, requiring multi-stakeholder collaboration:

> *"It was [a rehoming organisation] that transported them over a period of time – the cats didn't just land in on us, we took them so many at a time. The reason for that was to try and cut down on the stress levels of the cats when they were being transported from the lab."*

Similarly, David, the manager of a primate sanctuary, explains how his organisation worked with the research facility to enact measures to reduce primate stress once rehomed. He describes how the sanctuary:

> *"Worked with the research facility during the planning of the exhibit, in order to maintain certain design features which [the primates] have been used to (such as the water delivery system) and then sent one of our staff members over to work with them for a few weeks. This had two functions; firstly to allow the chimps to get used to at least one of our members of staff, and second to allow our staff to get a feel for their routine."*

Through collaboration, the lived environment of the primates was re-shaped in order to maintain design features with which the animals were comfortable. This demonstrates a practical care, one that Giraud and Hollin (2016) describe as tinkering with existing socio-technical and physical infrastructures. Staff were also physically transferred from the sanctuary into the laboratory to ensure the building of human-animal bonds prior to rehoming. Collaboration thus reshapes traditional practices, and demonstrates how personally invested staff are in achieving successful rehoming outcomes. The significance of this endeavour and the challenges it would have presented cannot be overestimated; revised security measures would have been necessary, sanctuary staff would have required accommodation whilst placed at the facility, and the placement would have necessitated extensive risk assessments. Once the member of staff at the sanctuary moved to the laboratory, affective and personal encounters were used to gain knowledge about what mattered to the primates, and how their daily routine was structured (Giraud and Hollin, 2016). This again helps to

reveal the agency of the animal in dictating stakeholder practices and the wider movement of bodies, practices and knowledges across organisational boundaries.

Thirdly, in some examples given in interviews, stakeholders worked together not only to ensure animal welfare was not compromised, but also because collaboration was crucial in ensuring steps to rehome could be taken at all. I follow Prell et al (2009) in arguing that stakeholder collaboration gives access to diverse stakeholder knowledge pools, advice and resources. This was found to be true of research facilities which utilised the help of third-party rehoming organisations when rehoming large numbers of their animals. As Ella, an NVS, describes:

> *"There was pressure being put on the staff internally, but it was very difficult you know. They didn't have any particular strategies in place to find homes and that sort of thing, and I think, you know, obviously I must have been involved in that sort of thing-- discussions about the fact that there are organisations set up to home animals—you know, dogs, and would it not make sense to use one of those organisations if it's going to help get the dogs out earlier, and help find them better homes. You know, everyone thought that that was a good idea."*

Ella explains how collaboration with a third-party rehoming organisation allowed her facility to rehome through the sharing of resources. Also supporting the findings of chapter four, LASA (2002) make clear in their policy guidance that these organisations can be of great value to facilities, and partnerships can be formed which are "safe and anonymous" when based on mutual trust and respect (Carbone et al, 2003). These rehoming organisations can supply expertise on training, socialisation, and assessing home/owner suitability, as well as with legal considerations in signing over of ownership of the newly rehomed animal. These formal and often long-term partnerships can be conceived as both efficient and rational, and enable much of the 'backstage' work (Leigh Star, 2010) involved in rehoming to be undertaken by external experts.

8.6 No consensus amongst collaborators: Rehomed, retired, rehabilitated or rescued?

Despite the importance participants place on multi-stakeholder cooperation, in practice, and partially as a result of historically solidified organisational boundaries based on differing expectations and values, successful collaboration is difficult. Especially in the context of scientific research involving animals, which is a complex and contested practice currently accepted based on assurances across state, science and society (Davies et al, 2016). Stakeholders employ particular discourses, language and imagery to portray animal research in a particular way; for example as a lifesaving practice, or as a systematic and deliberate harm to animal life (Levin and Reppy, 2015).

Portraying a topic in a particular way is known as 'discourse'; which Hajer (2006) describes as "an ensemble of ideas, concepts and categories, through which meaning is given to phenomena" (pg. 45-56). He argues discourses are spread by "a group of actors, that in the context of an identifiable group of practices, share the usage of a particular set of storylines over a period of time" (pg. 69-70). Through such storylines, stakeholders impart their perceptions of an issue to others. They do this through representation (Gieryn, 1983), using their values selectively to distort social reality, to further their political interests and potentially to persuade people to think and act in ways which benefit them. Castree (2013) argues that representation serves as a powerful tool, and once concepts, words and ideas are unpacked; they reveal the true beliefs, values and preferences of those using them.

Culturally, the rise of social media and digital technology provides organisations with the means to quickly create and widely disseminate stories (Hancox, 2014). As Lund et al (2018) propose, the media represents a virtual and physical space for storytelling. For example, both animal welfare organisations and research facilities employ the media to discuss either the benefits of animal research, or tell stories of marginalised groups, such as laboratory animals, who may otherwise lack a voice (Hancox, 2014).

Discourse and representation are particularly important concepts in understanding the rehoming of laboratory animals, in that they conjure up imaginations of both the world they are leaving (the laboratory) and the world they are moving into (the home). A diversity of words are used in regulation, government documents, organisation websites, and across social media to describe the process of a laboratory animal's life continuing outside of the laboratory and in a loving 'forever home' (Weaver, 2013). For example, the word 'retired', most commonly used in the US context relating to the 'retirement' of ex-research chimpanzees (Kerwin, 2006), suggests that animals have previously been employed within the laboratory setting and may be used to indicate that chimpanzees have a choice in their status as research animals, and consequently emotional entanglements of guilt are avoided – chimpanzees are treated as employees with incentives and holidays (Clark, 2017). It also hints at their advanced mental ability; primates can be 'employed', and can consent to being so. Rehabilitated (integrated into regulation in India) suggests some past trauma which the animal has overcome; it denotes a positive process; a form of therapy to help the animal return to a 'normal' life. This word also operates in regulation as a 'fourth' R (in addition to replace, reduce and refine), and is easy for the public to digest. The words 'liberated' or 'rescued' are more impassioned and are often used by rehoming organisations to cast a negative light upon research facilities, thus furthering their organisational priorities and agendas. 'Rescued' implies saving and recovery from a situation of neglect or harm, thereby also implying welfare is compromised whilst the animal resides in the laboratory. The language used to describe rehoming differs between

stakeholders, strengthening organisational boundaries; stakeholders represent "a group that partakes of the same meaning system" (Scott, 2001; pg. 56), and following Leigh Star (2010, pg. 605) engage in "specific language" relevant to their organisation.

I also found discourses of emotion to circulate in the interviews I undertook with stakeholders involved in UK rehoming. For example, Olivia references 'euthanasia', a term discussed in veterinary medicine involving "killing in a painless or minimally painful manner and, when at all possible, only to end suffering" (Rogelberg et al, 2007, pg. 152), as *"unnecessary destruction".* Similarly, Rebecca, who works for a different rehoming organisation, describes the worries she had concerning what she expected to be "*really traumatised"* ex-research cats, implying that the laboratory, or rather, the practices undertaken in the space, were capable of 'traumatising' animals. Rose, who previously worked for an animal welfare organisation, describes rehoming as "*a light at the end of the tunnel"* for rehomed animals, revealing perceptions of rehoming as offering opportunity and optimism where previously life was limited and bleak. Finally, Steven, the representative of another, more extreme anti-animal research organisation accepting former laboratory animals, adopts an even harsher interpretation, and describes rehomed animals as *"survivors of unique captivity"* that were *"rescued"* when rehomed.

This language reveals complex perceptions of animal research as harmful, not only biologically, but psychologically, to animals. These discourses tell emotionally and ethically compelling stories, often employed to prompt social change and influence public opinion (Ryan, 2004). Equally, telling the stories of 'abused' animals can perpetuate the circulation of negative affects and perceptions of humane animal treatment.

As well as furthering the dissemination of pre-judging perspectives, these narratives also have direct implications for fostering effective stakeholder communication (Takooshian, 1988), and reinforce organisational boundaries based upon a difference in both organisational and personal identities, objectives, values and priorities. This is why it is so crucial to explore the discourses used in describing the rehoming of laboratory animals. Representation and discourse can damage the web of trust between stakeholders and influence how the public imagines animal research. For example, the Beagle Freedom Project, a rehoming organisation operating in the US, has come under scrutiny from the scientific community for using the word 'liberated' to push their "usual anti-research propaganda" (Buckmaster, n.d.). Thus, rehoming and the way in which it is reported, like animal research, is often highly politicised and contested.

8.7 Cultures of communication: Openness

The ways in which stakeholders involved in rehoming are discussed and represented holds crucial implications for achieving openness. I begin by echoing Hood and Heald (2006, pg. 3) in advocating that 'opening animal research up' is "more often advocated than critically analysed". This section aims to address this gap, by using rehoming as a tool to explore narratives of openness, and ideas of what being open might mean in practice.

Openness is often described in relation to its opposite: secrecy (Holmberg and Ideland, 2010). Animal research does not typically have a reputation for being transparent, evidenced by narratives of a 'culture of secrecy' (Vincent, 1998; Kilkenny et al, 2010). In fact, Section 24 of A(SP)A, also termed 'confidentiality clause' (or, by critics, the 'secrecy clause'), prohibits the release of certain information. Further, although in recent years the numbers of bioscience journals have increased rapidly, maximising the availability and accessibility of research data (Kilkenny et al, 2010), one area in which reporting has been weaker is biomedical research involving animals. Research undertaken by the NC3Rs showed that only 59% of a selection of research articles stated the characteristics of animals used in experiments, including the species/strain, sex, and age (Kilkenny et al, 2010). Thus, some aspects of animal research remain highly confidential (Pound and Blaug, 2016), leading the public to feel unease about what may occur 'behind closed doors'. This is echoed in Rowan's (1995) research, which found the public believe those working in animal research to be 'remote', 'withdrawn' and 'secretive'.

As such, openness emerges as a tool to restore trust and diminish reputational risk or damage (Bandsuch et al, 2008). Auger (2014) identifies two types of openness: (a) an organization's reputation for openness and (b) its efforts to communicate openly. The research community have actively promoted both types through initiatives such as the concordat for openness, which encourages those working in animal research to commit to being "more open about the ways in which animals are used in scientific, medical, and veterinary research in the UK" (UAR, 2016). Such an initiative works to shift the political atmospheres in animal research (Davies et al, 2020), and helps to disclose a complex narrative regarding the role of trust in influencing human-animal relations, and communication between the scientific community and imagined publics. Openness is thus a central concept in discourses surrounding animal research and rehoming specifically, but manifests in a complex manner contingent on relations between the public, scientific need and developments in animal welfare.

