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Towards a Socially Legitimate Ethical Review of Animal Research:

Advancing the field of 'Public Engagement with Ethics'

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Abstract

The emergence of a 'participatory turn' in the sociological study of science and technology reflects a growing recognition of the value of diverse 'non-expert' perspectives in shaping and overseeing research agendas. The interdisciplinary field of Science and Technology Studies (STS) has been instrumental in laying the theoretical groundwork and driving the methodological advances necessary for translating this aim to the policy sphere. Building on this momentum, there is a nascent push within STS to expand its focus to incorporate institutional ethical frameworks, aiming to develop a field of '**Public Engagement with Ethics'**. Central to these efforts is the need to reconsider the evolving role of 'expertise' within, and public expectations of these structures to ensure their social legitimacy – an area that has received surprisingly limited attention so far.

This thesis responds to such calls by examining the specific context of UK Animal Research and Ethical Review Bodies (AWERBs), which serve as 'in-house' ethics committees responsible for overseeing all research involving live animals within research institutions. This case is particularly compelling due to the complex historical interactions between "the public" and animal research. These interactions have resulted in a policy context characterised by regulatory secrecy, driven by concerns about animal rights activism and researcher safety, and an outdated reliance on reductive opinion polling to gauge the legitimacy of animal research practice and regulation.

Recognising the theoretical and methodological complexities of engaging lay publics on the topic of ethical review, this thesis introduces a novel concept - **'Imaginaries of Ethics'**. This conceptual framework offers a productive approach to explore and conceptualise the 'ideal' ethical review process, as well as the underlying visions of animal research futures that these imaginaries embody. The effectiveness of this approach is demonstrated through policy analysis, examining **15 AWERB policy and guidance documents**, and through public engagement, conducted with six **online focus groups** involving 28 lay participants.

The analyses presented indicate a significant disparity between the expert-driven scientific rationality guiding AWERB protocols and the more embodied, political, and contextual ethics envisioned by lay participants. While participants did not foresee themselves actively engaging in AWERB negotiations, they valued the prospect of "upstream" exploratory ethical dialogues. However, the current AWERB ethical review process remains largely "downstream", taking place late in research design and focusing on scientific/welfare risks within a structured timeframe using a Utilitarian harm/benefit assessment. This misalignment highlights a lack of social legitimacy in the UK's regulatory approach to animal research, which ostensibly favours traditional science paradigms and views publics as problematic observers.

This thesis, therefore, concludes that AWERBs must embrace the political and emotional dimensions of ‘ethics’, moving beyond a focus on established expertise and objectivity. Implementing practical measures such as fostering a Culture of Care within the committee, improving transparency, and nurturing reflective practices among members could better align institutional ethical review with public expectations, enhancing the social legitimacy of animal research regulation in the short term. Meanwhile, more social science research on how publics engage with ‘ethics’ can drive future shifts towards more robust ethical review systems and, consequently, truly responsible research.

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Dissemination of Research Findings

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- Salter, K. (2023) 'Is UK Animal Research Facing a 'New Normal'? Considering the Risks and Benefits of 'Going Online', in *Alternatives to Laboratory Animals* (online) Available at: https://pubmed.ncbi.nlm.nih.gov/37342901/

Stakeholder Engagement:

- ***Ensuring the Social Legitimacy of Animal Research: Comparing Public and Policy Expectations for Ethical Review,*** Presentation Sessions with the Science Policy Sector of The Royal Society, June 2023, London.
- ***Exploring Public Expectations for the Institutional Ethical Review of Animal Research***, RSPCA Lay Members' Forum, December 2023, London.

Presentations:

- ***Ensuring the Social Legitimacy of Animal Research: Comparing Public and Policy Expectations,*** Special Item Presentation at the Centre for Applied Ethics, University of Nottingham (UoN): November 2020, Online.
- ***Ensuring the Social Legitimacy of Animal Research: Comparing Public and Policy Expectations,*** Animal Research Nexus Monthly Topical Meeting: January 2021, Online.
- ***Comparing Public and Policy Expectations for Animal Research Ethical Review,*** PGR Community Presentations, UoN: March 2021, Online.
- ***Ensuring the Social Legitimacy of Animal Research: Comparing Public and Policy Expectations for Ethical Review***, ESRC Pecha Kucha Presentation Sessions, University of Nottingham: February 2022, Online.
- ***Ensuring the Social Legitimacy of Animal Research: Comparing Public and Policy Expectations for Ethical Review***, Special Item Presentation at the Institute for Science and Society, UoN: April 2022, Online

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Glossary

ASPA - *The Animals (Scientific Procedures) Act, 1986* – as amended in 2012, incorporating changes brought about by the European Directive (2010/63/EU)

ASRU – *Animals in Science Regulation Unit* – the Home Office unit responsible for implementing (or 'policing') ASPA

AWERB – *Animal Welfare and Ethical Review Bodies* – A local framework of ethical review legally required in all establishments licensed to breed, supply or use animals in research.

ERB – *Ethical Review Body*

ERP – *Ethical Review Process*

EU Directive – *European Directive (2010/63/EU)* – The most recently revised EU legislation on the protection of animals used in scientific practices; all EU member states were given 2 years to transpose its provisions into domestic regulation/legislation.

HBA – *Harm Benefit Analysis* – A process used to evaluate whether the potential benefits of a research study justify the potential harm inflicted on the animals involved.

Institutional Ethics – Refers to the processes, principles and standards guiding the conduct, decision-making, and culture within an organisation or regulatory system. This is different from 'traditional ethics', which involves the academic philosophical inquiry into concepts of right and wrong.

NAMS – *Non-Animal Methods* – the scientific, technological and methodological replacement of animals in scientific and medical research

Publics – A pluralised reference to 'the public' – refers to the diverse groups that make up "the general public" and implies the socially constructed nature of these groups

PEwE – *Public Engagement with Ethics* – refers to the field of social science research that aims to explore how publics can be engaged in discussions and decision-making processes about ethical issues.

PUS – *Public Understanding of Science* – refers to the efforts and initiatives aimed at increasing public awareness, knowledge and appreciation of scientific concepts, methods and findings, fostering an informed and engaged society.

RRI – *Responsible Research and Innovation* – an approach that integrates societal values, needs, and ethical considerations into the research and innovation process, aiming to ensure science and technology developments are ethically acceptable, socially desirable, and sustainable.

RSPCA – *Royal Society of the Prevention of Cruelty to Animals* – UK animal welfare charity

STS – *Science, Technology and Society* – the interdisciplinary field that studies the relationships between science, technology, and society, exploring how they influence and shape each other.

3Rs – *Reference to the principles of the 3Rs: a legal, ethical and scientific framework that promotes the Replacement, Refinement and Reduction of animals in medical research* – an internationally adopted framework.

Chapter One: Introduction

This thesis tackles the pressing problem of whether "the public" is accepting and trustful of the way in which laboratory experimentation using non-human animals (hereinafter 'animal research') is regulated in the UK. Such research is often carried out in their name, funded by taxpayer money, and deemed essential for scientific and medical progress – a collective benefit we all share. Central to such regulation is the 'in-house' ethical review process undertaken by each research organisation's Animal Welfare and Ethical Review Body (AWERB). According to the latest data, 2,761,204 animal procedures were performed in the UK in 2022, and each of these will have passed through their institutions AWERB to secure a license to use animals from the Home Office (2023). By focusing on the UK AWERB, this thesis makes a novel contribution by exploring how diverse publics perceive, engage with, and anticipate the functioning of institutional ethical reviews, as well as the legitimacy they afford these systems – an area currently known very little about. This thesis leverages insights from the fields of *Public Understanding of Science* and *Science and Technology Studies* to advance understanding of how publics *engage* with the concept of 'ethics' in institutional settings. The research project on which it draws is part of an ESRC Collaborative studentship and benefitted from mentorship from the Royal Society for the Prevention of Cruelty to Animals (RSPCA).

Drawing from policy documents and online focus groups, this thesis' empirical aim is to offer insights beyond assessments of support or opposition to animal research as a concept. Rather, it aims to deepen understanding of how public voices can be cultivated and empowered to shape regulatory structures and decision-making processes conducted in their name. Through the development of the novel *Imaginaries of Ethics* framework, I highlight an apparent disconnect between public 'imaginaries' – rooted in broader ethical and emotional considerations – and the scientific rationality interpreted to be guiding AWERBs. In doing so, I advocate for a more reflective and socially responsible approach to ethical governance in animal research. The final chapter of this thesis provides practical insights with implications for both AWERBS

and scholars exploring how publics may engage with ‘ethics’. These insights are split into three sections: (a) the theoretical contributions of the project, including the scholarly value of this line of inquiry, (b) the methodological insights, including how to engage such publics and how to frame the subject matter, (c) the implications for the AWERB itself, suggesting pathways to enhance the social legitimacy its ethical review process.

This introductory chapter first offers an overview of the UK's regulatory framework for animal research, emphasising the role of 'ethical review' and highlighting the existing lack of public engagement in this process. It concludes by outlining the main research questions guiding this project and presenting an overview of the thesis structure.

1.1. The regulatory context of animal research in the UK

Over the past 200 years, animal research has been credited as making crucial contributions to scientific understanding and most major medical and public health advances (Paton, 1993, Royal Society, 2004, UAR, 2011, UAR, 2018). However, its history is fraught with complex social issues, including media-reported incidents of cruelty and unnecessary suffering (Baith, 1975, PETA, 2018), concerns about ‘bad science’ where results from animal models fail to translate to human therapies (Baker et al., 2014, Akhtar, 2015, McLeod and Mohan, 2020), perceptions of a policy/regulatory process dominated by those with vested interests (Lyons, 2013, Garner, 1998, Germain et al., 2017), perceived ‘secrecy’ around the practice (Rabesandratana, 2014, McLeod and Hobson-West, 2016), and a volatile relationship between scientific institutions and animal liberation movements (Monaghan, 1999, Francione and Garner, 2010). Traditionally, this debate has been reductively framed as a conflict between two polarised, private, and fixed morality commitments: those in favour of animal research and those against it. This narrative has since been criticised for stifling the complex democratic debate the issue truly warrants (Nuffield Council on Bioethics, 2005). However, more recently, there has been growing recognition in both academic literature and public policy that inclusive democratic discussion is essential

for social legitimacy and effective governance, making it imperative to better understand this relationship (Weale, 2001, McLeod and Hobson-West, 2016).

The notion that ‘the public’ indeed has some democratic interest in the practice is ostensibly recognised through regulatory initiatives such as the ‘Concordat for Openness on Animal Research’, established in 2014. Signed by numerous research institutions, it establishes a collective commitment to transparently sharing information about animal research, including how, when, and why animals are used, and for actively engaging with publics to foster meaningful dialogue (UAR, 2014). Additionally, there has been a notable push towards promoting non-animal methods and strategies (NAMS) (Defra, 2023, RSPCA, 2023), with emerging opinion polls suggesting many members of ‘the public’ champion this shift (Animal Free Research UK, 2023). Accordingly, two 2021 UK e-petitions called for the complete ‘phasing out’ of animal experiments, a notion subsequently debated in the UK parliament after an EU parliamentary vote in favour of this shift (House of Commons Library, 2021, Eurogroup for Animals, 2021). The government, however, indicated they have no immediate plans to follow the EU's actions (UK Parliament, 2021). Nevertheless, the prospect of updating animal research laws has recently stirred debate among animal researchers, who refute the appropriateness of accelerating a shift to full replacement given its centrality in scientific research (Magee, 2023). Commentators from the social sciences suggest that any significant move towards prioritising NAMS in research would require a profound cultural shift in the biomedical sciences (Ankeny and Davies, 2023), thus indicating substantial overhauls are likely some way off and need support from the scientific community themselves. The existence of these conversations, however, infer the timeliness of this project.

UK legal protections for laboratory animals have, for some time, been widely considered some of the strictest in the world (UAR, 2011). These regulations are set by the *Animals (Scientific Procedures) Act* 1986 (“ASPA”), which was last amended in 2013 to meet the requirements of EU Directive 2010/63. However, the directive itself drew heavily from the existing UK legislative model. Both ASPA and the EU directive operate on the principle that animal use should be minimised whenever possible but

is ultimately justified under the ‘right’ circumstances (Jörgensen et al., 2021). This standard applies across all of Europe. To conduct research using animals, scientists must get specific permission from the Home Office’s Animals in Science Regulation Unit (ASRU), which is only granted if very specific conditions are met. These conditions are set out in ASPA, stipulating that animals should be housed in comfortable/enriched environments, with minimal stress and appropriate care, including regular health checks. These measures aim to ensure the ‘humane’ treatment and the well-being of animals, and apply to all “protected animals” (all living vertebrates and cephalopods) and to any procedure that may cause an animal ‘a level of pain, suffering or distress equivalent to or greater than the introduction of a hypodermic needle’ (Home Office, 2014 :59).

This thesis explicitly concentrates on the ethical dimensions of the regulatory context. Hence, four fundamental mechanisms of ASPA, including the AWERB, are pertinent and will be introduced in the remainder of this chapter. At the heart of animal research regulation lies a 3-way licensing system operated by the Home Office (2014). This system mandates that researchers and their institutions hold three distinct licenses before proceeding with a programme of research. These licenses include an institutional license, granted based on the availability of suitable facilities within the applying institution; a personal researcher license, awarded to individual researchers upon acquiring the necessary training and qualifications; and a project license, obtained for each planned work program. Before submitting the project license application to ASRU, the research proposal undergoes review by the institution's AWERB, ensuring proper consideration of the principles of the '3Rs' and Harm-Benefit Analysis.

The principles of the ‘3Rs’ are integral to global animal research policy, originating from the seminal work of Russell and Burch (1959). Widely endorsed, they serve as a guiding framework to ensure the humane treatment of animals in research (McLeod and Hartley, 2018). They encompass the principle of "replacement", advocating for the substitution of animal models with alternative research tools or techniques whenever feasible; "reduction", using the minimum number of animals required for meaningful

results; and "refinement", focusing on minimising suffering, pain, or distress through improvements in housing conditions, care practices, and scientific methods. On the other hand, the Harm-Benefit Analysis (HBA) framework ensures that research only proceeds where 'the likely harms to animals are justified by the benefits likely to accrue' for humans, animals or the environment (Home Office, 2015 :3). This assessment should guide all decisions regarding the use of animals in research and helps define what constitutes 'necessary' or justifiable suffering experienced by animals (Brønstad et al., 2016). Critics have argued that both the 3Rs and the HBA framework encapsulate outdated notions of 'animal welfare' and have become detached from genuine ethical discourse (Job, 2014). Specifically, they suggest that these frameworks primarily focus on the physical suffering or pain experienced by animals, thus holding a narrow conception of the broader interests of animals or the relevant wider societal/cultural concerns (Varga, 2013, Peggs, 2013, McLeod and Hartley, 2018, Tjärnström et al., 2018, DeGrazia and Beauchamp, 2019, Herrmann et al., 2019). Still, their premise forms the fundamental approach to ethically reviewing research in the AWERB, as explored in the following section.

1.2. Animal Welfare and Ethical Review Bodies (AWERBs)

According to ASPA's 2013 amendment, all institutions supplying or using animals for research must maintain an active AWERB. These committees are tasked with continuing and improving upon the work of the local Ethical Review Processes (ERPs) before this amendment (Home Office, 2014). The AWERB convenes regularly to guide their institution on ethical, scientific and welfare matters. This encompasses applying the principles of the 3Rs and a HBA, and scrutinising project license applications before submission to ASRU. To carry out these activities, the AWERB must include at least one Named Animal Care and Welfare Officer (NACWO) and at least one Named Veterinary Surgeon (NVS), both of whom the institution should already employ as a condition of their 'establishment license' (2014 :88). Additionally, the AWERB must have a Chair who is also responsible for arranging for the AWERB to 'actively seek a

wider membership, taking into account, transparently, the views of people who do not have responsibilities under ASPA, as well as one, or more, persons who are independent of the establishment' (2014 :88). This has been increasingly interpreted to infer the appointment of a 'lay member' as 'best practice' (Jennings and Smith, 2015). ASPA also emphasises that conflicts of interest be 'avoided'. However, beyond this, Home Office guidance provides no clear steps to be taken in such circumstances, nor does it offer a definition of what would constitute such a conflict in the first place (Home Office, 2014:37).

It is also worth noting that these committees are expected to make decisions and review project license proposals based on a 'local perspective', leveraging 'local knowledge and local expertise' (Home Office, 2014:89). This approach is intended to acknowledge the significant variation among institutions housing AWERBs, including differences in size, types of research conducted, and breeds of animals commonly used. Consequently, no one-size-fits-all structure or mandate exists beyond the 'minimum tasks' outlined. While ASPA and associated guidance outline a few 'additional tasks' for AWERBs, they have flexibility in interpreting and carrying out these tasks in practice. These additional tasks include promoting a 'Culture of Care' within the establishment and 'in the wider community', as well as providing a platform for broader discussions on animal welfare, care and use at the institution (*Ibid.*). Workshops with existing AWERB members have examined the effectiveness of these bodies in delivering these 'extra' tasks, such as facilitating ethical discussions. It has been suggested that institutions often struggle to meet these objectives due to constraints such as time, resources, and support from the broader institution (Hawkins and Hobson-West, 2017). As a result, the Royal Society for the Prevention of Cruelty to Animals (RSPCA), a prominent stakeholder in the animal research community, has previously expressed concerns that, in some cases, AWERBs may not effectively address 'ethics' at all (2019).

'Ethics' is explicitly mentioned in two of the four 'key AWERB functions', particularly in the function of providing a 'forum for discussion and development of ethical advice' (Home Office, 2014:89). In the UK, Rose (2012:283) details how the introduction of

localised ethical review bodies initially faced challenges, with debates centring on whether the term “ethical” was appropriate, ‘or if their remit was better placed in the evaluation of ‘welfare’ issues only’ (See also: Liverpool Animal Ethics Group, 1986, Röcklinsberg et al., 2014). Despite these initial tensions, The Boyd Group, an independent think tank comprising of stakeholders, emphasised that ‘the very existence of ethics committees, it can be argued, *would engender public confidence in decisions about the ethical acceptability of scientific work involving animals’* (quoted in Rose (2012:283); emphasis added). However, the extent to which the views and perspectives of the ‘lay public’ are adequately incorporated into both the regulatory and ‘ethical review’ processes continues to be a topic of contentious ethical and political discussion (Lyons, 2011, Ormandy, 2012, Fernandes et al., 2019).

1.3. The absence of publics in the AWERB

Considering the animal research policy context in light of modern-day science initiatives that advocate for greater public consultation reveals a fascinating case for examining the concept of democracy in science. Regulatory secrecy in this context is often justified by the volatile relationship between animal research and society at large (Lyons, 2013). While transparency initiatives have aimed to improve this dynamic, secrecy remains ingrained in the system (Germain et al., 2017). This persists despite growing recognition that public support for the practice is not only good practice but essential for maintaining the ‘social contract’ on which its use relies (Davies et al., 2016a :3). To illustrate this complexity, the following section details the potential opportunities for publics to engage with the AWERB, though demonstrates that these do not materialise in practice. This, I argue, indicates a general ‘absence of publics’ in the ethical review of animal research (see also: Salter, 2022:257).

The first opportunity for public engagement with the UK AWERB is via the industry-wide pledge towards increased ‘transparency’ by organisations that use laboratory animals in research, driven by the 2014 launch of the ‘Concordat for Openness’. The

Concordat represents a commitment to actively maintaining the relationship between society and the practice of animal research. Yet, critics argue that transparency in the industry was (and still is) said to be significantly hindered by Section 24 of ASPA (the 'confidentiality clause'). Essentially, S.24 makes it a criminal offence to disclose details of an establishment or a researcher conducting animal research (including project license applications and Home Office inspection reports). This is said to protect both intellectual/commercial property rights and the safety of researchers from a perceived risk of animal rights activism (Home Office, 2014). This clause remains in place today despite claims from stakeholders that it inhibits public debate and wider scrutiny of animal research (Dunn, 2021).

Researchers are, however, legally required to produce an anonymised 'non-technical project summary' (NTS) of the proposed research in their project license application. The NTS is the only mandated release of information of this kind to lay publics, where they are published on the Home Office website if project license applications are successful (after passing through the AWERB first). This represents a second potential mechanism through which publics can engage with animal research regulation. However, some recent dialogue on their efficiency in the UK (and more widely in Europe) suggest that they are often of poor quality, use inappropriately technical or vague language, and are often read by very few members of the 'lay public' in reality (Taylor et al., 2018). They are also criticised for being published online too long after the project license application (sometimes years), meaning there is no room for 'informed public debate and accountability of regulators' decisions' *(Ibid. 205).*

The final opportunity for societal influence on the ethical/regulatory process is through the recommended establishment of a lay member role within the AWERB. While ASPA does not officially mandate lay membership to the AWERB, their appointment has become widely accepted as good practice (Jennings and Smith, 2015). However, academics and stakeholders alike have reflected on an apparent recruitment bias, whereby lay members tend to be scientists and ethicists themselves or also be employed by their institution in another capacity raising questions over their impartiality (Job, 2014). Policy and guidance surrounding the AWERB do, however, suggest that

while lay members are tasked with holding an ‘awareness’ of broader societal concerns, they are not, at any point, expected to be *accountable* to/for lay publics (Jennings and Smith, 2015). Therefore, while important in invigorating and widening discussion, they do not necessarily represent ‘the public’ in ethical review. This endeavour would likely require an entirely different institutional structure.

Still, individual AWERBs vary significantly in their operational approaches (ASC and AWERB Hubs, 2020), meaning some AWERBs might give more credence to the views of the broader public, produce higher-quality NTSs, or better integrate lay members, making generalisation challenging. However, the lack of concrete mechanisms for public engagement within the ethical framework suggests that while public trust in the system is considered crucial, their active participation as stakeholders is currently absent from these ethical structures. Given that this thesis intends to consider social legitimacy in/of ethical review, this observation becomes a pertinent focal point for evaluating the overall animal research ‘problem’, but also the extent to which publics are permitted to engage with ‘ethics’.

1.4. Research questions

My exploration of the animal research context is based on the idea that ethical review systems could be improved by incorporating public expectations into their processes and outcomes. This approach seeks to enhance the relevance, responsiveness, accountability, and overall social legitimacy of these systems. To develop this theory, I have drawn on and advanced the field of Public Engagement with assertion Ethics (PEwE). This framing of the issue is designed to better conceptualise and understand public expectations regarding ethics, ethical review, and ethical expertise, as well as their envisioned and desired contributions to these systems. Accordingly, the research questions guiding this project are as follows:

1. How do UK ‘publics’ imagine the current system and processes governing institutional ethical review in animal research governance?

2. To what degree do these perceptions correspond with the prevailing 'Imaginaries of Ethics' underpinning AWERB policy and guidance?
3. What are the implications of these reflections for:
    a) Advancing the conceptual field of Public Engagement with Ethics?
    b) Enhancing methodologies for a Public Engagement with Ethics?
    c) Assessing the social legitimacy of animal research in the UK?

The final section of this introductory chapter discusses the structure of this thesis and how it addresses each of these questions.

1.5. Overview of thesis structure:

Chapter Two: The conceptual and methodological case for a Public Engagement with Ethics ("PEwE")

This chapter is organised into three sections. The first section (2.1) examines historical trends in academic literature, particularly in STS and PUS, regarding the democratisation of scientific governance. It details the many structural, practical, and conceptual barriers STS scholars have overcome in inducing a transition towards participatory and responsible research governance. The second section (2.2.) makes the case that many of the same obstacles to redistributing power in scientific policymaking also apply to ethical decision-making and structures, providing the epistemic rationale for a PEwE. The final section (2.3.) lays the conceptual groundwork for developing a theoretical framework called 'Imaginaries of Ethics' to conceptualise idealised projections of a successful ethical review.

Chapter Three: Interpreting *Imaginaries of Ethics* through animal research guidance and with animal research publics

This methodology chapter delineates the practical application of *Imaginaries of Ethics* in sociological research on policy and lay public spheres. It details the analysis of 15 AWERB policy and guidance documents and the conduct of 6 online focus groups

involving 28 lay participants. Additionally, it elaborates on how this thesis tackles various methodological challenges associated with empirically investigating the field of PEwE. My approach, therefore, suggests employing a theoretical framework centred on 'storyline' identification and the development of 'Imaginaries of Ethics,' which transforms 'institutional ethics' into an empirically investigable idea.

Chapter Four: An exploration of the policy context through the imaginaries of its policy and guidance documents

This first empirical analysis chapter comprehensively examines key policy and guidance documents related to the UK AWERB. This stage was pivotal in refining the analysis process, employing 'storylines' and 'imaginaries.' It was during this phase that the thesis developed its central focus on three distinct topics:

1. The perceived role of 'the public' in ethical review
2. The perceived ethical decision-making process within the review
3. The envisioned outcome of 'ethical' scientific endeavours

These themes structure the chapter, culminating in the overarching argument that UK AWERB policy and guidance are rooted in an Imaginary of Ethics that prioritises objectivity and expertise.

Chapter Five: Lay imaginings of ‘the public’ and their stake in institutional ethical review

This empirical chapter is the first of three relating to focus group data. It uses storylines and the development of imaginaries to explore participants' collective vision of their involvement in the institutional ethical review of animal research. The analysis in this chapter presents an Imaginary of Ethics in which animal research is portrayed as a legitimate site of political engagement for the 'rational' public.

Chapter Six: Lay imaginings of the procedural routine of an ethical review process

This empirical chapter delves into public ‘Imaginaries of Ethics’ regarding the practical application of ethical frameworks in the process of practically 'doing' ethical review. Here, participants underscore the importance of a 'just' deliberative procedure and the establishment of principles to ensure 'fairness'.

Chapter Seven: Lay imaginings of the guiding ethical principles of animal research

This final empirical chapter explores and develops focus group participants' imaginaries regarding the production of responsible, justifiable, and credible science. It constructs a public imaginary of ethics in which 'ethical science' emerges from a process of social negotiation, transcending preexisting abstract principles.

Chapter Eight: Conclusions and Implications

Drawing on the discussion developed through all four empirical chapters, in this final chapter I draw together these findings and explore their collective implications. It addresses the final research question and its sub-questions, beginning with the conceptual implications of this thesis for PEwE scholarship, then addressing the methodological considerations for those seeking to empirically develop PEwE, and concluding with practical and policy implications for the specific field of animal research governance. Finally, it concludes with the reflection that animal research ethical review procedures are perhaps not currently socially legitimate and explores possible steps to establish such legitimacy.