8.7.1 Rehoming as demonstrable openness for improved public relations

Being open carries benefits; O'Sullivan (2006) proposes opposition to animal research results largely from public ignorance, thus educating the public leads to greater acceptance. Scientists have now begun to mobilise transparency discourses in an attempt to garner trust and induce public support for animal research (Holmberg and Ideland, 2010; Jump, 2014).

In line with the findings from chapter four, facility staff referenced the importance of being open about their practices, and reflected positively on the potential of rehoming in helping to publicly improve the ethical profile of animal research. In following this narrative, rehoming emerges as a tool for openness, a way to demonstrate corporate ethical responsibility, and to communicate the care that permeates throughout the laboratory. As rehoming schemes were a source of pride for research staff, media outlets were welcomed into facilities to aid in the publication and dissemination of successful rehoming stories and help overwrite narratives of secrecy, protecting against external criticism. As William explains:

> *"Senior management were really twitchy because you can see that there could be a lot of repercussions of [maintaining a research dog colony] and that's where we had to decide to be really open and up front and invite journalists in and positively say, "Look, we've set up this colony, here are the dogs, this is why we're doing it, come and cuddle some cute puppies […] It's good for public engagement or PR and openness, if you can say you rehome."*

Thus, rehoming represents a mechanism to present a more ethical profile of animal research (Wolfensohn, 2010) to those outside of the laboratory. In this scenario, journalists are mobilised as an additional stakeholder, or an actant for communication (Brossard, 2009), to help disperse the message of rehoming and of care within the practice, from inside the traditionally secretive space of the laboratory, to the public. In this scenario, organisational boundaries can be appeased through the recruitment of external others who may be able to disperse information effectively across historically solidified borders where communication may not otherwise flow effectively, freely nor without judgment.

8.7.2 Offset by the need for rehoming to be in the best interests of the animal

Despite William's assertion that publicising rehoming helps build rapport with the public, others express concerns surrounding rehoming simply for this reason. Arguing for "more honest openness" (pg. 160), Balls (2004) suggests that openness warrants none of its supposed benefits if not also

accompanied by decency and morality. In fact, he argues that this is crucial in order to facilitate trust in biomedical institutions and the work they do. Arguing against being open as a protective measure, John (2018) proposes that, at the heart of such debates, should come sincerity and honesty, and in rehoming specifically, a desire simply to improve the lived experience of laboratory animals. Though openness represents a sound ideal, caution should be exercised when assuming putative norms of transparency.

For example, while rehoming was acknowledged to be beneficial in improving public relations, participants explained that rehoming should not be attempted solely for this purpose. In fact, they argued that this constituted a positive side effect, and that rehoming should be undertaken instead because it is the right thing to do ethically in terms of extending and enriching animal life. Indeed, some participants expressed concerns regarding potential welfare issues surrounding blanket 'no euthanasia' policies. Despite a 'no euthanasia' policy seeming to be grounded in a recognition of, and respect for, the intrinsic value of animal life, this regulation potentially conflicts with legislation concerning the importance of euthanising suffering animals (Morris, 2012; Gibbs, 2020). Sometimes, it would seem, the caring thing to do is to kill (Holmberg, 2011). As Ella explains:

> *"You know, this was a company policy, because I did get into quite a few scrapes about this—the idea that this was an ethical policy, but actually it was a company policy, it was around PR, it was around the fact that this was—this was how the company sold themselves. But, I think it was ethical not to put the dogs to sleep. But I think there is a question around whether it is always the right thing not to do that, in every circumstance. I'm not certain."*

Freya concurs, suggesting that rehoming is a "good thing", but should not be undertaken simply to improve public perceptions of animal research:

> *"Rehoming shouldn't be an advertising label – we do research but it's okay, because we rehome. It's a good thing, it is a really good thing, if it's done right. But it shouldn't be a waiting list, you know what I mean? Our waiting list is there and that's amazing, however everything is falling apart in the background"*

Thus, an idea emerges that openness is only useful in garnering public support when also paired with honesty and transparency. Participants suggested rehoming should not be employed as a PR tool for the facility, and should instead originate from a place that considers animal welfare as the primary

concern (LASA, 2002). Crucial to this is an acknowledgment that rehoming is not always the best thing for specific animals, despite romanticised notions of the practice in public imaginaries and an assumed belief that it should always be a consideration (Wolfensohn, 2010).

8.7.3 Fears about culture of open communication

Raman et al (2019) propose that efforts to 'open up' science may instead increase the vulnerability of its institutions to wider social, political, regulatory and cultural scrutiny. Thus, as Birke et al (2007, pg. 154) suggest, scientists may:

> "React to this by going into the closet, to conceal who they are. […] Part of the stigma has to do with the gap between what is acceptable practice toward animals outside of labs and what can be justified inside them."

Although being secretive can fortify boundaries, generate exclusion and belonging, and harbour an 'us and them' narrative, Holmberg and Ideland (2010) suggest research facilities employ 'selective openness' as a protection strategy. These strategies, which limit the transmission of some information relating to animal research, work on a personal and institutional level. I find this 'selective openness' also operates in the context of rehoming, where facility employees used secrecy as a protective tool. Actors risk misunderstanding of their work by going public (Holmberg and Ideland, 2010). The notion of 'going public' is intricately entangled in rehoming, especially when prospective owners are members of the public, or if animals are rehomed to public wildlife sanctuaries, where information about the animals is publicised outside their enclosures.

As well as transparency meaning research facilities are vulnerable to increased scrutiny, a more tangible, and historically physical, threat is also embedded in efforts to 'open up'. Although the discussion of a perceived threat from animal activists is "well-rehearsed" and "persuasive" (Monaghan, 1999; Holmberg and Ideland, 2010), participants reflected that this might explain why research facilities are hesitant to rehome. Rose, who works for an animal welfare organisation, expresses worries regarding what she terms "*aggressive animal rights activism*" and the impact this activism could have on efforts from the scientific community to improve welfare, and "*be more open and do things like rehome*".

Whether or not the concern is legitimate does not prevent the perception of a threat from impacting "the ability of those working within laboratory animal research and care to respond to new forms of regulation, ethical assessment, data practices and animal welfare science" (Davies et al, 2016, pg. 3). The widespread dissemination of these discourses harbours direct implications for rehoming efforts,

preventing some facilities from considering rehoming. As David, the manager of a wildlife sanctuary, argues:

> *"I honestly believe that a lot of the problems stem from the animal rights groups, which in the past have used very aggressive and in some cases even violent tactics which means that many of these facilities do not want to admit what they are doing publicly and as a result it makes working with the facilities and subsequently their animals very difficult."*

Thus, stakeholders do not need to be directly active constituents (instead, they can simply be imagined) in order to affect decisions related to rehoming. Indeed, it is the potential actions (in the form of threat or potential criticism) of other organisations that can influence, or even jeopardise, existing collaborations. This reveals the complex ways in which animal rights and welfare organisations pitted as 'outside' of research facilities are conceptualised, and how this can ignite human anxiety, the nature of which continually shapes and reshapes behaviours and practices in the laboratory. Thus, informal and formal, real and imagined, direct and indirect, stakeholders have a role to play in rehoming. Worries regarding the actions of animal rights activists can limit attempts to be open, and consequently also the transfer of information that might otherwise ensure rehoming success. Perceptions of fortified organisational boundaries thus reinforce their solidity in a cycle of secrecy that further divides organisations and alienates them from others. This inherently complicates attempts at collaboration. I now move to explore another theme interwoven into stakeholder relations in laboratory animal rehoming: that of risk.

8.8 Cultures of communication: Reputational risk

8.8.1 Negative publicity from exposure via storytelling

Chapter six showed us that rehoming involves the intentional movement of live non-humans, and material objects (such as beds, cages, leads, favourite toys, and food) from the usually tightly controlled boundaries of the laboratory space. Further, accompanying the animal is commonly documentation surrounding their health and veterinary history, including an account of the experimental procedures in which they were involved. Such 'passports' "allow and record movements; establish and verify identities, and immediately records who can and who can't, who is and who isn't" (Birke et al, 2013, pg. 6).

But the associated documents and materials do not simply facilitate and permit movement, but also potentially open animal research up to scrutiny. The kind of animobility entangled within rehoming challenges traditional cultures of secrecy. Once rehomed, experiments that may have directly changed the animal's body will be clearer for the public to witness. For example, most research animals have an identification tattoo on the inside of their ear, or have implanted devices (Carbone et al, 2003). Laboratory animals are therefore unlikely to sit neatly within the culturally constructed boundaries of a pet animal, but instead provide a tangible reminder of their previous 'home' and activities undertaken within it. A complex situation thus arises, whereby, although rehoming is interpreted as beneficial in efforts to increase openness and promote an ethical profile of animal research, the inverse is also true, and rehoming can leave research facilities vulnerable to a myriad of public relations issues.

Indeed, participants reflected on the risks embedded within rehoming. These centred mainly on narratives of 'traumatised' laboratory animals, a discourse mobilised by some rehoming organisations, wildlife sanctuaries and zoos to further anti-research sentiments and promote public opposition. These stories reveal the complex paradoxes and contested moralities that unravel every day in the laboratory, and offer insights into the challenges, complexities and complications that shape human-animal relations both within, and outside of, the laboratory (Greenhough and Roe, 2019). The stories participants tell commonly detail the lived experiences of others, implying such stories are circulated and passed from person to person through intimate exchanges. As Anne, an NVS, demonstrates:

> *"The only other thing, I mean this is again, anecdotally, I've heard, is, urm, somebody who used to be a NACWO elsewhere, up North, I can always remember him telling me a story about rehoming animals, I think they were sheep or goats or something like this, rehoming them to a city farm, and he did it very happily, thought he was doing a good thing – things like this, then he went to go and see them displayed at the city farm and they had been displayed as 'rescued from cruel laboratory'. And yeah, I mean that's really unfortunate because it would put them off ever rehoming again due to the bad publicity. […]"*

Others recounted similar stories. William, who works at a primate facility, discusses:

> *"Well I think the [primates] that went to [a primate sanctuary], I think somebody… I mean, it wasn't necessarily publicised as such, but I think it might have been one of our staff or something who saw them and were told 'oh these were rescued from*

vivisection'. Well yeah, there was something about that. So obviously that's a bit off-putting. So the [rehoming organisation] were quite, well [the staff] were quite hot on that, because they realised that might jeopardise the programme. So we took it on board that we should avoid that."