Chapter Two: The Conceptual and Methodological Case for a Public Engagement with Ethics ("PEwE")

Talk of a 'participatory turn' has gained momentum among social science scholars, who emphasise the importance of involving diverse stakeholders, including publics, in shaping and evaluating research agendas in science and technology (Wilsdon and Willis, 2004, Gregory and Lock, 2008, Mohr, 2011, Stilgoe et al., 2014, Sturgis, 2014, Macnaghten, 2021). The interdisciplinary fields of STS and PUS have been crucial in developing this academic shift, providing both the theoretical groundwork and methodological innovations to support its implementation. As such, this literature review chapter is divided into three sections. In the first section (2.1.) I detail the historical trends which saw a shift from a traditional model of science governance, where professionals and experts held exclusive control, towards a more inclusive approach characterised by consultation and two-way dialogue (Stirling, 2008, Thorpe and Gregory, 2010, Chilvers, 2012, Macnaghten and Chilvers, 2014, Stilgoe et al., 2014, Smallman, 2018). This transition involves breaking down expert boundaries to create a more democratic approach to science governance and is now often linked with the concept of responsible research and innovation (Mitcham, 2003, Sutcliffe, 2011, Lee, 2012, Owen et al., 2012, Stilgoe et al., 2013). The significance of this more general shift in thinking is then explicitly explored through the specific context of animal research.

In the second section (2.2.), I detail a series of calls to expand the scholarly discourse around how publics engage with *science* to include an increasingly crucial aspect of its regulation: "institutional ethics". I use this term to distinguish such a process from 'traditional' philosophical academic inquiry, instead exploring its employment as a regulatory mechanism. Some have previously referred to the prospect of expanding focus in this way to developing a field of *Public Engagement with Ethics* (or 'PEwE'), a concept that serves as a central tenet of this thesis. I draw on concepts from STS, such as Ethical-Boundary work, to reinforce and develop these calls within the compelling context of animal research.

Finally, the chapter addresses the key methodological considerations for researching 'ethics' with lay participants, emphasising the significance of grounding empirical research within their rich socio-cultural contexts. In response to this, I propose the practical and insightful concept of *Imaginaries of Ethics* (building on existing literature on Socio-technical Imaginaries). This framework proves to be a useful tool for examining public understandings and expectations of institutional ethics. The chapter concludes by outlining how this blend of conceptual and empirical literature, along with identified gaps and challenges, has shaped this thesis' core reflections on 'social legitimacy' of animal research ethical review.

2.1. Understanding the Public Engagement with *Science* Movement

In 2016, a group of prominent academic and stakeholder figures researching the social, cultural and economic dimensions of laboratory animal science in the UK met in an attempt to initiate a collaborative agenda for such work. During discussions surrounding the ongoing 'acceptability' of animal research, attendees recognised the critical importance of maintaining a 'tacit social contract between citizens, scientists and the state' (Davies et al., 2016a :3). They emphasised that such a contract relies heavily on specific assurances regarding the credibility of both the practice and regulation of laboratory animal research. Recognising the complexity of these required 'assurances', the attendees emphasised the importance of the social scientific community for examining their legitimacy. For this thesis, this assertion raises conceptual questions about the precise conditions under which animal research can be considered justifiable and acceptable and what processes of legitimisation are deemed credible by the wider animal research publics. Consequently, this initial section of the literature review chapter delves deeper into the perception of legitimacy in scientific research more broadly, as well as in the specific context of animal research. It does this by exploring literature around the philosophy of scientific knowledge, the social study of scientific research (STS), and the public understanding

(and engagement with) science. Firstly, it explores the historical underpinnings of the assertion that publics have a vested interest, and consequently a voice, in shaping the regulation and advancement of scientific methodologies and practices. This contention is central to the remainder of this thesis.

2.1.1. The Philosophy of Science: Towards Democracy?

The Philosophy of Science, a field deeply intertwined with the debates sparked by scholars like Thomas Kuhn (1962 [1970]) and Karl Popper (1966), explores the intricate construction and evolution of scientific knowledge. Kuhn's concept of "normal science" describes the process of consensus formation within knowledge paradigms, guided by empiricism, or, essentially, testing theories through observation (Chalmers, 2013:1). However, Kuhn argues the inevitability of crises arising in such paradigms requiring what he terms "revolutionary science" to address these challenges, which he suggests requires greater interdisciplinary collaboration. Scholars such as Hume (1748) and Quine (1951) are also pertinent to such discourse owing to their challenge of the premise of scientific objectivity. Such work has amplified academic interest in questioning the scientific method, inductive reasoning, and empiricism, but also the legitimacy of these traditions in regulatory circles given that knowledge and 'fact' may be no more than social constructions, and not in themselves the infallible truth they were once presented as (Pinch and Bijker, 1984, Schauz, 2014, Peters and Besley, 2019).

More traditionally, scientific policies were developed in the politico-scientific sphere and largely emancipated from social accountability (Stilgoe et al., 2013). This was deemed imperative to producing truly objective and dynamic scientific knowledge. Michael Polanyi's (1962) 'Republic of Science' and Vannevar Bush's (1945) 'Endless Frontier' report are prominent historical examples of such positions. Both express concern that attempts to guide science towards a more direct service of the public interest would deflect from the advancement of progressive science altogether. They essentially advocate that science be shielded from political accountability, or 'over'-regulation, as scientific progress is essential to public welfare and, therefore, the

interests of society as a whole (Merton, 1942). This is a stark difference to the way that science is regulated today. Interdisciplinary fields such as STS have further investigated the intricate interplay between science, technology and society. Scholars have further scrutinised the social dynamics of scientific knowledge production, including the legitimacy of claims of expertise (Latour and Woolgar, 1979, Knorr-Cetina, 1984, Peters and Besley, 2019). These inquiries have raised fundamental questions, such as, *'If it is no longer clear that scientists and technologists have special access to the truth, why should their advice be especially valued?'* (Collins and Evans, 2002:3000). Such reflections have led to consideration of the imperative to 'democratise' science, or at least advocations for broader societal involvement in its regulation, including local or 'lay' knowledge (Wynne, 1992, Wynne, 2006a).

The case of animal research is particularly intriguing within such reflections, as historians document its emergence *alongside* the development of the "normal science" paradigm. Scholars like Peter Singer (1990 [1975]) trace this trajectory back to pre-Christian thought, revealing a pervasive perception of animals as 'automata' without consciousness or the ability to feel pain, a view reflected in philosophical and theological traditions. As a result, animal research, often referred to as "vivisection" at that time, was mainly considered the concern of science and a valuable tool for understanding anatomy and physiology (Brown and Michael, 2001, Nibert, 2003, Hobson- West, 2007, Germain et al., 2017, Carter and Charles, 2018). Public concern about animal research finds its roots in these early days of vivisection, which has seen several periods of mass public disapproval over time (Franco, 2013, Germain et al., 2017). This paved the way for the adoption of 'policies of concealment', which served to reinforce the authority of the scientific community, given the perceived centrality of animal use in scientific research (*Ibid.*). These policies, exemplified by measures like Section 24 ('the secrecy clause') discussed in the introductory chapter (Section 1.4.), are grounded in an ideology that implies that lay individuals are unqualified to evaluate the suitability of animal models in science, thus implying ethical justifications are the concern of those with scientific/technical/political expertise (Baker et al., 2014). Given the broader movement challenging the idea that only scientific expertise should drive policymaking ("the participatory turn"), animal research has begun to adopt principles

of transparency (Holmberg and Ideland, 2012, Morgan, 2014, Mendez et al., 2022). However, it still lags behind other areas of science in terms of actively involving the broader community in decision-making (Lyons, 2013, Ormandy, 2012, Fernandes et al., 2019). This issue is further examined in the following section.

2.1.2. The "responsible" governance of scientific and medical research

More contemporarily, there have been increasing calls to redefine what is to be considered 'responsible' practice in Research and Innovation ('RRI') (Mitcham, 2003, Sutcliffe, 2011, Lee, 2012, Owen et al., 2012, Stilgoe et al., 2013). RRI has gained significant attention in EU policy and framework programmes over the past decade (See: European Commission Report (2013). Though many of its core principles were evident in STS discourse long before this (van Lente et al., 2017). Essentially, the concept refers to holding scientific research to higher social and ethical standards and promoting diverse voices in agenda-setting. Owen et al. (2012 :751) describe the uptake of this as a move from 'science in society, to science for society, and with society'. Science is now increasingly called upon to be both responsive and accountable to the societal implications of its endeavour. Prominent STS scholars like Gibbons (1999), Funtowicz and Ravetz (1993) and Pielke (2007) suggest this was driven further by a shift in the sites at which some contemporary policy issues are defined, framed, and negotiated. These issues typically involve highly contested problem definitions and solutions, as defined by Rittel and Webber (1973) as 'wicked problems' or by Funtowicz and Ravetz's (1993) 'post-normal problems'. Once dominated by government, industry, and academia, these forums have become significantly more inclusive spaces (Gibbons, 1999). However, determining the extent of influence the general public should rightfully have in these arenas has sparked complex debates about the democratic distribution of power and the privileged role and value of expertise in shaping scientific policies (Bishop and Davis, 2002, Barnes et al., 2004, Wynne, 2006b, Irwin, 2007). Nevertheless, at least some level of public input in policymaking is now recognised as a crucial prerequisite to democratic legitimacy and the doctrine of 'good governance' (McLeod and Hobson-West, 2016 :792).

RRI is particularly pertinent to ‘post-normal’ or ‘wicked’ problems, which are emblematic of value-laden societal and moral dilemmas where ethical judgements are non-linear, complex, and diverse. Equally, animal research serves as a prime example of such dilemmas, and heavily relies on public/state funding, with ‘the public’ commonly framed as the primary beneficiaries of the research outputs (Ormandy, 2012, Raman et al., 2017, Fernandes et al., 2019). Consequently, ‘responsible’ research in this context is frequently associated with ‘reassurances about how animals are used and cared for during the research process’ (McLeod and Hartley, 2018 :724). Equally, the arena in which these deliberations take place involves multiple stakeholders operating within the ‘policy community’, including policymakers, research scientists, veterinary professionals, animal technician groups, and animal welfare charities. They all function within complex, dynamic, and interdependent networks characterised by conflicting values (Stein et al., 2014, Davies et al., 2020).

Fernandes et al. (2019) conducted a case study of the policy network within the EU context of animal research, observing a diverse array of stakeholders advocating for specific standards, engaging in dialogue, and exchanging perspectives. However, they also suggest the need for significant efforts to enhance the influence of the ‘civil community’ sector. Nonetheless, they appear optimistic that the influence of ‘the public’ as a stakeholder will become increasingly prominent as participatory governance mechanisms become more widespread. Fernandes et al. (2019) seem to imply that it is almost inevitable for liberal democracies to evolve this way. However, Ormandy (2012) takes a notably less optimistic view regarding the integration of ‘the public’ as active stakeholders in animal-based science. Instead, she calls for a more robust political effort to engage diverse publics better. She identifies two key areas for such efforts: granting/funding decisions and the ethical review of research protocols. Similarly, Lyons warns of the ‘path dependency’ inherent in the animal research policy context, which systematically overlooks the real influence that ‘publics, animal protection groups and animals themselves’ can have as stakeholders in policy creation (2011 :6). Therefore, unlike Fernandes et al. (2019), both Ormandy and Lyons are less optimistic about the naturalness or inevitability of growing public influence. Instead,

they call for a more concerted, systematic effort by those in the policy community to invigorate the policy context toward this end.

2.1.3. Public Understanding of Science

A key characteristic of scholarship calling for greater public involvement is the assumption that science requires a 'social licence' to operate, in addition to internal-scientific or more formal institutional licenses (Raman and Mohr, 2014 :272, Raman et al., 2017, Guston, 2000). Yet the best way to collate, analyse, present and utilise the attitudes of 'the public' is more heavily contested (Stilgoe et al., 2014). Social science discourse surrounding how publics understand and engage with science and technology has often been framed as shifting in metaphoric 'waves' (Collins and Evans, 2002, Stilgoe et al., 2014, Entradas, 2015). While the terminology, nature, and timeframe of each wave vary considerably, most accounts depict a progression from initially disregarding the role of publics entirely to emphasising communication and ultimately recognising the importance of collaboration, transparency and mutual learning, often described as a transition 'from deficit to dialogue' (Irwin and Michael, 2003:47, Irwin, 2006a, Pieczka and Escobar, 2006, Wynne, 2006b, Bauer, 2009). This entailed a transition in discourse from traditional 'first wave' perspectives, which viewed 'publics' as passive and compliant recipients of scientific information (Bauer, 2009), toward a 'second wave' marked by efforts to enhance the scientific literacy of 'the general public' to garner greater support for science (Thomas and Durant, 1987, Demeritt, 2000, Stirling, 2008, Entradas, 2015). Public opinion polls emerged as a popular method for tracking changes in general opinion in response to increased knowledge, demonstrating the maintenance of this social contract.

Subsequently, a wealth of literature has challenged this 'deficit model' of public understanding by demonstrating that simply providing 'top-down' information does not always improve public acceptance (Collins and Evans, 2002, Augustinos et al., 2010). Research in the social sciences suggests that public disapproval often stems from factors beyond a mere lack of scientific comprehension (Marks, 2016). This shift in thinking also suggests that opinion poll data can be overly reductive, assuming a fixed and unchanging public opinion, and can systematically marginalise certain voices

(Stilgoe et al., 2014, Raman et al., 2017). Instead, these scholars advocate for a more active, deliberative and context-sensitive form of participation that considers diverse emotional, social and experiential perspectives (Ziman, 1991, Kearnes et al., 2006, Wynne, 2006a, Brown and Guston, 2009, Raman and Mohr, 2014).

However, animal research continues to rely heavily on opinion polling to establish its social legitimacy. For example, Hobson-West (2010) notes the abundance of such polls and demonstrates that senior laboratory scientists, representatives of funding organisations, and animal rights organisations all use the results of these polls as a kind of 'technology of legitimacy'. They employ these polls as a resource or tool for establishing moral legitimacy and a democratic mandate (see also: Raman and Mohr, 2014, Raman et al., 2017, McGlacken, 2021b). One of the most influential examples of such polling is the 'Ipsos Mori report', commissioned by the UK Government titled "Views on Animal Experimentation". Since 1999, Ipsos Mori polls have consistently demonstrated that approximately 75 per cent of respondents 'conditionally accept' the use of animals in scientific and medical research. Generally, these polls are viewed as a reflection of public opinion (i.e. publics as 'conditional acceptors') and as serving as a direct pathway to establishing a social licence to research (see also:Raman and Mohr, 2014, Raman et al., 2017). However, their prevalence suggests the persistence of the deficit model of public understanding in this context (on this, see section 2.3.1., also see: Pound and Blaug, 2016, Hobson-West, 2012, Holmberg and Ideland, 2012, Taylor et al., 2018). This has prompted broader calls for a more engaged and enriched public dialogue, as explored in the following section.

2.1.4. Public Engagement with Science

Diving deeper into PUS literature, some scholars are now exploring what they consider a *fourth* wave in addition to the previously detailed three (from 'ignorance' to 'deficit' to 'dialogue'). This new perspective casts a critical eye on the extensive promotion of 'public engagement' activities. Sturgis (2014) and Horst (2014) contend that there is a potential misunderstanding (or perhaps misrepresentation) of what 'public engagement' can achieve for scientific policy. They suggest that public engagement

is not viewed as a procedural or one-size-fits-all solution to policy challenges, nor should it be seen as a shortcut to legitimacy if its outcomes are not adequately valued or implemented (Stirling, 2008, Thorpe and Gregory, 2010, Chilvers, 2012, Macnaghten and Chilvers, 2014, Stilgoe et al., 2014, Smallman, 2018). They also problematise that these interactions are often portrayed as opportunities to improve scientific literacy and garner public support rather than for facilitating genuine exchange and engagement with the necessary infrastructures and political mechanisms to respond to their outputs. Some scholars argue that ineffective public engagement only reinvigorates the criticised deficit model of the past (Rayner, 2004, Bauer, 2009), performing the act of engagement while reinforcing expert control by imposing the terms of engagement (Felt and Fochler, 2010, Barnett et al., 2012, Nowotny, 2014). These critiques have led Wynne (2006a) to question: is public engagement merely 'hitting the notes but missing the music?'.

Central to discussions about putting participatory approaches into practice is the concern that they often predetermine the roles expected of 'invited' publics and the views they are permitted to express as representatives of the 'public interest'. This raises questions about which perspectives and narratives are excluded from participation based on assumptions about who constitutes the 'general' or 'lay' public (Wehling, 2012, Welsh and Wynne, 2013, Marris, 2015, Raman et al., 2017). Such exclusions can result in the formation of 'micro-publics' that are systematically 'disinvited' because of their strong positions on a topic, while scientific and political institutions continue to claim they have engaged with 'the public' as a whole. Thus, these activities have previously been described as "technologies of community" (Rose, 1999, Irwin, 2006b) or "machineries of making publics" (Felt and Fochler, 2010), shaping how publics are invited, the roles they are expected/allowed to assume, and the specific questions posed to them (Michael and Brown, 2005). These micro-publics are systematically excluded, yet scientific and political institutions can still appear to be adhering to RRI agendas.

In the context of animal research, the continued reliance on opinion polling, as highlighted in the previous section (Section 2.1.3.), often draws criticism from those

advocating for more nuanced public dialogue. This is considered especially important here, as animal research is an intensely morally charged political issue with a history steeped in public scepticism (Rose, 2012, Davies et al., 2016b). Additionally, some scholars have pointed out the path dependency of animal research regulation, noting that policies are often shielded from public scrutiny due to past volatile interactions between science and animal liberation movements (Lyons, 2013, Germain et al., 2017). This influences the perception of which expertise is deemed 'legitimate'. In contrast, others are labelled as 'radical', 'irrational', 'biased' or 'unusually informed', often seen as 'a monstrous departure from the social order and in turn, the public interest' (Raman et al., 2017:230), thereby imposing restraints on who is allowed to represent 'the public'. STS scholars advocating for the value of public engagement and dialogue argue for including as diverse perspectives as possible to ensure meaningful engagement. They emphasise the importance of allowing 'alternative visions of the public interest to become temporarily visible and potentially compelling', rather than confining engagement within existing normative regulatory frameworks (Raman et al., 2017 :231).

2.1.5. Section conclusions:

This section has traced the historical trends in academic literature surrounding the dialogue between science and society, examining the repercussions of the resultant 'participatory turn' for the specific context of animal research. It highlights the push for more inclusive and meaningful engagement of diverse societal perspectives in regulatory processes, a cause often championed by the STS community. The breadth of STS and PUS work detailed in this section has played a significant role in policy innovations promoting 'responsible' research agendas. However, when examining these issues in the context of animal research, it becomes apparent that expert-driven governance structures are still highly prevalent, and there is still a heavy reliance on opinion polling to represent 'the public' perspective. This raises questions about the extent to which animal research governance has truly embraced this participatory shift – a critical inquiry central to this thesis. Similar to public engagement initiatives, ethics committees are a key mechanism that has emerged in recent years that aim to restore

trust in science and re-establish the legitimacy of scientific research. Committees such as the AWERB play a critical role in reviewing the justifiability and appropriateness of research programmes. However, as explored in the following section, they often lack substantial input from broader society. This highlights a critical gap where claims of 'ethical' legitimacy in research are typically made separately from the arenas where 'social' legitimacy is established.

2.2. Conceptualising a Public Engagement with Ethics Movement

All research governance frameworks inherently involve ethical considerations, as they are always concerned with making the 'right' regulatory choice for responsible research (Leese, 2017:1600). At the same time, 'public engagement' initiatives emphasise a bottom-up approach driven by societal values, while ethical legitimacy often stems from top-down principles set by professional communities. This reflects a tension between democratic and 'expertocratic' regulatory ideals. In this context, 'expertocratic' refers to the predominant influence of experts and expertise in regulatory contexts (Heipertz and Verdun, 2010). Yet, Felt et al. (2009:356) note that both 'public engagement' and 'ethical review' have emerged in response to a shared concern: a growing distrust of science and a crisis of legitimacy. These regulatory mechanisms seek to redefine the interactions between science and society, aiming to optimise and re-legitimise decision-making processes across various levels and domains in science (Schicktanz et al., 2012:129-130).

Accordingly, the two normative ideals have primarily emerged in parallel, within separate spaces and calling on different disciplines and experts. Some scholars have argued that the two approaches serve separate purposes (Bovenkerk and Poort, 2008), while others advocate for their integration, calling on social science scholars to advance this field (Schweda and Schicktanz, 2010, Moore, 2010a). However, exactly how a space of expert ethical review could/should become a 'space of resonance' in which 'mutual responsiveness' can be established poses both practical and

conceptual challenges (Leese, 2017:1612). This subsection explores the potential for incorporating diverse perspectives into ethical deliberations, acknowledging both the benefits and anticipated barriers. Firstly, it defines this thesis' conception of 'ethics' by distinguishing between the ontologies of 'institutional' ethics within review committees and the act of engaging in philosophical ethical reasoning.

2.2.1. Unpacking the dynamics of 'Institutional Ethics': A "new" kind of regulatory expertise?

Ethical Review Bodies (ERBs) are crucial in overseeing contemporary research involving live subjects, both human and animal. They are positioned to ensure 'ethical' conduct in research, as defined by established frameworks, guidelines, and standards. While the precise definition of 'good' ethics remains ambiguous (Chan, 2015), these frameworks typically aim to promote legal, ethically consistent, and socially acceptable research practices (Dyer and Demeritt, 2008, Moon, 2009). This thesis' core focus is the practical application of such frameworks, here termed 'institutional ethics', rather than traditional philosophical ethical reasoning ('traditional ethics'). Institutional ethics describes a relatively new approach to governing science and technology in institutions, which often do not require the expertise of a professional ethicist (Halse and Honey, 2007, Schicktanz et al., 2012:129), as exemplified by the AWERB. Latimer and Puig de la Bellacasa (2013) underscore this departure from traditional ethics by distinguishing between 'Ethics' (with a capital 'E') as a formal field of philosophical inquiry and 'ethics' (lowercase 'e'), which deals with practical ethical considerations within a specific professional context, such as laboratories or ethics committees. Some scholars have critiqued this departure as failing to truly engage with ethical inquiry (Crotty, 1996, Stark and Hedgecoe, 2010, Smith, 2016, Moore and Donnelly, 2018). However, Job (2014) cautions against oversimplifying the assessment of what constitutes 'ethics', urging social scientists to examine the evolving social and political boundaries of ethics instead.

Critically assessing 'institutional' ethics requires an understanding of its foundational principles and historical emergence. Schweda and Schicktanz (2010) note that most contemporary philosophical ethical perspectives generally acknowledge the relevance

of public input, whether as stakeholders (i.e. deontological, utilitarian, discourse ethics) or as a foundational element (i.e. preference utilitarianism/communitarianism or feminist and care ethics). Beyond traditional ethics, various sociological perspectives also stress the significance of adapting to evolving social values when addressing ethical/moral challenges, for example, in Rawls's (1971) seminal work *A Theory of Justice*. Equally, scholars like Habermas (1994) advocate for more explicit rational and inclusive discursive decision-making processes to pursue 'fairness'. Despite the emergence of the 'participatory turn' in science governance, institutional ethics committees appear to have retained their expert boundaries and authority more generally (Halse and Honey, 2007, Felt et al., 2009). Critics argue that many ERBs still privilege scientific expertise, framing both the 'problem' under review and the review process itself (Poort et al., 2013, Job, 2014, Moore and Donnelly, 2018, Olsson et al., 2019).

In the context of animal research, AWERBs employ a HBA framework (as detailed in Section 1.1.). This approach closely aligns with Utilitarian ethics, seeking to balance research benefits with animal welfare concerns (Nuffield Council on Bioethics, 2005, Sandoe and Christiansen, 2008, Rollin, 2012). However, some have argued there are also elements of Contractarianism driving its practice, given the prioritisation of human interests over animals' (Sandoe and Christiansen, 2008, Brønstad et al., 2016). Yet, adherence to this approach does not resolve the moral complexities of using animals in research (Regan, 1981, Russow, 1999, Engster, 2006, Walker, 2006, Twine, 2010, Varga, 2013, Röcklinsberg et al., 2014, Tjärnström et al., 2018, DeGrazia and Beauchamp, 2019). Advocates of alternative ethical theories, such as Deontological perspectives (which prioritise inherent principles of right and wrong) or an 'Ethics of Care' (which prioritises the role of emotions and personal relationships), challenge the adequacy of HBA's scope (Russow, 1999, Engster, 2006). Despite these challenges, the HBA framework remains the regulatory standard for animal research (in the UK and Europe), promoting a procedural, deliberative, and consensus-based approach (Brønstad et al., 2016, Grimm et al., 2019). Its application in institutional ethics committees carries numerous assumptions about expertise, publics, and the use of animals in scientific research (Friese et al., 2019).

In the context of the AWERB, there remains ambiguity regarding how, when, and to what extent broader societal perspectives are incorporated. This uncertainty is exemplified by the unclear role of the lay member and an over-reliance on simplistic opinion polling to determine public expectations (Hobson-West, 2010, Job, 2014, McGlacken, 2019, Salter, 2022). Critics argue that this lack of transparency leads to a failure to adequately address social concerns within animal ERBs (Röcklinsberg et al., 2014, McLeod and Hartley, 2018, Tjärnström et al., 2018, DeGrazia and Beauchamp, 2019, Grimm et al., 2019, Jörgensen et al., 2021), especially as 'institutional ethics' do not exist within a social vacuum and are themselves a heavily socially constructed process, as explored in the following section (Halse and Honey, 2007, Schicktanz et al., 2012).