Finally, Sophie, an NIO, reflects on the potential reputational risks entangled in efforts to rehome. She explains that risk emerges with information "*getting to the press*" about the kinds of experiments animals were involved in before being rehomed. These stories encourage risk to 'come alive', spreading across and within research communities. Through the recounting of cautionary tales, these stories refigure relations and multiply perspectives (Greenhough and Roe, 2018), operating as a warning signal to others considering rehoming to reflect on the wider cultural, reputational and political risks of doing so. As Haraway (2016, pg. 12) explains, "it matters what stories we tell to tell other stories with; it matters what worlds make worlds; what worlds make stories". Stories reveal wider narratives of flows of trust and distrust, but also more intricate affective experiences of love and care, and equally of fear and judgement (Mol et al, 2015).

Such ideas can be conceptualised through Ulrich Beck's (1992) 'risk society', a central tenet of which is that risk is not born from the environment and that which is natural, but instead from the inner world of society. With modernity and increased mobility (in this case, the increasingly mobile nature of laboratory animals) emerges uncertainty and insecurity, arising from the uncontrollable perceptions and implications of non-human movement (Kesselring, 2008). Thus, as Beck argues, although perceptions of risk harbour political implications, they also influence the lived experience of laboratory animals by preventing their potential rehoming.

The way in which risk permeates also reveals embedded anxieties in the work of facility staff regarding external perceptions of animal experimentation, and the fear staff have of opening themselves and their work up to scrutiny and condemnation. The level to which these anxieties are ingrained is revealed through their persistence even when rehoming, which is typically framed as an ethical and caring practice (LASA, 2002; Wolfensohn, 2010). It is also here that the challenges of using rehoming as a bridging device across organisational boundaries become clear, as the significance of historical tensions between scientists, animal welfare advocates and antivivisectionists persists and continues to influence research policy and practices.

8.8.2 The consequences of negative publicity

As discourses spread, the resulting imaginaries that emerge matter both practically and discursively, and offer rich insights into the complexities and challenges that shape human-animal relations, and the kinds of relations it is possible to have with certain categories of animals. The way in which stakeholders choose to describe rehoming, and the stories they relay about the practice, can create hostile atmospheres, close down conversations and limit the capacity for the research community, policy makers and the public to engage with the challenging and contradictory landscapes of animal research (Davies et al, 2002). Following organisational boundary work, it is crucial to explore the intersections and interactions across borders between stakeholders in order to understand how and why boundaries are constructed, and the effects this has in facilitating alliances or creating conflicts.

8.8.2.1 The potential for negative publicity deters facilities from considering rehoming

The implications of publicly spreading negative discourses relating to animal research reinforce boundaries based upon organisational identity, and hamper efforts to communicate openly and effectively. As previously discussed, although some facilities rely on the assistance of third-party rehoming organisations, when negative discourses circulate around previous rehoming attempts, facilities may instead decide not to engage in rehoming at all. As Rose reflects:

> *"In the past there have been incidences where establishments have rehomed animals in good faith, and then it's been used as a campaigning tool against them. And I think it puts people off. Because you're trying to do the best you can, and then you get it thrown back in your face, which isn't very nice. […] I think that is a great shame, because you want the dogs to be rehomed! You want to give them a light at the end of the tunnel. And it's not going to happen if you do that, so I think you should try and use an alternative campaigning tool."*

Similarly, Ella suggests that reputational risks embedded in attempts to rehome meant some animals, which were potential rehoming candidates, were euthanised instead of being rehomed:

> *"With such a vicious cycle you don't want to be open about what you're doing and why you have these dogs, but how dreadful that normally—I mean not in our case, but normally that they just got stuck there! You could potentially be putting dogs to sleep just out of sheer, you know, needing to maintain this privacy around what is going on. It's very frustrating, and I know that urm, you know, having spoken to other NVSs, they have sometimes been under a lot of pressure to maintain the institution's interests and to not rehome out of fear of opening up questions exposing the company to criticism and I*

know they felt disappointed in themselves with euthanasia decisions rather than go down that road. So I think that's… that's a very sad state of affairs isn't it?"

Entangled in the accounts above are frustration and anger when rehoming is not attempted for fear of reputational damage. Thus, as chapter five showed us, rehoming can improve staff morale, increasing the circulation of hope, compassion and care, but failed rehoming attempts can have the opposite effect. This includes displays of exasperation when rehoming efforts were either unsuccessful, or not attempted, due to a lack of effective communication across organisational boundaries regarding expectations (Kerwin, 2006). These accounts also reveal the agency of the animal other, the power they hold in affecting humans (Greenhough and Roe, 2018) and therefore how they can be considered a stakeholder indirectly influencing rehoming debates and decisions. Although rehoming can build cultures of care, the practice can also be the catalyst for cultures of anxiety and risk. Consequently, it is possible to see how practices aimed at improving welfare are in a complex nexus, one that is enmeshed in changing public perceptions, the actions of bodies external to the laboratory, and in wider structures of regulation and governance (Davies et al, 2020).

8.8.2.2 Cultures of secrecy

A lack of effective communication across organisational boundaries can also prevent the pooling of resources that may increase rehoming success. As Charlotte, the manager of a rehoming organisation, reveals:

"Well, [the facility] were a bit more forthcoming with information after a while, at the start they were very hush hush because they were trying to get the animals out and they didn't want to cause any adverse publicity for the lab and then people wouldn't be able to get the cats."

Similarly, David suggests:

"When rehoming from a facility in the UK the biggest hurdle is the secret nature of the laboratories, which comes as a result of pressure from and fear of animal rights groups. As a result, we get very little information about such animals, even regarding their history once they are with us, which can be difficult from a conservation breeding or health perspective."

Unfortunately, a narrative of risk, coupled with distrust of external organisations, can limit the transfer of useful information across organisational boundaries, and to rehoming organisations, prospective owners, wildlife sanctuaries and/or zoos. As such, information and materials can become confined within organisational boundaries, and not always flow freely to those who may find them valuable. Human anxieties related to reputational risk may result in research facilities withholding information which they feel opens them up to public scrutiny, even if this information would lessen the resource load on other stakeholders. As such, although the transfer of information, materials and knowledge with animals as they are rehomed is valued, it does not always take place. Cultures of secrecy fortify organisational boundaries, and render practices of collaboration between those 'inside' and 'outside' of research communities challenging.

8.8.3 Rehoming thrives through a culture of discretion rather than openness: Overcoming communication risks

Although traditional discourses advocate that trust is mobilised through openness in animal research (O'Sullivan, 2006; Levin and Reppy, 2015; McLeod and Hobson-West, 2016), I find that, when rehoming, trust can be promoted through the security and assurance instilled by a lack of openness. In order to limit narratives of risk and instead stimulate trust, participants discussed the signing of non-disclosure agreements. These privacy clauses mean that the organisation, whether it be a zoo, sanctuary, or third-party rehoming organisation, receiving the animal cannot disclose the name of the laboratory they sourced the animals, or reveal details of the research in which the animal was involved prior to rehoming (Kerwin, 2006). Additionally, documents may state that the organisation accepting the animal must not be critical of the animal's condition, instead focusing solely on the successful rehoming of the animal. In effect, these legal documents prevent the transfer of information that could jeopardise stakeholder relations by preventing either party from speaking negatively of other groups, thus promoting flows of trust and goodwill across organisational borders. As Steven, who works for a rehoming organisation, reflects:

> *"We reach out to all the laboratories across the country on an annual basis, actively pursuing partnerships […]. Over the years we have developed relationships with labs, and we are very careful to keep confidences with non-disclosure agreements where requested."*

Alex, the manager of another rehoming organisation, discusses similar efforts to prevent the spread of negative information to potential new owners. Before my interview with Alex formally began, he

informed me of the non-disclosure agreement he had signed with a research facility, meaning he was legally unable to share some information during our interview. He explains how:

> *"We were restricted again in how much we could tell [the prospective owners]. We couldn't tell them the location. We went into brief details about the process that took place and the experimentation but… again, without disclosing too much. We had to be very careful about disclosing where the dogs were coming from to keep that relationship there, and if anything had come out negatively it could have had an impact on our relationship."*

Thus, the signing of non-disclosure agreements diminishes perceptions of risk. The existence of these documents reveals a wider acknowledgment that, although stakeholders may not share ideological beliefs, they can and do work together effectively when an effort is made to recognise the complex landscapes in which animal research is practiced. Although seemingly recognising the existence of organisational boundaries, these agreements ameliorate and lessen issues associated with negative publicity and resulting stakeholder conflict. Reaching mutual agreements fosters a communicative culture between stakeholders, and ensures long-term sustainability of collaborative practices. These serve both animals and staff. These novel regulatory agreements also help to unpick the complex and ever-changing network of relations and assurances across science and society with regard to humane animal treatment.

8.9 Cultures of communication: Trust

Trust operates at a number of scales including the "individual, interpersonal, institutional and socio-political" (Brownlie and Howson, 2005; pg. 235). It cannot be fully disentangled from openness discussed earlier in the chapter; Irwin (2006, pg. 306) notes that "trust, transparency and restored legitimacy are tightly coupled". Trust is crucial in creating a positive organisational reputation, and in (re)building relations with the public (Bandsuch et al, 2008). To earn and maintain trust, an organisation must be perceived as competent, reliable, and possessing integrity (Garbarino and Johnson, 1999; Auger, 2014). Judging trust is not a purely cognitive process, but instead based largely on the quality of the communication between stakeholders and an engagement in activities deemed to be ethical (Davies and Burgess, 2004).

Research advocates that public trust is integral to the success of biomedical research (Thomas, 1997); in fact the continuation of animal research is contingent on it (Davies et al, 2016). Shamoo and Resnik (2009) propose that the vast majority of the public trust that research scientists will not abuse animals. Trust is important in facilitating interactions between scientists and actants including

granting agencies, journals, universities, human and animal research ethical review boards, and other institutions involved in the funding, supporting, and overseeing of science (Hilgartner, 2000; Resnik, 2011). Yet, trust is also fragile, and in a perpetual state of uncertainty (Auger, 2014) varying over time (Ferdowsian and Beck, 2011) and space (European Commission, 2015). As trust is essential in rehoming efforts when they require the collaboration of multiple stakeholders, care should be taken to ensure it is not lost or damaged.

8.9.1 Challenges around building trust between stakeholders: Misleading terminology

Trust can be difficult to build, especially when groups are suspicious of the activities of others (McAndrew and Helms-Tillery, 2016). Although trust is gained through transparency (Thomas, 2008), it is jeopardised by misleading information (Holmberg and Ideland, 2010). This includes in potentially deceptive regulatory definitions. For example, the word 'rehomed' is currently employed by the Home Office (2015a) in their Advice Note 03/2015 to describe the process of an animal being moved from an "establishment to any other place that is not another establishment under ASPA". This means that farm animals used in research may be 'rehomed' to a slaughterhouse, or animals may be 'rehomed' to another research facility abroad to undergo experimental re-use. As the word 'rehoming' assumes a romanticised image in the public mind (specifically rehoming to a private family home as a loved companion animal), the use of the word in this context can be interpreted as misleading, or even intentionally deceptive. As Rose explains:

> *"One of the things I noticed when I was reading through the Home Office guidance actually was, I think you could rehome— they counted rehoming— if you transported an animal to another establishment. Now that to me is completely not rehoming. That is—I don't know the right word—that's transfer! It's not rehoming and I don't think you should think about rehoming—neither is sending an animal to an abattoir! I mean rehoming is taking an animal and giving it a home! Not moving an animal from one place to another. It's supply in that case isn't it? It's moving animals, well—to a zoo. For food."*

Holmberg and Ideland (2010) propose that research facilities cannot afford to be accused of secrecy, especially in animal research, which has a long history of igniting ethical and political controversies (Asdal, 2008). Although unlikely to be deliberate, employing the word 'rehoming' to describe an animal being sent to slaughter directly contradicts the belief that animal research should become more transparent to the public, including specific efforts to disclose details regarding animal welfare (McGrath et al, 2015). Using the word 'rehoming' to describe a situation of potential animal harm is also inconsistent with the framing of rehoming as an ethical practice that helps to instil a 'culture of

care' and improve the lived experience of laboratory animals (LASA, 2002; Döring et al, 2017; Wolfensohn, 2010).

As Thomas (2008) explains, public trust can be eroded if claims are made which do not adequately consider possible misunderstandings. As Reed (2012, pg. 251) defines openness as "a willingness to communicate meaningful information to others *in a spirit of trust* in the hope that such openness will bring mutual benefit" (emphasis added), use of the word rehoming in contexts which bring harm to animals (Smith, 2002) directly contradicts efforts to instil openness, and can be construed as dishonest. As such, the scientific community has faced criticism. For example, Dr Nick Palmer, the Director of Cruelty Free International, proposed that 'rehoming' to slaughter is an "Orwellian abuse of the English language" (Cruelty Free International, 2015). Hence, the practice of rehoming research animals can be fused with tension and can open up wider questions of how animals should be treated and, in turn, how (un)ethical behaviours are publicly reported and disseminated. Incorrectly reporting information reinforces organisational borders through further instilling the transmission of discourses which paint animal research as untrustworthy and even deceitful. In order to increase trust, the procedures of scientific activities should be conducted ethically and publicised accurately to minimise animal harm (Critchley, 2008; Reed, 2012).

8.9.2 Potentially 'unethical' rehoming practices challenge trust with public

Ethical complexities entangled in the reporting of rehoming are also evident in the accounts of those working in facilities. Facility staff reveal concerns regarding perceived 'unethical' rehoming practices which are not aligned with public expectations. I thus support Levin and Reppy (2015) in contending that the ethical principles established to deal with the dilemmas inherent in animal research are entrusted to be interpreted by individuals, and therefore the extent to which personal views intersect will determine how the ethics guiding animal research are situated both publicly and institutionally. This idea played out in this research, where Richard, a scientific researcher, explains he would be happy to 'rehome' mice to a zoo for reptile food, but worries about the wider public perception of this, and therefore is not comfortable with undertaking this form of rehoming:

> *"In actual fact, there is the reptile market, and they like rodents as food. Is it ethically justified? I mean, we'd kill the mice before and, you know, they're a by-standard breed because of their genetics – is it fair to make them available to the reptile food market? Now, you're not breeding other mice for the reptile food market, and you're breeding them in a very controlled environment. And then their carcasses are used? I mean, is*

that ethically justified? I think it probably is. It's not something we'd really like to do because of the negative connotations."

It is not just research facility staff who express reservations about rehoming mice as reptile food due to negative ethical connotations. Chloe, who works at a research facility, speculates that the zoo she contacted about the supply of dead mice did not reply to her emails because they did not "want to be associated" with her facility. This narrative discloses a wider public perception of the zoo as an 'ethical' space critical to wildlife conservation (Hutchins et al, 1995) and the laboratory as an 'unethical' space involving systematic and deliberate animal harm (Kolar, 2006):

"Regarding mice, I had contacted --because in the past I've worked places where mice have gone to people to feed to reptiles and snakes. Dead mice, obviously. But I did contact [a zoo] about that because we thought that would be a good place to donate wild type mice, but they didn't come back to me, I don't think they were very keen on that. […] I have made attempts but you know, the person just kept saying we'll get back to you, we'll get back to you, and they didn't at [the zoo] […] You know, I've got an email trail but they just don't come back. Maybe they don't want to be associated."

Facility staff are careful not to perpetuate negative discourses surrounding animal research by rehoming in a way which conflicts with romanticised public perceptions of laboratory animals as victims transformed into treasured family members (Weaver, 2013). Importantly, staff reflect that this might be why other stakeholders (such as zoo staff as above) are hesitant to work directly with research facilities. Interestingly, these worries persist even when 'rehoming' in this way would prevent other mice from being bred and killed for reptile food. Some forms of 'rehoming' thus have potential to limit wastage and thereby unnecessary external animal deaths (Doehring and Erhardt, 2005; Taylor et al, 2008). As such, 'rehoming' dead mice as reptile food can be perceived as both an ethical and economic imperative, representing a way to 'use' the bodies of surplus laboratory animals (Holmberg, 2010). This would help to negate an otherwise "dilemmatic situation" (pg. 47) where some animals go to waste, and can therefore, in the words of Richard, be "ethically justified".

These narratives reveal additional issues of trust. Facility staff have concerns that the public may lack trust in their institutions. Running parallel to this, scientific institutions display a lack of trust in the public to accept forms of rehoming which conflict with romanticised ideals, even when that rehoming may limit the killing of additional animals. This reveals a wider narrative in which perception drives decision-making, potentially at the expense of reality and logic. It is thus possible to view trust, both in

its existence and absence, as a cyclical process, whereby it grows or recedes based upon the wider flow of discourses and representations across stakeholders. This reveals complex perceptions of the value of animal life, of death and of suffering, and the role of trust and its effect on the construction, shape and maintenance of organisational borders.

8.9.3 Publicity from rehoming brings too much attention to ethically challenging practices in animal research

As the examples above demonstrate, those working in research facilities are wary of engaging in activities which may potentially mislead the public and be perceived as unethical, therefore feeding into the stigma already attached to animal research as a practice (Birke et al, 2007).

In this final section, I draw on Holmberg and Ideland's (2010) assertion that it is general perceptions of institutions and their cultures, and not real practices that matter in the trust league. Indeed, Siegrist (2000) suggests that the public generalise their trust toward scientific institutions, and as such efforts to ignite trust through novel practices (such as rehoming) may not guarantee success in garnering public support. In fact, facility staff feel portraying rehoming as a care-full practice (Buller and Roe, 2013) could potentially further public distrust and instead be interpreted as a tool to cover up activities deemed unethical. As Freya, manager of a research facility, explains:

> *"Some of them [the public] don't agree with having pets do they? So rehoming isn't going to wash. I don't know what the solution would be—I think their thing would be 'don't do [animal research] at all'. You can imagine the whole 'you're just trying to make yourselves feel better'"*

Peter, manager of a research facility, adopts a similar perspective, suggesting that rehoming will be interpreted negatively because as a practice it evidences that facilities have surplus animals to rehome:

> *"Whatever you do you're not going to win. Because the flip side of a successful rehoming is well – you have surplus in the first place. Or, you know, you obviously ordered in too many animals, so even with the five spare animals you had, you put them through unnecessary conditions for a certain amount of time. And then you try to get all ethical about it and say you've rehomed it and isn't it wonderful."*

Alice, a vet, suggests that rehoming might open up a facility to unwanted attention, indirectly revealing the numbers of animals used in research:

> *"You might think that research facilities might not want to [rehome] because that opens them up to the public and also lets them know how many animals there are, so if you've got 100 dogs coming through a shelter, the public suddenly know, you know, well, where have these 100 beagles come from? What's been done to them?"*

Revealing how those working in animal research internalise negative perceptions of their work, facility staff explain that, given the distrust some members of the public have of animal research, rehoming may be used against them. This reveals how organisational boundaries are internalised, and also play a role in creating and reinforcing identities, perception of 'self' and 'other', and governing acceptable behaviours.

Discourses such as these also reveal the complex boundary work in which scientists engage, where the public are construed as uninformed and judgemental of animal research (Hobson-West, 2012). These accounts further ingrain what Dixon (1999) terms a 'climate of mistrust' amongst the scientific community, the public, regulatory bodies and welfare organisations, and builds barriers to effective cross-stakeholder communication. They also reveal the challenges inherent in using the rehomed laboratory animal as a bridging device to unite organisations. Sometimes, rehoming is not enough, and the legacies of organisational boundaries persist, creating tension that cannot be appeased through rehoming alone. It is in these situations where communication, and the importance of reaching mutually agreed cross-stakeholder objectives, present themselves as crucial in appeasing tensions and increasing the possibility of rehoming as a tool to 'span' (Velter et al, 2020) boundaries.

8.10 Looking forward

The act of rehoming of laboratory animals brings together stakeholders both inside and outside of animal research in unique and complex ways, and offers a fascinating lens through which to probe complicated and often messy narratives regarding the nexus of stakeholder relations in scientific research. Rehoming is thus reshaping relations with organisations and publics outside of the laboratory. This chapter has explored the formal and informal contact between stakeholders which shape, and are shaped by, cultures of communication. By employing organisational boundary work and conceptualising the rehomed laboratory animal as a bridging boundary object (or 'spanning tool'),

this chapter has explored the organisation of animal research, and how expectations, communications and ingrained historical perceptions can result in stakeholder collaboration or conflict. It is important to note the impact that wider organisational politics have not only on people, but on the lived experience of laboratory animals (Lennerfors and Sköld, 2018) by impacting their potential to be rehomed. In order for rehoming efforts to succeed, it is imperative that communication based on trust and a recognition of organisational capacities, contexts and expectations (Davies and White, 2012) flows freely and unimpaired.

This chapter arrives at several key conclusions. The first attends to the inherent messiness of stakeholder relations in the rehoming debate. This involves a reflection on the intrinsic difficulties of accurately drawing organisational borders, and thus the shortfalls of the concept of organisational boundary work. For example, 'the scientific community' is a group of individuals commonly categorised together, yet they are still a varied assemblage with differing perspectives. Further, grouping them together arguably involves engaging in the very stereotypes that this chapter reveals creates rifts between organisations. Instead, Enticott (2017) discusses how different knowledge practices can shift and live together in what he terms a "fluid space". This reveals the difficulty in confirming identities neatly, suggesting they might be marked by gradients as opposed to boundaries. Despite the difficulties in assuming static organisational boundaries, this chapter has endeavoured to show how, when well planned, the rehomed laboratory animal can act as a bridging device across organisational borders, uniting them under one common goal and allowing them to engage in collaborative practices. These practices re-write traditional understandings of animal research, and open a space for the forging of new relations between rehoming charities, the public, animal welfare groups and experimental science, based on open mindedness, transparency, and accountability.