2.2.2. Exploring the social dynamics of institutional ethics through 'ethical boundary work'

'Institutional' ethics, as a regulatory process, is influenced by a wide variety of factors such as regulatory/professional guidelines, neoliberal managerialism, institutional culture, and even the individual values of committee members (Halse and Honey, 2007, Schuppli, 2011, Stark, 2012, Hedgecoe, 2012). As a result, ethical review processes are often not as 'objective' as is implied (Stark, 2012). Despite this complexity, current research on ERBs tends to prioritise metrics such as decision consistency over social and situational influences (Black et al., 1995, Busby and Dolk, 1995, Lux et al., 2000). One area of STS scholarship that has considered these processes is 'Ethical-Boundary work', as an extension of Gieryn's (1983) concept of 'boundary work'. Originally developed as an exploration of rhetorical demarcation between "science" and other intellectual domains, Gieryn argued these boundaries are flexible, shaped by social consensus, and thus should be made subject to sociocultural evaluation. *Ethical* boundary work, advanced by Wainwright et al. (2006), explores how ethical justifications in research are rhetorically framed. The approach explores the implications of such discursive boundary-work on the perceived authority and legitimacy of science, resource allocation, and public trust through reference to 'ethics'.

Though limited, the existing literature on ethical boundary work on 'institutional ethics' (inside the laboratory or clinic, or review body) suggests scientists overly rely on laws, regulations, guidelines and frameworks as markers of ethical legitimacy (Wainwright et al., 2006, Frith et al., 2011, Hobson-West, 2012). Frith et al. (2011) introduce the concept of 'doing ethics' in ethical boundary work, exploring how clinicians in infertility practice distinguish between 'settled' and 'controversial' moral issues, creating a space of 'no ethics' in their practice where the ethical issue becomes routine. Similarly, Holmberg (2010) notes how certain concepts in the *in vitro* meat laboratory are seen as less threatening due to their routinisation within regulatory frameworks, suggesting this is a broader trend in ethical boundary work. However, both Hobson-West (2012) and Job (2014) reveal mixed feelings among researchers about the effectiveness of ethical guidelines for addressing unusual ethical dilemmas in practice. This paradox suggests that while research scientists may view regulations as a guide to ethical practice, they also find them inadequate for guiding day-to-day decision-making.

Ethical boundary work reveals the possibility that processes of institutional ethics are the result of social and rhetorical processes, despite the guise of objectivity often placed upon them (Wainwright et al., 2006, Frith et al., 2011, Hobson-West, 2012, Stephens, 2013). For example, Job (2014) argues the routinisation and bureaucratic entrenchment of certain aspects of animal research ethics. She emphasises this in the case of the 3Rs in particular, which she suggests are sometimes treated as resolving the ethical dimensions of animal research. Yet, she reminds us that the principles were ultimately produced 'by scientists, for scientists and in the interest of science, whatever advantages it may hold for the laboratory animal' (Job, 2014 :94). Job therefore warns against the increasing 'proceduralisation' of animal research ethical review which potentially diminishes the value of the 3Rs, which should be an active and reflective principle to reduce and refine animal research continually, and does not 'solve' its ethical dimensions entirely. This view reflects Frith et al. (2011) and Holmberg's (2010) contentions of 'settled' morality in 'ethical talk'. Understanding how these ethical boundaries are perceived and upheld beyond expert circles, such as among publics, is potentially crucial for determining how institutional ethics are legitimised or contested by broader society. While boundary work scholars have yet to extend the

concept to publics fully, emerging calls do exist for exploring how publics perceive and engages with ethics, as detailed in the following section.

2.2.3. From Public Engagement with Science to a Public Engagement with Ethics

This literature review, so far, has examined the evolving regulatory expertise of 'institutional ethics', arguing there is a strong case to explore this from an STS perspective and to consider the ways that wider society understands, relates to and engages with 'ethical review'. A small subset of academics have advocated for advancing a 'Public Engagement with Ethics' ('PEwE'), sometimes termed 'public bioethics', building on Public Engagement with *Science* discourse. Such calls highlight the need for a more democratic and participatory approach informing the ethical review process in meaningful ways (Jasanoff, 2005a, Schicktanz et al., 2012 :132). While several academics have articulated conceptual arguments for PEwE (Kelly, 2003, Felt et al., 2009, Schweda and Schicktanz, 2010, Moore, 2010b, Schicktanz et al., 2012), instances of empirically exploring the concept are limited. Existing examples have tended to focus on the context of genomics (Miah, 2005, Felt et al., 2009), and there are no existing examples of its application to animal research.

Schicktanz et al. (2012) and Schweda and Schicktanz (2010) introduced the concept of PEwE, which in part intersect with existing discussions on 'public bioethics' by Kelly (2003), Kim et al. (2009), Moore (2010b) and Pickersgill (2011). Unlike more established concepts like 'empirical bioethics', which advocate for integrating empirical methods into bioethical debates, PEwE critically examines the frameworks of institutional ethics, such as the ethical review body, exploring how science, society, and ethical decision-making interact (Schicktanz et al., 2012). These critiques stem from the notion that institutional ERBs can be influenced by social norms, values, and power dynamics. For instance, Kelly (2003) reflects on a scientific or 'technical' framing of ethics, relying on notions of rationality, objectivity and dependence on 'ethical expert' judgement, which may not fully represent public perspectives. Moore (2010b) and Poort et al. (2013) criticise ERBs for striving towards a 'social consensus

formation’ based on an abstract and common morality defined by experts, presenting outcomes as authoritatively 'ethical' without sufficient scrutiny. Consequently, “ethics” emerges as a new kind of expertise influencing decision-making in scientific institutions, though its implications in modern democracies are unclear. Felt et al. (2009:5) reflect on the paradox of scientific experts retaining privileged positions to define and frame ethical problems in such committees amidst a broader crisis of expertise in scientific policy-making.

In response to such criticisms, advocates of a PEwE advocate for increased public engagement in ethical review systems to broaden the scope, legitimacy and sustainability of ethical considerations within scientific institutions (Schweda and Schicktanz, 2010, Schicktanz et al., 2012). Given ethics' more regulatory function in these contexts (rather than academic moral philosophy), the question should not be whether to include publics but how to do so effectively and meaningfully. Pickersgill (2011) suggests that the wealth of social science research on PUS provides a solid foundation for such efforts, encouraging STS scholars to consider public engagement with ethics as part of their commitment to the participatory turn, aiming to capture the ideational and motivational resources of diverse publics fully (Felt et al., 2009, Schweda and Schicktanz, 2010). However, questions still need to be answered about *whom* to include and in *what* capacity. This is particularly pertinent to the case of animal research, as AWERBs are anticipated to improve public confidence in regulatory systems (Rose, 2012). Still, more research is required to examine the interplay between public perception, AWERBs, and ethics.

2.2.4. Section conclusions:

This subsection has explored the evolving landscape of research governance, mainly focusing on the emergence of ‘institutional ethics’ as a regulatory response to demands for responsibility and accountability in research practice. This emerging concept encompasses various social roles and practical functions aimed at optimising ethical decision-making processes. Despite the shift towards participatory science governance, the “ethics industry” has often been overlooked in PUS research. By

introducing the concept of ‘ethical boundary work’, this section has explored how ethical review is not merely a site of objective review but also a product of broader cultural and social processes and power dynamics. Many structural, practical, and conceptual barriers to redistributing power in scientific policymaking are, therefore, likewise relevant to ethical decision-making. Efforts to bridge these concepts through establishing 'Public Engagement with Ethics' as a field of inquiry aim to capture diverse public perspectives on ethics. This approach broadens the scope of ethical review and enhances its social legitimacy. Still, methodological challenges persist in understanding and integrating diverse publics into such systems, particularly in complex domains like animal research, where governance structures remain out of reach of wider publics. These methodological obstacles are further examined in the subsequent section of this literature review.

2.3. Methodological considerations: Exploring publics’ expectations of animal research governance through the lens of ethical review

Given the compelling argument for empirically investigating the subject of ethical review on the particular topic of animal research with a diverse public, this literature review section explores what this might mean methodologically. In doing so, it highlights critical conceptual challenges to researching this relationship. Such challenges include how to access the views of publics on the topic of ethics in laboratory animal research and how to account for the hierarchy of expertise inherent in this framing. These challenges are addressed in this section first with the topic of animal research and then with the topic of ethics, also exploring the implications of the relatively limited use of qualitative research methods in each of these areas. This abundance of opinion polling significantly shapes the existing characterisations of *who* animal research publics are, their capacity for engagement and the diversity of positions on the topic. Recognising this, the final sub-section of this literature review

introduces the conceptual framework of *socio-technical imaginaries* as a promising approach to addressing these challenges.

2.3.1. Accessing 'public opinion' on the topic of laboratory animal research

Policymakers have traditionally construed 'public opinion' as quantified through standardised opinion polls, considering it a snapshot of collective sentiment (Perrin and McFarland, 2011). However, Javet (2017:203) argues that opinion polling to garner public opinion does not seek to *understand* individual situations but rather to grasp the 'the greater or lesser distribution of an opinion through different social groups'. Contemporary sociologists working within the qualitative research paradigm advocate for innovative approaches integrating biography, context, and history to make sense of everyday experiences (Gane and Back, 2012, Pyyhtinen, 2015). PUS discourse has shifted substantially in response to growing calls for empirical sociological research to develop methods that provide a more holistic understanding of social phenomena (See section 2.1.3.). These shifts are partly driven by the recognition that analysing public sentiment without considering people's diverse and complex connections with modern science, politics, and other social institutions is limiting.

This limitation becomes particularly problematic in discussions concerning the human-laboratory animal science relationship, where opinion polls have indicated, and policy has been based on, a 'conditional acceptance' of animal research (Davies et al., 2021). However, if opinion polls only provide a snapshot of 'public opinion', they cannot fully capture the myriad, and often conflicting, relationships humans have with animals throughout society (Gorman and Davies, 2020, Davies et al., 2021). For example, early polls frequently portrayed individuals' moral stances as fixed and influenced by personal characteristics such as age or gender or by certain *acquired* characteristics such as rural or urban locality, familiarity with the species, or pet ownership (Herzog et al., 1991, Driscoll, 1992, Broida et al., 1993, Pifer, 1996, Eldridge and Gluck, 1996, Matthews and Herzog, 1997, Peek et al., 1997, Hagelin et al., 2003, Ormandy et al., 2013). This simplistic dichotomy of categorising publics as either 'accepting' or

‘opposed’ to animal research persisted within policy circles (Nuffield Council on Bioethics, 2005) until more recent accounts highlighted the importance of precise question wording and allowing for nuance in response (Stanisstreet et al., 2006, Swami et al., 2008, Knight and Barnett, 2008, Knight et al., 2009, Henry and Pulcino, 2009, Ormandy et al., 2012, Ormandy et al., 2013, Ormandy and Schuppli, 2014). Despite these improvements, some still have doubts about whether opinion polling can fully capture the complexity and fluidity of public ‘opinion’ (Perrin and McFarland, 2011, Javet, 2017). While opinion polls offer a broad overview of public perspectives, they often fall short of explaining the underlying reasons or the strength of these sentiments, the extent to which they transcend the research context, and the complex social dynamics and individual roles that influence the process of ‘opinion’ formation in the first place.

As such, qualitative methodologies hold significant potential for delving deeper into the intricate relationship between humans and animals in contemporary society (Agricultural & Environmental Biotechnology Committee (AEBC), 2002). However, only a handful of sociological studies have committed to using participatory qualitative methods to capture the diversity of publics’ perspectives on animal research. This section examines two such studies, with two further examples addressed later in this review chapter as they explore the topic of ethics (section 2.3.3.). The first study discussed here, conducted by Macnaghten (2001), employed a ’topic-specific sampling strategy’ to organise eight focus groups, each comprising distinct predetermined social groups such as pet owners, farmers, and wildlife enthusiasts. The findings suggested that public acceptability of animal research significantly hinges on critical conditions around how animals are used that the government must recognise and foster to uphold its democratic mandate (Macnaghten, 2001:35). While this study aligns with this thesis’ aim to engage publics within their rich socio-cultural contexts, Macnaghten’s approach of categorising participants into specific social groups diverges from the intentions of this thesis. Such categorisation may inadvertently limit participants’ opportunity to simultaneously represent multiple professional and social identities. This raises intriguing questions about how

participants negotiate various social roles introspectively and in conversation with others (Hydén and Bülow, 2003).

Another pertinent empirical study, conducted by McGlacken (2019) using the Mass Observation Project (MOP) archive (a national life-writing project in the UK) considers how respondents relate to animal research in their everyday lives. Unlike Macnaghten's approach, McGlacken's analysis explicitly acknowledges that individuals occupy various social capacities simultaneously, emphasising the importance of allowing participants to express these concurrently through individually written pieces of text. Both studies serve as compelling examples advocating for qualitative and participatory research methods that effectively capture diverse perspectives and values. They enable a much broader and more contextual exploration of publics' relationships with animals and animal research, and demonstrate the value of doing so.