Second, the acceptance of stigmatised discourses regarding stakeholder practices leads to the fortification of organisational boundaries that creates an 'us' and 'them' narrative, entrenches positions, and negatively impacts potential collaborations as trust is eroded and narratives of risk enhanced. Indeed, rehoming is not guaranteed to act as a bridging device or spanning tool, and can instead reinforce organisational boundaries. As such, it is important that, as information, resources and ultimately trust, circulate between stakeholders, that rehoming is neither misrepresented nor used as a tool to further personal or organisational agendas. I follow Yeates and Reed (2015, pg. 504) in proposing that the lenses of communication in animal research should be "clear, […] uncoloured and straight." Not doing so creates cultures of hostility, and potentially prevents rehoming. Discourses that serve to proliferate and breed imaginaries of public mistrust impede engagements across perspectives and positions, and further cultivate secretive atmospheres. This means animals fail to benefit, as those well suited to rehoming are euthanised. Here, it is difficult to avoid the flow of

negative affects such as shame, fear, suspicion and judgement that circulate between humans, animals and environments.

Third, throughout this chapter, cultures of communication have presented themselves as crucial drivers in lessening the implications of cultures of secrecy, stories of risk, and challenges of trust building. The formation of novel practices and policies is context-dependent, and characterised by constant "negotiation, bargaining, and adjustment" between relevant interest groups (Walt, 1994). The mutual creation and abidance of novel regulatory and political agreements evidences this. These agreements limit the transfer of information which may contribute to reinforcing negative discourses around animal research, fortify organisational boundaries, and jeopardise efforts to rehome. These regulatory contracts seem to recognise the potential for problems to emerge, but, by predicting their possibility and negotiating solutions to them, their impact is lessened or nullified by a shared desire to provide animals with an extended and enriched life outside of the laboratory walls.

Collaboration comes in a variety of guises. It does not always involve large-scale harmonising of policies and significant restructuring of traditional practices (as seen in redesigning the lived environment of rehomed laboratory primates, or with long-term partnerships with third party rehoming organisations), but instead in the unique, intricate and embodied actions that enrich animal life and enable rehoming through knowledge sharing. The pooling of resources is a crucial characteristic of effective collaboration (Arnaboldi and Spiller, 2011), and can be met in small, intimate interactions, such as the transfer of hand written notes on an animal's behaviour, or walking a dog on a lead for the first time in the laboratory. These enable the rehoming process to run smoothly and lessen the burden on other stakeholders. It is in these situations that the rehomed laboratory animal acts as a bridging device (or 'spanning tool') across organisational boundaries and unites them under a common goal.

Finally, in order to increase chances of success, it is crucial that stakeholders be aware of the potential differing priorities, beliefs and expectations from the outset. Careful attention must be paid to historical trends of trust and other affects in the animal research nexus. Crucial to successful stakeholder collaboration is the production and long-term implementation of mutually agreed outcomes. Positive communication frameworks based upon trust and respect are particularly important in the face of difference in attitudes toward animal use, perpetuated by the circulation of discourses of animal suffering in laboratories. When planned effectively, rehoming remakes organisational boundaries, and cultivates and maintains novel cultures of care through innovative webs of collaboration. In order to limit the challenges associated with openness, risk and trust, which are reinforced and worsened by the dissemination of organisational stereotypes, expectations of

stakeholder collaboration should be continually re-circulated to maintain positive involvement (Arnaboldi and Spiller, 2011). Rehoming should be celebrated for what it is: a process intended to enrich and extend animal life, which results in the development of novel relations and spaces of care as traditional practices are reshaped in innovative ways, and historically solid organisational boundaries are bridged, often for the first time.

9. Chapter 8 - Conclusion

9.1 Introduction

This thesis has provided novel insights into the under-researched topic of laboratory animal rehoming through a more-than-human lens; in the process revealing the complex relations between care, death, animal welfare, moral responsibility and, more generally, the value of animal life. Despite increasing popularity and the acknowledged benefits the practice can bring in enhancing cultures of care, improving animal welfare, cultivating staff morale, and more generally facilitating the flow of positive affects such as hope, pride, and optimism in a controversial and socio-ethically challenging landscape, little research has explored the practice (Döring et al, 2017). I find rehoming to be an innovative practice involving the (re)circulation of animals beyond the boundaries of the laboratory, in turn revealing the permeability of boundaries surrounding the identity and categorisations of the animal other, and how, in the context of animal research, care is continually provided to animals that surpasses legislation and reveals that staff care *about*, not simply *for*, laboratory animals. Rehoming is reshaping human-animal relations, in turn modifying regulatory guidance, the capacities in which staff can show care, the wider political and organisational landscape of animal research, and is introducing new ways in which we can live with laboratory animals.

The first empirical chapter, Chapter four, drawing on the results of a semi-structured quantitative questionnaire, provided context through the delivery of an overview of current UK laboratory animal rehoming practices. It found that rehoming is relatively common, although undertaken with small numbers of animals. It reinforced literature which recognises the benefits of rehoming, while attending also to why some facilities feel rehoming is not an option for them in terms of biosecurity risk, the requirement for animal tissue post-research, and concerns regarding decreased standards of animal care outside of the facility.

Chapter five explored why rehoming occurs, and how conceptualising care as fluid helps us to understand how the positive affects instilled by caring practices flow across organisms, people and even infrastructures. Through rehoming, animals are provided with an extended and enriched life, staff are alleviated from guilt and shame, and cultures of care flourish. Drawing on Milligan and Wiles' (2010) landscapes of care concept, I show how facilities that had embedded rehoming into their affective atmospheres found the practice to be crucial to the cultivation of their individual identities.

Chapter six attended to how rehoming results in a wider reshaping of animal identities and socio-legal categorisations. Through processes such as training and socialisation, animals 'become pet' and are

permitted to transgress the boundaries that define them as 'laboratory animals'. Through adoption, animals are shaped, behaviourally and physiologically, to the domestic space, transforming their behaviour, empowering them to flourish, and enabling their individualisation through processes such as naming. By rehoming, animals move away from being mere representations of human tissue, and possess what Koch and Svendsen (2015, pg. 372) term a "morally valuable life". They transform from "living objects" (Koch and Svendson, 2015; pg. 370) and "lively commodities" (Barua, 2016) to intrinsically valued individuals with a right to life.

Finally, chapter seven, drawing on organisational boundary work, explored the wider nexus of stakeholder relations entangled in efforts to rehome. I have demonstrated how rehoming can bring differing organisations, both inside and outside of the scientific community, together under a collaborative framework and a community of trust. Here, the rehomed animal can represent what Velter et al (2020) term a 'spanning tool', bridging boundaries between organisations which typically differ based upon disparities in expectations and priorities. However, uniting organisations under rehoming was revealed to be inherently complex due to the circulation of negative affects such as fear, judgement and secrecy, in the process illuminating the difficulties of igniting trust between organisations which historically hold conflicting values with regard to the use of animals.

This thesis has moved beyond current understandings of laboratory animal rehoming, which use physiological measures of wellbeing, and solely quantitative questionnaires with new owners to judge rehoming success. These methods risk overlooking more complex affective, embodied and emotional factors at play, and offer little consideration of how animals shape and influence the practices and performances of rehoming. These complexities, which reveal intimate human-animal relationships based on a shared bodily vulnerability and multispecies attunement, are accessed only through interviews and ethnographies that account for the agency of the animal other.

In order to give animals a voice, this thesis has endeavoured to "bring the animal in". By employing a more-than-human framework, the animal has been actively integrated into the deliberations, debates and discussions of this thesis. Throughout, animals have been acknowledged as active participants in the rehoming process, continually shaping and re-shaping the ways in which the practice unfolds. The recent emphasis toward a consideration of rehoming demonstrates a desire to respond to the needs and wants of the animal other - in the process seemingly recognising that animals are individuals with the capacity to want, and to need. When considering why rehoming is attempted, we see the emergence of complex human-research animal bonds (Bayne, 2002), whereby the animal is directly embedded in facilitating and maintaining these relations. Animals look at us, they speak back, and they may ask, in a way that does not involve traditional language, to be considered for rehoming.

Thus, research should attend to the intricate specificities of human-animal relations, and view animals not as mere blank canvases onto which to project and impose human understandings. Indeed, animals communicate in complex ways, based on fleshly interactions and body-to-body work (Holland, 2018). Here, attention to the nonverbal emerges as fundamental.

As a result of the acknowledgement of animals as in possession of agency, we see rehoming schemes 'tinkered' to the animal in question. These tinkerings account for specific behaviours and characteristics, and have at their heart a recognition of animals as individuals. Schemes, including training, socialisation, and the design of new enclosures post-rehoming, are tailored to each being; they cannot be applied to all animals, or even all species uniformly. Animals are not interchangeable or generic. This thesis evidences direct attempts to incorporate an animal's needs and desires into rehoming decisions that enable them to flourish as individuals. Animals are given the opportunity to respond, and be responded to. We also see animal agency emerge in the capacity to resist attempts at domestication. It would appear some animals are chosen to 'become pet' when this identity and categorisation, and the expected behaviours accompanying it, are not compatible with the individual temperament of the animal. This shows a recognition of the animal as a distinct, sentient being which (re)defines, (re)enacts, and (re)enables regulation guidance, and practices undertaken in, animal research.

Emerging as crucial throughout the thesis has been the influence of species in determining rehoming decisions, policy and practice. It would appear, perhaps unsurprisingly, that some species are simply more likely to be rehomed. These species are typically dogs and cats, whose rehoming has also elicited significantly more academic attention from both the social and natural sciences (DiGangi et al, 2006; Döring et al, 2017; 2018, Carbone et al, 2003). Through practices of kinship (Charles, 2016) these species possess a greater potential to respond and interact with humans, and there is increased moral concern amongst the public toward these species (Döring et al, 2017), which in turn pressures facilities to consider their rehoming. There is also an ingrained cultural and historical belief that these animals belong in the home, evidenced through the emergence of 'post-human households' (Power, 2008). This compounds the belief that dogs and cats in particular should not be in the research facility at all. Of course, these factors both impact, and are impacted by, one another; it is because of an accepted cultural belief that these animals belong in the home that the public take issue with their routine use and culling in animal research. Equally, it is because of their greater potential to respond to humans - Serpell (2005, pg. 131) explains that human–pet relationships are "based primarily on the transfer or exchange of social rather than economic or utilitarian provisions" - that bond development with cats and dogs is more likely in the laboratory.

However, this thesis also finds that any animal can be considered for rehoming, including small rodents, fish and amphibians. Despite evidence of the standardisation and the ontological reduction of these species, this was not routine and uniform. Instead, intimate and affective bonds were fostered between staff and rodents, amphibians and fish. These bonds, based on an 'attunement' (Despret, 2004), 'attentiveness' (Druglitro, 2016) and a 'response-ability' (Haraway, 2008), help to show that multi-sensual bodily encounters do not elude rodents, fish and amphibians. In fact, I echo Greenhough and Roe (2018) in arguing that staff regularly build relations with less charismatic, engaging and appealing animals. Thus, we need to pay attention to the "fleshy bodily and emotional susceptibilities, potentialities and vulnerabilities" (pg. 371) of all non-human others. Doing so helps to unpick complex human-animal relations and shows the multitude of ways it is possible to live with a diversity of laboratory animals. It should be noted that these less charismatic species were more likely to be rehomed specifically to staff who had the opportunity to develop bonds with them (Bayne, 2002), and that these staff acknowledge that public demand for the rehoming of these species would be lacking. This was especially true for genetically modified animals, which are often conceptually, legally and physically confined to the laboratory and the role for which they were bred.

Rehoming allows staff to relate to, and equally engage with, animals in a novel way that differs from the typical forms of interaction in which they carry out licensed procedures, administer anaesthetics and analgesics, and cull animals (Greenhough and Roe, 2018). Yet, this process is complex. Much like the ambiguous nature of laboratory animals, which can at once be considered co-workers, a data point, a research participant, a companion, and a lifesaving hero, deciding an animal can only be considered a pet when removed from the facility ignores the existence of human-animal bonds within the laboratory. In fact, within the laboratory space animals were considered pets, set aside from euthanasia and kept in 'pet cages' to live out their remaining days. Animals can thus dissolve the categorical boundaries that make them a laboratory animal without leaving the facility, revealing the liminal position of the animal, and demonstrating the complexity of boundaries that are not equally permeable and crossed uniformly.

9.2 Attending to and unpicking boundaries

Emerging as important throughout this thesis has been the significance of boundaries. As Cassidy (2001, pg. 195) suggests, "humans and animals can be seen to inhabit complex webs of meaning in which all sorts of apparent "boundaries" are proving increasingly permeable". Exploring rehoming practice provides a mechanism through which to dissolve, transgress and bridge boundaries, and reveals the existence, and often purpose, of their initial construction. Investigating the rehoming of

laboratory animals has illuminated multiple boundaries: 1) boundaries of concern, including why certain animals (such as those genetically modified) are less likely to be considered for rehoming, 2) those symbolic, which relate to research animals transforming their identities to become pets, 3) those spatial, which relate to the tangible boundaries of the laboratory, which are traditionally sealed for animals except for research purposes, and finally 4) those organisational, as organisations which do not typically collaborate are brought together with the shared goal of providing one animal, or numerous animals, with a life after the laboratory. Indeed, and as Lamont and Molnar (2002) argue, boundaries are not simply conditions for separation and exclusion, but also for communication, exchange, and inclusion (Lamont and Molnar, 2002). It is valuable to explore boundary-making practices as they operate as powerful structuring devices, and a way to make sense of how actors use boundary work to practise and perform work in the laboratory.

Yet, these boundaries are not divorced from one another, but instead inform one another in a complex web of interlocking boundaries and borders. For example, a shift in identity can occur without a simultaneous spatial transgression (i.e. animals can be considered a pet without leaving the facility). Further, rehoming does not always unite organisations, and can instead pit them against one another as they use rehoming to further their independent agendas, further solidifying organisational boundaries and markers of difference. Finally, this thesis has shown that boundaries of care are inherently based on both personal and spatial factors. Individual beliefs and affective facility atmospheres work to regulate what humans feel they can do, and what kinds of possibilities, and new ways of living, it is possible to have with laboratory animals. Boundaries are flexible, and are drawn and re-drawn in ambiguous and ever-changing ways (Hobson-West, 2012).

Thus, we see both the rehomed laboratory animal, and rehoming practice, as not fitting into neat categories or standards, but instead representing both an inter-categorical being and an inter-categorical process, straddling multiple residual categories based on a nexus of cultural, regulatory, historical and economic factors. What these stories tell us is that each rehoming case is different, meaning the boundaries that are transgressed (or, equally, fortified) will vary dependent upon the individual animal, the species to which they belong, the individual/organisation responsible for rehoming them, and the facility in which they were previously housed. To care, therefore, is complex and intricately embedded in the wider spaces in which it is practised (Donald, 2018). Yet, there is "real power in moments of categorisation" (Hobson-West, 2012; pg. 661). What holds classifications together is society, and therefore directing attention to the boundaries reveals how societal and institutional practices are created and sustained. We need to pay attention to the categorisations of topics, practices, people, and animals, and importantly the impact of these categorisations on the organisation of work across different spaces, including the animal laboratory.

Boundaries which categorise laboratory animals as such are continually shaped and reshaped to ensure animals adapt physically and behaviourally to domestic, material, and temporal expectations of the home space and its routines. This introduces new ways in which to live with laboratory animals which do not rely solely on the use of their biological bodies to further science. Doing so also dissolves the boundaries between human and animal: as animals are brought into the human home space, they contribute to the development of post-human, or hybrid, families. In keeping with Latimer's (2013) "being alongside", the divisions between the human and the animal are consequently challenged. Through daily interaction and an intimate sharing of space (including stretching on the carpet or sleeping on the sofa), animal difference is balanced with individual subjectivity and personhood which increases the possibility for relations to evolve which are not based on the utilitarian use of animal bodies to further science, as they might otherwise be in the laboratory.

Rehoming continually (re)makes, (re)affirms and (re)challenges boundaries in novel, innovative, and exciting ways. This thesis has furthered Wainwright et al's (2006) assertion that ethical and caring practices are embodied and mediated through complex culturally constructed boundaries (Wainwright et al, 2006). Rehoming defies and resists clearly defined and neatly bounded identities as people, ideas, animals, knowledge and materials flow between, across and within facilities. In fact, it is in studying the properties of boundaries that we reveal their permeability, durability, visibility and the conditions under which they assume certain characteristics. Rehoming as a practice represents a way through which to reveal complex relations with the animal other, and help to navigate the wider and often multifaceted landscapes in which animal research is practiced.

9.3 Implications of the research

The findings of this research will prove useful for policy-makers. Understanding how caring spaces emerge that allow laboratory animals to be rehomed and enable animals to flourish is not only of scholarly interest, but is also vital for policymakers, scientists, animal caretakers and organisations working to improve animal welfare in the laboratory. By providing an understanding of rehoming from the perspective of UK research facilities, appropriate policy and support can be provided to them. This thesis, particularly chapter four, has endeavoured to divulge best practice when rehoming, and has demonstrated the importance of ensuring rehoming conforms to legal guidelines, including choosing appropriate animals, training and socialising them as necessary, and effectively selecting and preparing owners. Importantly, and seemingly in a recognition of animal personhood and individuality, I found schemes to be 'tinkered' to specific animals. Following policy is also crucial in limiting narratives of risk and the circulation of negative affects such as anxiety, judgement and

secrecy. It is hoped that this thesis has supported facilities in choosing to rehome their animals, and enhanced current understandings regarding both characteristics of facilities participating in the practice, and how they do it, in order to disseminate the information to institutions not currently active in this area and, more widely, to ensure that the benefits rehoming offers to animals, people, infrastructures, and even whole fields of research, are reaped.

Theoretically, this thesis has opened up new lines of enquiry for cultural geographers. Cultural geographers have long conceptualised the domestic home as open and dynamic, shaped as much by those outside the space as those inside (Massey, 1992), but laboratories have been traditionally depicted as closed, secretive and bounded places from which non-human bodies are not permitted to leave and move out of that world. However, rehoming overwrites these narratives, revealing that animal life does not have to end in the laboratory. Research should thus theorise the laboratory not as a 'black box', in which discussions of the space are reduced to attending to static inputs and outputs, but rather recognise the internal complexity of practices and relationships that unfold between heterogeneous actants (Latour 1999) and their flows across, between and within facilities. The laboratory is an open, dynamic and sometimes even hybrid space through which materials and knowledge circulate. For example, infrastructures transform through the building of 'socialisation rooms' and training facilities, and diverse people and animals flow throughout the spaces of the laboratory in an attempt to aid in environmental enrichment and prepare animals for a life after the laboratory.

Conceptualising the laboratory as a hybrid zone challenges traditional assumptions about the scientific community and the practices in which they engage. Although the norm, not all animals die in the laboratory. Euthanasia does not represent the indisputable pathway. This reflects a wider shift in the atmospheres of animal research, and illuminates the desire on the part of facility staff to provide animals with a good quality of life, not simply one free from suffering. Made possible through a recognition of the needs and wants of the animal other, this form of thinking paves the way for a more robust and refined form of animal experimentation that sees animals as valued intrinsically, in turn opening up new spaces in which to care-well (Buller and Roe, 2018).

However, this thesis has also uncovered the difficulties and complications bound up in efforts to rehome. Rehoming is not always an easy undertaking. Chapter four revealed that some animals are simply deemed materially and symbolically ineligible for rehoming, and even those facilities that were rehoming found the process time consuming and resource-intensive. Chapter seven showed us that embarking on the practice carries risk, and does not always break down borders, but can instead reinforce them. There existed worries regarding laboratories rehoming solely to improve their public

image, and equally stories of sanctuaries and zoos using rehoming as a tool to cast a negative light on animal research. Further, chapter five demonstrated that rehoming is not always guaranteed to succeed; staff recounted stories where they felt the new owner had failed in their duty to properly care, and reflected on the sadness and despair of unsuccessful rehoming attempts. In these contexts, rehoming represents a new way to explore how liability, risk, trust and responsibility circulate in animal research and the tangible outcomes these affects can foster. As LASA (2002) policy states: rehoming should never be romanticised. In fact, sometimes acting on an impulse to care does not involve the extension of animal life, but instead the intentional act of ending it. As previous research reflects, it is possible to display a "mortal love" embedded in acts of 'killing well' (Holmberg, 2011), which gives staff the ability to prevent an animal from experiencing avoidable suffering. Despite narratives of deliberate animal harm in the laboratory, and relations in the domestic space typically characterised by love and kinship, I have shown that rehoming should only be attempted when it is safe, and the best option for both the facility and the individual animal involved.