2.3.2. Engaging publics through the additional lens of institutional ethical review

As discussed in Section 2.2.3., engaging publics in discussions about institutional ethics presents methodological challenges. One such issue, as noted by Macnaghten (2001:9), is that using 'lay publics' as a sample often means touching 'on thorny and generally unarticulated aspects of their lives and behaviours', making it not always especially useful to explore participants existing positions on such matters. As Lund et al. (2012:488) posit, if knowledge is generally low, the moderators' role becomes much more influential in framing the issues and guiding participants' thought processes as they form opinions. Moore (2010a) suggests that efforts to 'democratise' ethics may inadvertently reinforce hierarchical structures due to the historical exclusion of public voices in expert ethical debate and decision-making. This view is echoed by Felt et al. (2009), who assert that framing a discussion as "ethical" inherently implies that public values are less persuasive than expert consensus. In light of the critical STS perspectives explored in this literature review, it becomes compelling to consider *how* participants are called upon to engage with ethics and how issues are framed to avoid perpetuating power imbalances or deficit model

approaches (Schicktanz et al., 2012:136). Social science researchers aiming to contribute empirically to PEwE discourse must navigate these complexities carefully. Stimulating ethical discussions requires careful framing and mindful 'categorisation' of the publics it calls upon, or there is a risk of reintroducing 'old problems of expertise in new ways' (Moore, 2010a:208).

As previously suggested, there is a notable scarcity of empirical research concerning publics' understanding of an institutional ethical review body. Notable surveys conducted by Kent (1997) and Fritschi et al. (2015) on 'community understanding' of medical research committees in the UK and Australia (respectively) consistently found low awareness, with significant variability in understanding their role. For example, nearly half of Fritschi et al.'s (2015) participants indicated that the key function of an ethics committee was to design research and obtain funding, which, as with AWERBs, is not the case. Concerning animal research, existing opinion polling suggests that knowledge of these processes remains low. For instance, the latest Ipsos MORI (2018) report highlights an overall 'lack of familiarity' among participants with the whole regulatory system.

Among the limited examples exploring how publics understand and relates to animal research ethical review, participants demonstrate both an ability and willingness to engage in complex and challenging ethical discussions. For example, in research by Galvin and Herzog (1992), US participants imagined sitting on a hypothetical 'Institutional Animal Care and Use Committee'. They individually reviewed five research proposals and reflected on whether the use of animals should be approved or denied, identifying factors influencing their decision-making. This study demonstrated that aspects of research design significantly influenced participants' decisions, a finding not fully captured by opinion polling until decades later, highlighting the value of less ridged and more creative qualitative research methodologies. Another example is a public engagement activity which was part of the Animal Research Nexus Programme (Crudgington, 2019, Crudgington et al., 2024), which used elements of performance, gaming and technology to engage participants in ethical decision-making within a simulated medical facility ('BioCore'). While both Galvin and Herzog's

research and Crudgington's public engagement activity are valuable examples of how publics can engage fruitfully with the 'tricky' concept of ethical review when research is tailored to their needs, they both required participants to adopt the role of imagined professionals on an ethics committee. In this sense, there is a possibility that participants may overlook their unique perspective and embodied 'publicness'.

Few initiatives to date have actively engaged publics in discussions on institutional ethics from their own situated positions. Felt et al. (2009) offer a rare example, albeit not on the topic of animal research. Their study convened publics with other experts to discuss the ethical dimensions of genome research, revealing that while participants expressed strong ethical positions when talking among themselves, they often deferred ethical questions to "the experts" when faced with professionals. This tendency highlights the potential influence of perceived expert hierarchies on discussions, even when participants have proven to engage previously. Both Felt et al. (2009) and Crudgington et al. (2024) emphasise the importance of creating a space of trust, acknowledging participants' emotions, and fostering inclusivity of diverse positions as essential starting points. As Pickersgill (2011) has suggested, there is a rich body of STS and PUS literature that offers a solid foundation for engaging publics on the complex and unarticulated issues of science more generally. Drawing on this wealth of literature can help shed light on social dynamics and collective understandings of power, expertise, and trust around institutional ethics, rather than gauging pre-held knowledge (per the deficit model). The following section details how this project draws heavily from the STS concept of Socio-technical Imaginaries as a good example of such literature that can help conceptualise a PEwE.

2.3.3. Socio-technical Imaginaries: A deeper engagement with public perspectives

One valuable way the social sciences can address the task of engaging more deeply with public perspectives, according to Welsh and Wynne (2013:540), is by using the conceptual lens of 'imaginaries' to foster a more engaged and expansive understanding (See also: Smallman (2019)). While the modern sociological imagination, as defined by Wright Mills (1959), seeks to deepen our understanding of

the interactions between individual experiences and societal structures, 'socio-technical imaginaries' operate at a different analytical level, though are conceptually linked. The framework provides a theoretical lens through which to explore how science and technology shape and are shaped by social structures, norms and values. The foundation of 'imaginaries' in Sociology was Anderson's (1983) *Imagined Communities*, where he explores the 'imaginaries' that shape notions of community and nationhood, emphasising the role of newspapers and novels in their construction and maintenance. Building on Anderson's ideas, Taylor (2004) expanded the concept to *Modern Social Imaginaries,* focusing on 'the way that ordinary people imagine their 'social' surroundings' (2004 :171). His focus was the collective understanding of the economy (particularly, the capitalist ethos), the public sphere (or 'publicness'), and the notion of the 'self-governing' citizen. Thus, imaginaries provide a means to explore a domain that exists in a 'fluid middle ground between embodied practices and explicit doctrines' (Goankar, 2002 :11). However, the effective empirical and practical investigation of imaginaries remains a subject of debate given that they are hard to explicitly define (Arruda, 2015, Herbrik and Schlechtriemen, 2019). Yet, many scholars emphasise the importance of stories, images, media and language in developing the imaginaries that are perpetuated within a society (Taylor, 2004 :23).

The concept of imaginaries was developed into the study of *socio-technical* imaginaries by scholars in STS. Jasanoff and Kim (2009:123), who played a crucial role in developing the concept, define it as existing 'in the realm of metaphors and cultural meanings that publics draw from when building stances and opinions on matters of science and technology'. They describe these imaginaries as 'frames' or 'rhetorical tools' for conceptualising scientific and technological issues and their relationship with political institutions and wider society. As the 'social imaginaries' discussed above, *socio-technical* imaginaries are also concerned with collective, negotiated and relational configurations (Welsh and Wynne, 2013 :548). However, the latter tend to focus more explicitly on 'idealised distributions of responsibility' or 'spatial tropes that guide norms in political relations, particularly in terms of the roles and responsibilities of actors and the power of institutions at scales' (Waters and Barnett, 2017 :712).

Socio-technical imaginaries have served as a conceptual tool across various topics in the field of STS. They have been applied to assess the process of development of scientific research (Jasanoff and Kim, 2009, Levy and Spicer, 2013, Jasanoff, 2015), the social actors and institutions involved in promoting and regulating these interventions (Welsh and Wynne, 2013, Smallman, 2018, Smallman, 2019, Kenny and Mamo, 2020), and the engagement of 'publics' within such systems (Nowotny, 2014, de Saille, 2015, Marris, 2015, Smallman, 2018). It has been applied to the topic of animal research in a few key ways. Firstly, this work addresses *who* 'the general public' is imagined to be, including how publics can be considered at times 'un-or misinformed', thus undermining their influence on policymaking (McGlacken and Hobson- West, 2022). Conversely, certain groups, such as animal welfare activists, may be sidelined from public discourse as being 'overly informed' and, therefore, not sufficiently 'lay' (Raman and Mohr, 2014). Additionally, scientists often perceive themselves as distinct from the imaginary of the 'general public', positioning themselves outside of the rest of society (Bracken Scott, 2016). A further application in the animal research context, surrounds who 'the animal' is. For example, Hobson-West and Davies (2018) argue that discussions on 'animal sentience' are 'entangled with a particular imaginary of how the general public or wider society views animal species, shaping a 'societal sentience' that significantly influences regulation and scientific practice (2018 :672). These examples illustrate how the socio-technical imaginaries framework integrates assumptions, values, and power dynamics into examining science and technology.

2.3.4. Applying socio-technical imaginaries to the context of ethics

Expanding the scope of socio-technical imaginaries to encompass institutional ethics remains relatively unexplored in STS literature. Notable examples include Kenny and Mamo (2020), whose exploration of 'imaginaries of precision public health initiatives' discusses the role of 'promises' and 'aspirations' in shaping ethical discourse surrounding the topic. Another example is the research by Coveney et al. (2019) on the 'imaginaries of pharmaceutical cognitive-enhancing drugs', touching on how 'ethical experts' influence 'popular consciousness' about the use and effects of these

drugs, impacting research agendas, policy responses and media discourse. However, neither of these studies explicitly centres on the framing of imaginaries of 'ethics', 'ethical talk' or 'ethical review' as their core focus, as this thesis does. As such, the framework needs to be better defined to be productive in this thesis. The specific use of imaginaries employed in this thesis aligns most closely with that of Sheila Jasanoff's conceptualisations of socio-technical Imaginaries, which she defines as follows:

> *"Imaginaries, moreover, encode not only visions of what is attainable through science and technology, but also of* ***how life ought, or ought not, to be lived****… Taking these complexities into account, we redefine sociotechnical imaginaries as collectively held, institutionally stabilized, and publicly performed* ***visions of desirable futures****, animated by shared understandings of forms of social life and social order attainable through, and supportive of, advances in science and technology.'*
>
> (Jasanoff, 2015:4; *emphasis added)*

This thesis' exploration of imaginaries as a form of pragmatic idealism differs from the typical academic usage of 'imaginaries' in the social sciences. Milkoreit points out that scholars like Castoriadis, Taylor, and Anderson (all explored above as key contributors to the development of imaginaries) use the concept to reflect on the underlying structures of a group or society. Their focus is on 'present conditions, possibly including a historical dimension tending to the question of how the current structures took form' (Milkoreit, 2017:2). On the other hand, Jasanoff and Kim (2015) use the concept to explore future-oriented projections and possibilities of socio-technical research and innovation, and how they drive (or inhibit) the development of science and technology and its regulation (Kenny and Mamo, 2020, Levidow and Raman, 2020). These projections are not just rhetorical, but they actively shape the trajectory of science, laden with promises and visions that structure research agendas and future applications (Milne, 2012).

Arguably, the concept of 'ethics' is inherently tied to envisioning the future, making the work of scholars like Oomen et al. (2022), Hajer and Versteeg (2019) and Hajer and Pelzer (2018) highly relevant. Their research, also influenced by Jasanoff (2015),

introduces the concept of ‘Techniques of Futuring’, developed in the context of climate and energy politics to explore ‘why certain futuring interventions lead to performative imagined futures while others don’t’ (Oomen et al., 2022:264). Also, drawing from sociological concepts of *The Sociology of Expectations* (See: Borup et al., 2006) and *The Sociology of Hope* (See: Peterson and Wilkinson, 2015), they investigate how collective imaginations of the future intersect with social practices and shape reality (Oomen et al., 2022:252). Yet, empirical examples of the application of ‘Techniques of Futuring’ tend to explore more active and explicit incidents of future goal setting and strategic goal pursuit among experts. This thesis departs from this body of work (although it draws extensively from its theory development) in two senses. Firstly, it seeks to foreground the tacit imaginaries of the future codified into policy and guidance that advise on the day-to-day operation of ethical review in the UK AWERB and through informal focus groups, rather than overt instances of joint future thinking at a policy level. Secondly, this analytical framework holds an explicit ‘ethical’ element, which this work does not.

Exploring imaginaries of institutional ethics through this future-oriented lens is particularly pertinent to animal research, given the anticipatory nature of its regulatory context. ASPA itself is based around a promissory future – a vision where viable alternatives surpass the need for animals in research. The commitment to the principles of the ‘3Rs’ represents an industry-wide commitment to reduce the need for animals in scientific inquiry, achieved through the development of replacements and the refinement of processes until animal use becomes unnecessary (Russell and Burch, 1959). It is also apparent that the very concept of ‘ethical review’ is equally future-orientated, representing an institutionalised desire to break with the past and shape a particular animal research future. Advancements in science and technology are increasingly shaped and driven by imagined future needs, preferences and challenges faced by future generations (Graf and Sonnberger, 2020).

With this reframing of imaginaries, I propose the value in developing a concept of ‘Imaginaries of Ethics’, drawing on future-oriented imaginaries, in the context of institutional ethical review. This perspective implies that these ‘imaginaries’ play a

foundational, albeit often implicit, role in shaping institutional ethical review processes governing scientific and medical research, thus significantly influencing the decisions and outcomes of such committees. *Imaginaries of Ethics* diverge from existing RRI processes like horizon scanning, which engage in joint future planning at a policy level, assessing potential implications based on available evidence (essentially 'predicting' the future) (Hester et al., 2015:123). *Imaginaries of Ethics* are more conceptual and fluid, rooted in collective values and beliefs rather than serving as tools for decision-making based solely on available evidence. This means that they are not static but that they continually evolve through contestation and interpretation-shifting possibilities.

2.4. Chapter Conclusions:

This literature review underscores the pressing need to critically examine, using the STS perspective, the nature, legitimacy, and influence of expertise within institutional ethics committees. These committees wield increasing power in delineating acceptable research practices in contemporary society. However, the specific ideologies or expertise guiding their decisions and political standing in modern democracies remain ambiguous (Schicktanz et al., 2012). Furthermore, it highlights that despite the broader trend toward participatory approaches in science governance, institutional ethical systems have yet to fully embrace this “participatory turn”. Consequently, through this chapter, I have argued the need to examine how publics engage with institutional ethical review processes, a task conceptualised as ‘Public Engagement with Ethics’ (PEwE). Following shifts in PUS research, I also argue that such efforts should focus on establishing conceptual and methodological groundwork to integrate a broader spectrum of empirical insights into institutional ethics. This integration ensures the sustainability, legitimacy and scope of ethical decision-making in research regulatory systems and should aim to mitigate ideological bias (Schicktanz et al., 2012). Failing to adequately respond to such calls risks undermining the social legitimacy of ethical decisions within institutions, particularly in the longstanding contentious issue of animal research.