9.4 Future research

This research has opened up avenues for further study. Although this thesis has attended to all animals, it has explored the rehoming of laboratory dogs and other large mammals in more detail. However, and in order to answer calls to expand the circle of moral concern (Lund et al, 2007), research should also focus on animals that are not just "big like us", and instead explore the rehoming of fish and insects. Chapter four showed us that the rehoming of these species was occurring, and attention should now be directed to the channels through which these species are rehomed and how they might also be included in caring frameworks. As Bear (2011) posits, further emphasis should be assigned to non-mammalian life forms within multispecies scholarship. These species can open up new ways to care, and help us to realise the diversity of affective encounters beyond those species that are in possession of so-called "cuddly charisma" (Lorimer, 2005; pg. 919). I echo calls to bring in all animals, not simply a privileged few.

Further, this research has focused solely on rehoming, and not its twin concept of release. Yet, release to the wild is also possible, as the Home Office Advice Note 03/2015 states:

> *"Scientific research, that requires the capture of animals taken from the wild and their subsequent release at the end of regulated procedures, must be considered and planned*

to minimise any potential impact on the local population and any stress caused to the released individual animal(s).”

Although similar to rehoming, research in both the natural and social sciences should not neglect this area; and should instead explore how the political and regulatory landscapes that are navigated shift when the animal is considered ‘wild’. How does this change the boundaries that are transgressed? Is it possible to truly re-wild animals, and, equally, are wild animals ever really considered ‘laboratory animals?’ Future research should seek to disentangle how transposing animal research to locations outside of the laboratory poses new questions and challenges for human-animal relationships, and how the questions raised are different when an animal is not rehomed to the private and bounded home or sanctuary, and instead released to the wild where their animobilities can be less tightly controlled. Tied to this, and although I have discussed the risks entangled within the practice of rehoming genetically modified animals, further research should explore biosecurity risks, and how they might be amplified in the context of release to the wild.

Theoretically, boundary work (Gieryn, 1983) and boundary object (Leigh Star, 1989) theories have provided fertile territory for exploring the rehoming of laboratory animals. Research should continue to bring these theories into conversation with the more-than-human, as boundaries are exciting places in which to direct attention. Research has long recognised the boundaries established between the human and the animal in order to maintain human exceptionalism, but studies should now seek to explore how other boundaries are constructed and maintained which govern human-animal relations, and how the dissolving of these boundaries may introduce new ways in which to live with animals. Indeed, Lamont and Molnar (2002) argue that the flow of capital, technologies, goods, and people across borders can help to unpick and understand complex culturally and historically constructed borders. Yet, and as does much research in the social sciences, they neglect animals. Instead, we should be asking; ‘but what of animals?’ What can animals add to discussions of boundaries and borders?

Finally, future research should explore the lines, webs or nexus (Davies et al, 2020) of communication between the scientific community, the public, and animal welfare organisations, as so doing raises powerful and important questions about how animal research ultimately rests on social contracts with the public. Existing work tends to isolate investigations to the laboratory space specifically, without acknowledging the fact that practices undertaken and regulation followed in that space is done based on intimate and complex networks of relations that span well outside of its borders. Doing so helps to demonstrate the value of nexus approaches which foster opportunities for more collaborative research and policy to address multidimensional challenges, and demonstrates how the

regulation guiding animal research is contingent on a complex network of relations and assurances across science and society (Davies et al, 2020). Rehoming has provided a fruitful practice in which to illuminate these, but further work should be undertaken which attends to the social contracts, whether formal or informal, made between the scientific community and external others. An intricate attention to, and recognition of, these discourses will help to overwrite traditional stigmatised and polarised narratives which serve only to propagate negative atmospheres, foster secrecy around animal research, further public mistrust, and impede engagements across different positions and perspectives.

Rehoming is beneficial for staff, animals and the ethical profile of animal research. The practice crucially illustrates a caring *about*, not simply for, animal life in the laboratory. Rehoming represents a surpassing of existing ethical frameworks which guide animal research and advocate a limiting of animal suffering, and crucially demonstrates the emergence of a new landscape in which novel ethical and moral practices flourish to provide animals with an enriched and extended quality of life. It is in this framework that we see animals valued intrinsically and as an individual with a right to life, helping to counteract the perspective that the lives of all laboratory animals end in the facility. Rehoming thus continually shapes and reshapes the spaces of the research laboratory as practices change, instigating a wider and more significant shift in the landscapes of animal research. Rehoming illuminates the potential all animals inherently possess to be, or live, another way, which is seemingly incompatible with the routine processes of standardization, objectification and rationalisation of the laboratory space (Kirk, 2016).

Building on this, I want to close by arguing that rehoming provides a valuable process through which to illuminate which animal lives are valued, and which undergo the routine passage of life that ends in routine euthanasia. This thesis has demonstrated the complex roles of life and death in the laboratory, and all of the organisms, people, infrastructures, regulation and ethical and moral frameworks embedded in the process of intentionally extending animal life. Rehoming can be conceptualised as an act of resistance, a way to show whose lives matter, and whose have meaning (Gillespie, 2016). Rehoming allows us temporarily to escape the economy of the research laboratory, and provides an act through which to resist and push against the standardised and instrumental relations that permeate throughout laboratory practices and regulation. The kind of care shown through rehoming is complex; it is fluid and relational, limited and limitless. In short, the practice of rehoming laboratory animals presents itself as the start of complex ethical debates around care, morality, responsibility, suffering and, ultimately, of life and of death.

10. References

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11. Appendix

A: Participant information sheet

Participant Information Sheet

Study Title: The Changing Policy and Practice of Laboratory Animal Rehoming

Researcher: Tess Skidmore

ERGO number: 32026

Please read this information carefully before deciding to take part in this research. It is up to you to decide whether or not to take part. If you are happy to participate you will be asked to sign a consent form.

What is the research about?

My name is Tess Skidmore, and I am completing a PhD funded by the Wellcome Trust. The research forms part of the 'Animal Research Nexus', a wider project in collaboration with 4 other universities (Oxford, Exeter, Manchester and Nottingham). There is currently an increasing emphasis on the rehoming of research animals. The main aim of this research is to investigate the spaces of care that are emerging in the field of biomedical science, and to examine how this changes broader relations between experimental science and rehoming charities.

Why have I been asked to participate?

You have been asked to take part because you may, through your occupation or your personal life choices, have played a role in the rehoming of laboratory animals. Your involvement may have been in the initial stage in the laboratory setting (staff at the research facility), the transition stage (rehoming charity), or even have previously rehomed an ex-research animal (whether in a private home, zoo, sanctuary or farm). I am interested in investigating your views and experiences of laboratory animal rehoming, and how you feel it could be done differently.

What will happen to me if I take part?

I plan on interviewing each participant once, and each interview should last approximately 30 minutes – to an hour. I will ask semi-structured questions using a previously composed

set of questions. I will travel to you, or a telephone/Skype interview can be undertaken. I intend to audio-record the interview.

Are there any benefits in my taking part?

It is hoped that this research will shed light on the current process of laboratory animal rehoming, and make it more commonplace in the future as opposed to the standard euthanasia which is more commonly pursued. It is therefore hoped that the project will encourage research facilities to consider rehoming their animals, in turn providing an increased quality of life for the animals involved.

Are there any risks involved?

There is a small possibility of psychological discomfort due to the topic of the interview and its focus on animal research.

Will my participation be confidential?

Your participation will be confidential and anonymised within the research. I may refer to your general occupation (such as 'biomedical researcher' or 'employee at rehoming organisation'), but only if this does not function as an identifying characteristic. No names will be included. I will also ensure that the facility/organisation you work for will not be disclosed, so that you are in no way identifiable. Any knowledge I have of your identities and organisations will be safeguarded within my research. Identifying characteristics such as the location of relevant organisations will also be anonymised. The research I undertake will be in full compliance of the Data Protection Act and University of Southampton policy. All information will be stored on a password-protected computer.

The data may be shared with my supervisor (Dr. Emma Roe) and other members of the Animal

Research Nexus.

What should I do if I want to take part?

If you would like to take part, please reply to the initial email I sent you (from T.A.Skidmore@soton.ac.uk) and state that you are happy to participate in the research.

What happens if I change my mind?

You have a right to withdraw at any time without your rights being affected. I will retain and use the data collected until the point of withdrawal. If you withdraw part way through the research process, I will delete any data collected up until that point.

What will happen to the results of the research?

After the interview has been completed, I will listen to the audio recording and transcribe the interview conversation. I will then code the data to identify themes. The results will then be written up, and possibly published. You are welcome to receive a copy of the work if you

would find it beneficial. The data collected will be stored for 10 years, in accordance with University of Southampton policy.

Where can I get more information?

You can contact me at T.A.Skidmore@soton.ac.uk, or my supervisor Emma Roe (E.J.Roe@soton.ac.uk) if you have any queries regarding the project. You can also contact Gail Davies, who is leading the wider Animal Research Nexus project. She is contactable through the email G.F.Davies@exeter.ac.uk.

What happens if something goes wrong?

If you are concerned and/or have a complaint, please contact the Research Integrity and Governance Manager (on 023 8059 5058, or at rgoinfo@soton.ac.uk).

Thank you.

Thank you for taking the time to read the information sheet and considering to take part in the research.

B: Consent form

CONSENT FORM

Study title: The Changing Policy and Practice of Laboratory Animal Rehoming

Researcher name: Tess Skidmore

ERGO number: 32026

Please initial the box(es) if you agree with the statement(s):

I have read and understood the participant information sheet (*20/3/2018/version no.2*) and have had the opportunity to ask questions about the study.	
I agree to take part in this research project and agree for my data to be used for the purpose of this study.	
I understand my participation is voluntary and I may withdraw at any time for any reason without my rights being affected.	
I understand that my interview will be audio recorded.	
I understand my responses will be anonymised in reports of the research.	

I understand that I may be quoted directly in reports of the research but that my name will not be used.	
Data Protection *I understand that information collected about me during my participation in this study will be stored on a password protected computer and that this information will only be used for the purpose of ethically approved research studies.*	

Name of participant (print name)……

Signature of participant……

Date……

Name of researcher (print name)……

Signature of researcher ……

Date……

C: Questionnaire

Questionnaire on laboratory animal rehoming

Section 1 - Role and Background

1) Name of research facility:
.....

2) Your current role:
.....

3) Main areas of research/education/conservation or other work undertaken by facility:
.....
.....
.....