In this chapter, I have explored the methodological dimensions of engaging publics on the topics of animal research and ethical review. I emphasise fostering and exploring diverse perspectives through open discussion and debate framed within rich sociocultural contexts. In doing so, I propose a reframing of 'socio-technical imaginaries' into 'imaginaries of ethics' to conceptualise the dynamic between lay publics, ethical review processes, and the future trajectory of laboratory animal research. Here, animal research is demonstrated to be a particularly compelling case through which to develop this conceptual lens, as it does not directly impact individuals as patients or participants, unlike human medical research. Instead, it holds implications for citizens in democratic societies where animals hold significant cultural value, which is evident in the various social relationships we have with them in modern society. Consequently, publics' active influence in institutional ethical decision-making processes may not be apparent, especially considering the historical imperative for an elevated level of regulatory secrecy due to concerns about animal rights activism. The formulation of *Imaginaries of Ethics* not only fills the noted void in theoretical academic exploration concerning the correlation between institutional ethics and public perception but also offers a viable empirical framework through which to explore how the public understands and interacts with animal ethics review processes as detailed in the following methodology chapter.

Chapter Three: Applying Imaginaries of Ethics *to Animal Research Policy and to Animal Research Publics*

The previous two chapters have highlighted two primary objectives of this thesis: to advance the field of PEwE and to explore public and policy expectations regarding ethical review in animal research. The literature review highlighted the need for more participatory approaches in science regulation (section 2.1) and identified a gap in research on ethical review (section 2.2). Given the increasing importance of institutional ethics in research governance, I argue that this gap is problematic. However, I also highlight the methodological challenges associated with PEwE, such as the unfamiliarity many laypeople have with these systems, which makes it difficult for them to form informed opinions without being influenced by implied power dynamics innate to the subject. To address these challenges, I emphasised the importance of thoughtfully framing the topic of 'ethics', prioritising inclusive participation, and capturing the rich socio-cultural context of their deliberation rather than ‘opinion’ on the matter. Based on this, I have developed the conceptual lens of ‘Imaginaries of Ethics’, arguing its value in attending to these goals. This chapter demonstrates this framework's applicability to AWERB policy and guidance documents, as well as the outputs of focus groups with lay participants. It is structured in three parts: first, detailing the process of document analysis (3.1); second, describing the construction of the focus groups (3.2); and finally, explaining how *Imaginaries of Ethics* was operationalised in the analysis, including the process of ‘storyline’ identification, inspired by Hajer (2005), as foundational to the practical study of imaginaries.

3.1. Using Policy Document Analysis as a Method

The empirical portion of this research began with a document analysis of key policy

and guidance documents advising the operation of the UK AWERB. Although this phase was not initially planned, it quickly became evident that the context of animal research policy was much more complex than anticipated, especially for someone new to the topic, like myself. In trying to understand the legal mandate for the AWERB, I realised that these bodies operated with considerable autonomy in interpreting the ASPA, particularly in their approach to ethics. AWERBs are expected to primarily consider proposals from a local perspective, bringing local knowledge and expertise to bear (Home Office, 2014:88). They have a series of minimum and additional tasks, with ethics mentioned only as part of the latter and no clear prescription of what ethics should entail beyond general references to the 3Rs and HBA. Further exploration revealed a multitude of stakeholders, including research funders, governing bodies, professional societies, and animal welfare charities, each producing guidance to inspire AWERB practice, albeit with different intentions and varying authority. It became clear that examining only the core policy literature would provide a very partial understanding of the policy expectations for animal research ethical review. As such, the documents reviewed (in Chapter 4) are integral to a process that elevates some imagined futures over others and helps set research priorities. They shape how their intended readers (non-ethicist AWERB members) envision ethics, the appropriate process and outcome of institutional ethical review, and publics' stake in these processes. All 15 documents assert a normative agenda on the possibilities of institutional ethical review and form a key part of the *Imaginaries of Ethics* that drive it. This is particularly pertinent when considering how scholars of ethical boundary work reflect on the centrality of ethics frameworks and guidance as indicators of ethical conduct (Wainwright et al., 2006, Frith et al., 2011, Hobson-West, 2012).

The documents selected all provide guidance on the UK government's mandate for an AWERB and are written for professionals preparing to sit on the committee. They incorporate a variety of governmental and non-governmental bodies, thus adopting a 'nexus' approach to policy analysis. Through this activity, I aimed to transcend conventional policy analyses of hierarchical power structures, instead exploring the complex interactions between diverse stakeholders as they negotiate 'best practice' (Stein et al., 2014). As such, the documents were not read individually as 'windows

into social and organisational realities' (Bryman, 2008 :554) but rather as creating a level of 'reality' when read together (a distinct ontological status) (Atkinson and Coffey, 2011). Analysing multiple guidance documents from various stakeholders unveiled unforeseen connections and differences I may have missed by focusing solely on purely legislative texts like ASPA (Brown, 2003). Therefore, the concept of 'intertextuality' became pivotal – how the documents interrelated in their reference and responses to one another (Atkinson and Coffey, 2011). The analysis approach was fine-tuned through a pilot document analysis conducted as part of the ESRC DTP '1+3 award', which allowed me to reflect on how I could analyse the rhetoric of the documents while still recognising their broader context.

It is also important to preface the analysis of these documents with a reminder that AWERBs are mandated to adhere to their 'local values'. As explored at the outset of this chapter, each AWERB operates within distinct institutional frameworks characterised by size, scope, funding, research culture, and more. This project does not purport to ascertain how 'ethics' manifests within individual AWERBs based solely on these documents; instead, it seeks to elucidate the complex negotiation process as key stakeholders seek to influence 'best practice'. Therefore, the document analysis phase was designed to allow me to critically comprehend the regulatory landscape, its actors, and internal dynamics.

3.1.1. Selecting the policy and guidance documents (and a note on their authors)

The selection criteria for the legal, policy, and guidance documents were refined iteratively during the search process, aiming to include all widely available documents that reference the role of a UK AWERB. The criteria were as follows:

- Guidance, 'guiding principles', 'resource books' or similar on the topic of AWERBs, ethics, welfare, transport, housing & husbandry, etc.
- Freely accessible online.
- Published after 1st January 2013 (with the exception of ASPA itself), as this was when AWERBs were formally made mandatory in the UK.

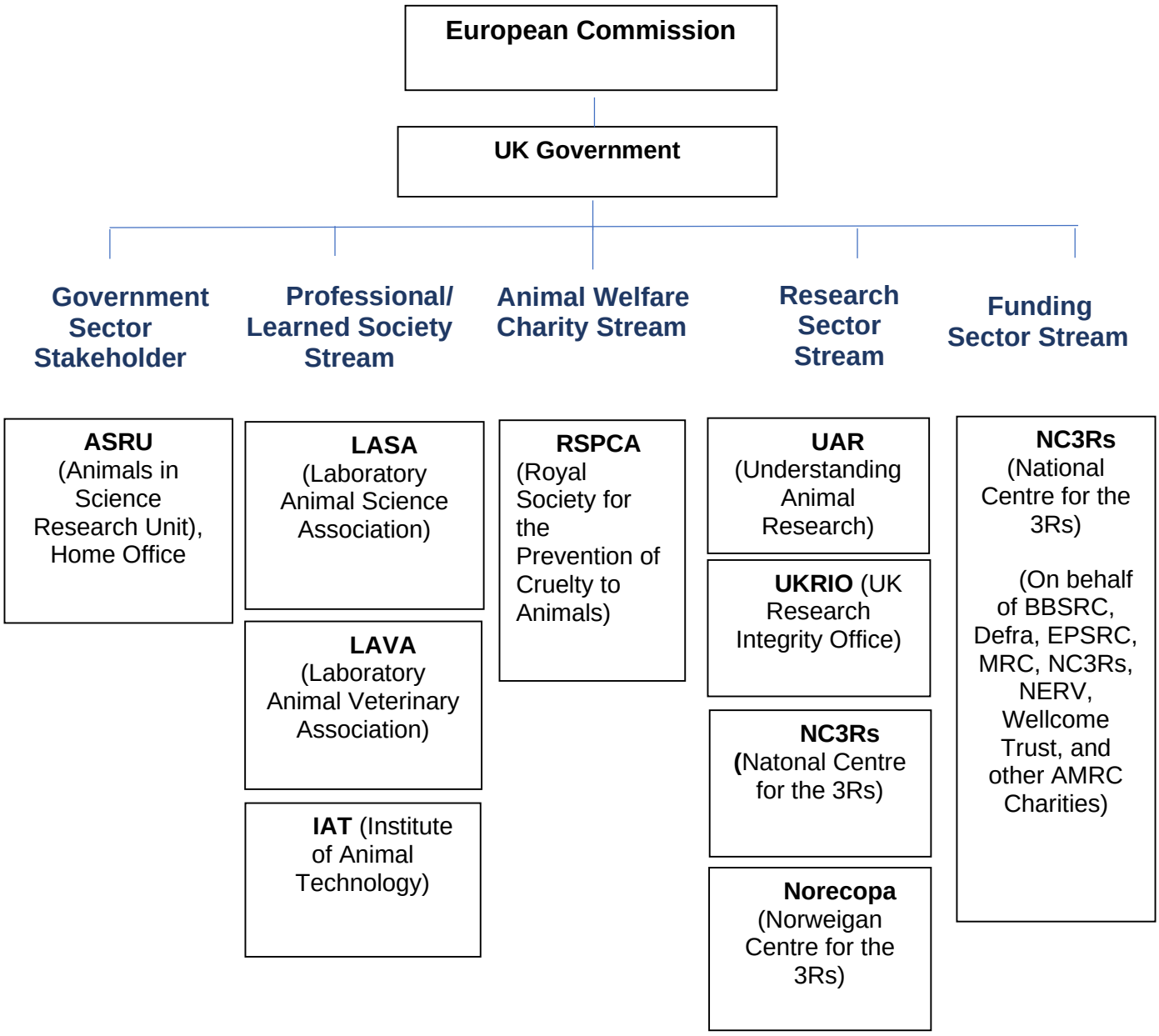
- Either specific UK guidance or international guidance in general circulation in the UK.

A snowball sampling approach was used, starting with a key document published by the UK Home Office titled "*Guidance on the Operation of ASPA"* (2015). The reference list of this primary document was then carefully reviewed for relevant materials, and as additional documents were identified, this process was repeated. While time-consuming, this step was crucial, given my limited familiarity with the policy context, and to ensure that I captured all key guidance. I then explored the websites of stakeholders mentioned in the initial document, such as the Department of Health, major animal breeders, and research funders in the UK. I also searched online databases, including Web of Science and Google Scholar, using targeted terms like "guidance" and "guiding principles" alongside "ASPA," "AWERB," "animal research project licence," and "animal research ethical review process" to identify any more recent publications not cited in older documents. In addition to this, as mentioned in the Introductory chapter (P.13), I benefited from a collaborative relationship with the RSPCA Animals in Science team and their broader network of academics, scientists, and experts in the field as part of the ESRC Collaborative Studentship that funded this research. This partnership proved invaluable, allowing me to consult with experts at key stages of my research and present findings at stakeholder engagement meetings (see Page 4, Dissemination of Research Findings). During the sampling process, I arranged an informal meeting with my mentor at the RSPCA to review my selected documents. I sought advice on the relevance of the documents, their reception within the animal research community at the time, and any additional context I should consider. I also consulted colleagues at the University of Nottingham, who specialise in the social, ethical, and scientific implications of animal research, to further refine my sample. These interactions were crucial in ensuring that, with the expertise and guidance of my collaborators and colleagues, I had gathered all relevant policy and guidance documents.

The documents eventually selected varied between 12 and 212 pages long, although many of the longer examples addressed several topics, of which AWERBs were just

one section. The complete list of documents used is detailed in Appendix B. The diagram presented on the subsequent page (Figure 1.) illustrates the primary publishers of these 15 documents and the wide variety of stakeholder categories (or networks) to which they belong (more details on this are provided in section 4.1. & Appendix A). I assigned these stakeholder categories as part of the analysis process

Figure 1. Stakeholder Networks of AWERB Policy and Guidance Documents



Overall, this document analysis yielded valuable insights into how AWERB guidance represents both ‘ethics’ and ‘publics’, revealing interactions among stakeholders and the various ideologies at play within a complex policy context. These findings were crucial for shaping the design and subsequent analysis of focus group discussions, as detailed in the following section.