Section 2 – Animals kept at facility

4) Animals currently kept at facility (please tick all that apply)

- ☐ Amphibians
- ☐ Cephalopods
- ☐ Fish
- ☐ Common quail
- ☐ Other birds
- ☐ Mice
- ☐ Rats
- ☐ Hamsters
- ☐ Gerbils
- ☐ Guinea pigs
- ☐ Rabbits
- ☐ Ferrets
- ☐ Goats
- ☐ Sheep
- ☐ Cattle
- ☐ Pigs
- ☐ Horses
- ☐ Cats
- ☐ Beagles
- ☐ Other dogs
- ☐ Non-human primates
- ☐ Other (please elaborate in the space below)

5) Numbers kept of each type of animal at this time (please insert number kept next to the animal)

- ☐ Amphibians
- ☐ Cephalopods
- ☐ Fish
- ☐ Common quail
- ☐ Rats
- ☐ Hamsters
- ☐ Gerbils
- ☐ Guinea pigs
- ☐ Goats
- ☐ Sheep
- ☐ Cattle
- ☐ Pigs

- [ ] Other birds
- [ ] Mice
- [ ] Rabbits
- [ ] Ferrets
- [ ] Sheep
- [ ] Horses
- [ ] Cats
- [ ] Beagles
- [ ] Other dogs
- [ ] Non-human primates
- [ ] Other (please elaborate in the space below)

Section 3 - Rehoming policy

6a) Does your facility have a rehoming policy?

- [ ] Yes (complete questions 6b and 6c)
- [ ] No (Complete questions 6d and 6e)

6b) Would it be available to this study?

- [ ] Yes
- [ ] No

6c) If yes, please email the policy.

6d) What are the facility's reasons for not having a rehoming policy?

6e) Does the facility have plans to consider such a policy in the future?

7) Regardless of whether your facility has a formal policy in place, has your facility rehomed animals in the last 3 reporting years (2015-2017)?

- [ ] Yes (Continue as normal with question 8)
- [ ] No (Go to question 13)

8) Do you have records of the animals rehomed over the last 3 reporting years (2015-2017)?

- ☐ Yes
- ☐ No (Go to question 11)

9) Which types of animal has your facility rehomed over the last 3 reporting years? (2015-2017)

- ☐ Amphibians
- ☐ Cephalopods
- ☐ Fish
- ☐ Common quail
- ☐ Other birds
- ☐ Mice
- ☐ Rats
- ☐ Hamsters
- ☐ Gerbils
- ☐ Guinea pigs
- ☐ Rabbits
- ☐ Ferrets
- ☐ Goats
- ☐ Sheep
- ☐ Cattle
- ☐ Pigs
- ☐ Horses
- ☐ Cats
- ☐ Beagles
- ☐ Other dogs
- ☐ Non-human primates
- ☐ Other (please elaborate in the space below)

10) How many of each animal has your facility rehomed over the last 3 reporting years? (2015-2017) (please insert number rehomed next to the animal)

- ☐ Amphibians
- ☐ Cephalopods
- ☐ Fish
- ☐ Common quail
- ☐ Other birds
- ☐ Mice
- ☐ Rats
- ☐ Hamsters
- ☐ Gerbils
- ☐ Guinea pigs
- ☐ Rabbits
- ☐ Ferrets
- ☐ Goats
- ☐ Sheep
- ☐ Cattle
- ☐ Pigs
- ☐ Horses
- ☐ Cats
- ☐ Beagles
- ☐ Other dogs
- ☐ Non-human primates
- ☐ Other (please elaborate in the space below)

Section 4 - Problems/risks encountered when rehoming

11) Has your facility encountered any issues during the rehoming process?

- ☐ Yes (go to question 12)
- ☐ No (go to question 13)

12) Please tick all that apply

- ☐ Some animals are unsuited to rehoming
- ☐ New owners not able/wanting to keep animal
- ☐ Costly process
- ☐ Time consuming
- ☐ Difficulty networking with relevant organisations (e.g. rehoming organisations/sanctuaries)
- ☐ Difficulties finding suitable homes/sanctuaries
- ☐ Attracted negative media attention
- ☐ Other (please elaborate in space below)

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Section 5 - Opportunities presented by rehoming

13) Which of these benefits does rehoming offer to your facility? (Please tick all that apply)

- ☐ Shows a positive ethical stance
- ☐ Good for staff morale
- ☐ Expectation of future wellbeing of animal
- ☐ Opportunity to develop networks with rehoming charities and the public
- ☐ No opportunities presented
- ☐ Other (please elaborate in space below)

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Section 6 - The rehoming process (please go to question 19 if your facility does not rehome animals).

14) What measures does your facility take to determine whether or not an animal is suitable for rehoming?

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15) Which of these measures does your facility take to prepare animals for rehoming (select N/A if group of animals is not kept):

	Training	Socialisation with people	Socialisation with other animals	Medical procedures (microchipping, neutering)	Exposure to new environments	None	N/A
Amphibians							
Cephalopods							
Fish							
Birds							
Rodents							
Livestock							
Horses							
Cats							
Dogs							
Non-human primates							

16) What methods does your facility use to find homes for the animals?

- ☐ Advertisements (online/newspapers/posters/flyers/mailing lists)
- ☐ Animals rehomed to staff/staff contact
- ☐ Animals are transferred to rehoming charities who undertake this process
- ☐ Word of mouth
- ☐ Other (please elaborate in space below)

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17) Does your facility have criteria that potential owners must meet, such as prior experience of the species?

- ☐ Yes (please elaborate in the space below)
- ☐ No

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18) Does your facility prepare owners?

- ☐ Yes (please outline this process in the space below)
- ☐ No

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Section 7 - Reasons for choosing not to rehome research animals (if you rehome animals, please go to section 8)

19) If you are not rehoming animals, why is this? Please tick all that apply.

- ☐ Monetary issues – lack of funding
- ☐ Convenience – easier to euthanise
- ☐ Fear of unwanted or negative media attention
- ☐ Concern for the animal's health if it were rehomed
- ☐ High demand for animals means few are left to retire
- ☐ Worries regarding being seen to support animal rights campaigners
- ☐ Too stressful for the animal
- ☐ Difficulties with transportation
- ☐ Difficult to assess long-term health implications
- ☐ Loss of control – once rehomed facility cannot be responsible for animal's welfare
- ☐ Not aware that it is possible
- ☐ Never previously considered it
- ☐ Other (please elaborate in the space below)

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Section 8 – Future interviews

20) As part of my research project, I will be conducting a number of telephone and face-to-face interviews. These will aim to understand the rehoming process in a little more depth. Would you consider participating in an interview at a later date?

- ☐ Yes (Thank you. Please insert below the email address you would prefer to be contacted on to arrange a time and date)
- ☐ No

Email address:

.....

.....

Section 9 - Early access to results

As you have completed the questionnaire, you are entitled to a summary of the results of the survey before the wider project results are released. Would you like a summary of the results?

☐ Yes

☐ No

If yes, please leave your email below. The email will not be used for any other purposes.

Email address:

.....

.....

D: Interview schedule

Draft schedule of questions (to be edited)

Questions for researchers/laboratory technicians:

1. How you do feel about the rehoming process? Is it possible?
2. Would you consider it? If so, why, or why not?
3. Do you see rehoming as part of emphasising the wider 'culture of care'? Is there an incentive for research facilities to take part in this?
4. How do you feel rehoming would impact staff morale?
5. Does this research facility have its own, individual, formal rehoming policy for the release of animals?
6. Have you previously released animals for rehoming in the past, and if so, how did this occur?
7. What do you think the wider implications of rehoming would be? (I.e. public relations, relations with animal rights activists)
8. Would you choose to rehome directly, or indirectly through a rehoming charity? Why would you make that choice?
9. What barriers do you identify as interfering with the process? What might make rehoming difficult or unsuccessful?
10. What wider concerns would you have with rehoming?
11. What opportunities does rehoming animals represent for research facilities?
12. How do you feel rehoming could be made more successful?

Questions for rehoming charities:

1. How common is ex-research animal rehoming through your organisation?
2. How successful is ex-research animal rehoming through your organisation? Are most of the animals chosen for rehoming? Are return/relinquishment rates low?

3. Do research facilities contact rehoming facilities, or vice versa? Who initiates the initial partnership?
4. What likely behavioural problems may arise with ex-research animals?
5. How are 'standard' shelter animals trained for rehoming? Could this training be applied to ex-research animals?
6. Which species are most commonly rehomed? Are ex-research rodents or fish rehomed within your organisation?
7. Is there an owner selection process, and if so, what does it entail?
8. Would the selection process be stricter/more stringent for those looking to rehome ex-research animals?
9. How do you feel about being seen to 'co-operate' with research facilities?
10. Would you expect a monetary donation from the research facility to help rehome the animal?
11. Is your organisation involved in the training and preparation side?
12. How are the animals prepared for rehoming? Does the RSPCA conduct vaccinations and neutering?

Questions to ask someone who has recently rehomed a former laboratory animal:

1. How did you first hear about the potential to rehome former research animals?
2. What motivated you to rehome the animal? Would you consider the animal a companion animal?
3. Which rehoming agency did you work through? Or did you rehome directly through the laboratory?
4. What policy documents did you have to sign, if any?
5. Did you have to have a certain level of experience of owning rescue animals before? Did you have to have any past experiences of training?
6. Did anybody come to look at the suitability of your house/accommodation before you could bring the animal home?
7. Were other support items provided? (E.g. favourite toys, lead, bedding and diet?)
8. Were you told about the potential behavioural problems that would come as a result of having a former laboratory animal?
9. Were you asked to provide any feedback on the progress of the animal?
10. How has the animal been since it's been rehomed? Has it developed any behavioural abnormalities? How does the animal react to strangers or other animals?
11. How do you feel personally toward animal biomedical research?

12. Were you told to prepare for the public relations aspects? Do you readily tell people of the origins of the animal? If so – how do people feel about your decision?

13. Were you told what might happen if you wanted to return the animal?
14. How successful was the rehoming process for you?
15. Would you rehome a former laboratory animal again?

Questions for staff at a non-human primate sanctuary:

1) How important do you think it is to rehome former research animals?
2) Under what circumstances should such an action be taken?
3) Who facilitated the initial contact between your organisation and the laboratory?
4) How do you feel about being seen to 'co-operate' with research facilities?
5) What barriers exist with rehoming non-human primates to sanctuaries?
6) What opportunities does it represent?
7) How were the animals deemed fit for rehoming? Did a vet or other suitability qualified person have to measure their expected quality of life?
8) How were the animals transported to the sanctuary? Were there any difficulties with this process?
9) Are the animals kept individually or in groups? If they are in groups, were these the groups the same as in the laboratory or were the animals re-socialised? If the latter, was this process difficult?
10) How well, generally speaking, have the animals adapted to life in the sanctuary?
11) Where does the funding come from to keep the animals? Was there a monetary donation from the laboratory?
12) What are relations like with the laboratory in question?
13) What do you see as the benefit of the rehoming process? This can include benefits to the animals, laboratory staff or sanctuary staff.