3.2. Using Focus Groups as a Method

The focus groups were crafted to tap into the methods' potential for generating rich, nuanced qualitative data, aiming to address gaps in the literature highlighted in the previous chapter. Their use establishes a structured yet interactive platform wherein participants could openly explore their thoughts, perceptions, and ideas, fostering collective sensemaking. As Morgan (1988:12) notes, focus groups offer ‘insights that would be less accessible without the interaction found in a group setting’ (see also: Ryan et al., 2014). This allowed me to construct and analyse ‘data’ as a product of social interaction, acknowledging its perpetually evolving nature (Catterall and Maclaren, 1997, Smithson, 2000, Silverman, 2006). The work of Macnaghten (2001), explored in the literature review chapter (see section 2.3.1.), serves as compelling evidence of the value of such an approach. Although it did not share the same conceptual or thematic goals as this thesis, it served as inspiration for using the focus groups as a robust methodology for investigating how ‘knowledge’ is actively created, communicated, and negotiated through dialogue and interaction. Consequently, I found this method invaluable for interpreting the underlying social values and worldviews that underpin and inform the ‘publicly performed visions of desirable futures’ as articulated by Jasanoff and Kim (2015). Equally, their use is particularly valuable in exploring subjects that participants may have had little prior exposure to (Milne, 2008), such as an institutional ethical review.

These sessions took place during the spring/summer of 2022, specifically between April and June. A total of 6 groups were convened, each comprising four to five participants, amounting to a sample of 28 in total. While originally, I had hoped that these sessions would take place in person, the COVID-19 pandemic and associated

social distancing regulations, as well as university-mandated research protocols, necessitated a shift to an online format using Microsoft Teams (the university-approved video conferencing tool). This decision persisted even after the reinstatement of ‘normal’ research procedures; a rationale further explored in the following section on recruitment.

The use of Microsoft Teams (or ‘Teams’) impacted the determination of sample size, which I decided to cap at five per group. As highlighted by Lobe et al. (2020:4), conducting focus groups with more than five participants becomes notably challenging, given the limitations imposed on Teams on the number of individuals visible on screen at any one time (See also: Morgan and Lobe, 2011, Lobe, 2017). Therefore, the possible inability to see all participants on the call may have impeded the natural flow of conversation and the ‘comfortability’ of participants. Moreover, I also considered a group size of no more than five participants would be conducive to addressing all thematic elements within the allocated two-hour timeframe (Morgan, 1998, Mann and Stewart, 2000, Barbour, 2007, Bryman, 2008). During the focus group planning phase, I also determined I would conduct a total of six groups based on the insights of other researchers who had conducted focus groups with a similar timeframe that have emphasised contextually rich thematic analysis (Hennick et al., 2019). However, the potential for conducting additional groups was left open for consideration, contingent upon the emergence of significant new themes during the analysis stage, something I eventually reflected would not be necessary.

The focus group sessions' target demographic was “lay publics”. However, I acknowledge that employing this term uncritically can pose conceptual challenges, particularly in shaping the roles and identities of publics called upon in the design of my focus groups (Felt and Fochler, 2010:219). One notable concern, for example, is the tendency to make explicit exclusions of certain social groups or moral positions from the conceptualisation of “the general public” (Wehling, 2012, de Saille, 2015). Additionally, the distinction between ‘lay’ publics and ‘expert’ publics, as well as strategies for engaging and mobilising participants ‘layness’, emerged as crucial considerations (e.g. see: Stilgoe et al., 2006, Welsh and Wynne, 2013, Grundmann,

2017). In the context of this project, therefore, I adopted the term ‘lay publics’ to denote any individual who lacks professional involvement in any aspect of animal research, its regulation, or its ethical dimensions. Unlike other qualitative public opinion research, I chose not to exclude individuals with pre-existing views or opinions on animal research (Lezaun and Soneryd, 2007), or segment the focus groups by age, gender, occupation, or interest (Macnaghten, 2001). The decision to use non-homogeneous focus groups was made to encourage a broader range of perspectives, fostering richer discussions and more dynamic interactions. By bringing together participants from diverse backgrounds, the groups were expected to better reflect the complexity of real-world experiences, promoting cross-demographic dialogue that could uncover unexpected insights. These decisions aimed to foster inclusivity and avoid predetermined notions regarding whose perspectives should be deemed valid within the realm of “the general public”.

3.2.1. Recruitment: Using “Prolific”

Recruitment is widely considered one of the biggest hurdles of empirical research (McCormack et al., 2013, Close et al., 2013, Chandler et al., 2019). Social media platforms, including Facebook, Twitter and ‘X’ have emerged as valuable tools in recent years, enabling access to traditionally ‘hard to reach’ samples (Bonevski et al., 2014, Arigo et al., 2018, Benedict et al., 2019). However, effectively capturing attention, evoking interest, establishing researcher credibility, and conveying the value of participation within the confines of concise social media posts can prove challenging. Participants are more likely to engage when they perceive a direct link between their individual experiences and the advancement of knowledge, often citing altruistic motivations such as aiding others in similar situations (Castillo et al., 2015). Nevertheless, recruiting for studies seeking broad and nonspecific samples, as in this project, can be much more complicated. Even with the help of social media platforms, recruitment can remain low in such cases, as noted by Longstaff and Burgess (2010). This creates the risk that the research might not resonate with a broad audience, leaving potential participants uncertain about the relevance of their contribution, especially compared to studies using purposive sampling that target specific

characteristics or experiences. Given these challenges, I decided that employing a recruitment agency might be necessary to reach the diverse audience needed for the development of an empirical PEwE. Many researchers seeking input from a broad range of 'lay publics' have found such agencies to be highly beneficial (see: Dunkerley and Glasner, 1998, Lenaghan, 1999, Huston, 2004, Kashefi and Mort, 2004, Rogers et al., 2009, Longstaff and Burgess, 2010, Elwood and Longley, 2010, Street et al., 2014).

The online recruitment agency used was 'Prolific Academic' (see: https://www.prolific.com/). Initially a platform focused on survey data collection, Prolific has expanded its services to support qualitative research approaches, including facilitating online focus groups (Palen and Schitter, 2018). According to Palen and Schitter (2018), one primary advantage of this platform is its motivation to increase transparency in academic research. They aim to extend this transparency to both the researcher by providing clear insights into the population sample and to participants by delineating the process and rewards. Prolific does this by ensuring fixed pre-prescribed units of time are monitored by the platform and clear guidelines regarding data handling, including restrictions on the types of questions researchers can ask. Additionally, participants are guaranteed fixed payment rates ranging from £5 to £10 per hour. Prolific claims this is a benefit to potential participants who can find 'silly points or prize draws' off-putting, vague or elusive (Prolific, 2022).

Participants sign up for the service, which has over 150,000 users, and have the option to indicate their willingness to engage in video or group interviews. Relevant study information is made available to potential participants, who then undergo a consent process using Microsoft Forms, where they can also indicate their availability through a scheduling poll. To maintain anonymity, Prolific assigns participants a unique 'participant ID' instead of using their names, and all communication between participants and researchers occurs through an internal anonymous messaging system rather than email. Participants who express their availability can be sent an online meeting invite through the Prolific messenger system, with instructions on joining anonymously. A key challenge experienced here was navigating the University

of Nottingham's Ethics regulations and processes and GDPR requirements alongside Prolific Guidelines. At times, I found these to conflict and aligning the two data management procedures was an intricate process. For example, while the University's approved conferencing tools were 'Microsoft Teams' or 'Skype for Business', Prolific's policy prohibits the collection of any identifying information. Both MS Teams and Skype for Business typically tend to be linked to individuals' work accounts given their typical uses, meaning that joining group sessions posed a higher risk of disclosing individuals' full names or work email addresses. The only way around this was to provide participants with complicated instructions on how to join the session from an 'incognito' or 'private' browser, adding to the technical skills required of the participants and, potentially, the comfortability of participants. Further issues experienced in the focus groups in practice (associated with the novelty of using the platform for focus groups) are explored in Section 8.4.4 (the Implications chapter).

Participants were compensated £10 per hour for this research project, totalling £20 for the two-hour session. The cost of reimbursements was funded by the ESRC's research training support grant, provided as part of my ESRC DTP Studentship. While Prolific offers the option to create a 'representative sample' for an additional fee (typically £250+), this option was not chosen, as this was not deemed necessary to meet this project's more exploratory goals. Since the purpose was to generate in-depth insights rather than generalisable results, random allocation was expected to still provide a wide variety of perspectives, striking a cost-effective balance between diversity and operational efficiency. Equally, Prolific ensures a roughly equal gender balance among participants (for no extra cost), which I selected. Basic demographic information provided by Prolific includes age, gender, first language, current country of residence (which was limited to the UK in this project), nationality, country of birth, student status and employment status, as detailed in the following figures:

Table 1. Gender of Focus Group Participants

Gender	Sample size
Male	15
Female	13

Table 2. Age of Focus Group Participants

Age range	Sample size
61+	3
51-60	3
41-50	6
31-40	13
< 30	3

Table 3. Nationality of Focus Group Participants

Nationality	Sample size
English	22
Russian	1
Nigerian	1
Italian	1
Indian	1
Chinese	1
American	1

3.2.2. Designing the focus group schedule

As highlighted in the literature review section addressing methodological challenges to PEwE (Section 2.3.2.), it was clear from the outset that crafting the focus groups and framing the discussion topic would pose significant challenges in the research

design. Acknowledging the likely low awareness and comprehension of formal regulatory ethical review processes within scientific institutions, and considering the power hierarchies of lay and expert knowledge, careful deliberation around how to shape the discussion around animal research and institutional ethics was indispensable (Felt et al., 2009, Moore, 2010b). As highlighted in relevant literature, it was important to navigate away from “deficit model” style questioning and to avoid imposing pre-conceived categorisations of animal research publics on participants (Felt et al., 2009, Felt and Fochler, 2010). Equally, it was important to prioritise creating a space of trust that welcomed diverse perspectives if this thesis was to demonstrate the value of the field of PEwE effectively (Felt et al., 2009, Moore, 2010b, Crudgington et al., 2024).

In organising focus groups, I aimed to encourage lively discussion around the topic as rooted in participants' varied social and cultural contexts. As Burgess (2004) notes, when using ethics as a starting point, researchers must ‘carefully and respectfully’ design their method ‘to generate sufficiently diverse and rich encounters of moral experiences’ (2004:5). This sentiment was also expressed by Felt et al. (2009) and Crudgington et al. (2024), who stressed the importance of creating a space of trust, where participants feel free to speak to their expertise as members of “the public”, with interests in ‘the kind of society they wished to live in and the role of [science] within it’ (also see: Burgess, 2004:8).

These considerations significantly influenced the development of the focus group schedule (refer to Appendix C), leading to the creation of a total of seven drafts as I continuously sought to refine the questions to get the tone ‘right’. I tried the questions out on friends and colleagues to observe the kinds of responses they garnered, and abandoned those I felt had missed the mark. For instance, questions like ‘*To what extent do you think the views of the public are taken into account either in the creation of these regulations, or in the day-to-day regulation of animal research?*’ or ‘*Have you ever thought much about how animal research is controlled, or managed?*’ Such questions, in hindsight, *were* reminiscent of the deficit model of engaging publics in science and risked implying judgment where participants lacked answers.

Subsequently, I redesigned the questions to remain as ‘open’ as possible, allowing participants to shape the discussion themselves and identify their own gaps in understanding rather than feeling pressured to respond to projected ones.

This iterative process resulted in dividing the focus groups into four main sections, each approximately half an hour long, with a brief 10-minute break in the middle. I prepared 3-4 prompt questions for each section to guide discussion when needed but prioritised the development of organic conversation among participants. The sections were structured around the three key themes identified through the document analysis: ‘publics’, ‘ethics’, and ‘the process/purpose of the AWERB’. While these themes bounded the scope of each discussion section, the closing section was left open for participants to lead the discussion more overtly. The sections were not intended to be ridged in topic matter but served as grounding subjects that each introduced a different dimension. These are detailed in the following four sections:

Section one: Icebreaker and an introduction to animal research - object elicitation method

Many researchers who have used focus groups emphasise the importance of an ‘ice breaker’, or an informal and creative activity-oriented question that prepares participants for the session (Colucci, 2007). This was particularly important in this case for three reasons:

- Participants would not know each other and may have felt nervous sharing views around a historically contentious topic (Colucci, 2007, Peterson, 2022);
- Participants take longer to ‘warm up’ and feel comfortable in online settings (Reisner et al., 2018); and
- Because regulation and governance can be considered a fairly ‘dry’ and abstract concept, members may have struggled to understand which parts of their everyday social experiences are ‘relevant’ to the focus group discussion and may initially have been hesitant to share (Macnaghten, 2021).

Consequently, I developed the idea of inviting participants to bring an object they believed had undergone animal testing from their homes, an activity I deemed an

informal and productive way to initiate the discussion. Each participant was then asked to introduce themselves using a chosen pseudonym or initial and to present their selected object. I then encouraged interaction among participants, prompting them to share their thoughts on the selection of objects brought by others and asking them to pose questions to one another.

The object elicitation activity served a dual purpose. Firstly, it acted as an icebreaker, allowing participants to introduce themselves, get familiar with the Teams platform, and build confidence sharing in this setting. For instance, Peterson (2022:28) discussed how their use of objects as prompts fostered a ‘playful’ atmosphere, encouraging the sharing of personal stories and experiences that may have otherwise not been considered connected. Secondly, the activity aimed to facilitate collective framing of the animal research topic through participant interaction, reducing my role as moderator in defining the issue. The approach was designed to encourage participants to reflect on how science and technology may infiltrate their lives, homes, and routines (Willig, 2017:212). This approach has previously proved fruitful in the empirical study of PUS (Marres and Lezaun, 2011, Marres, 2011). Therefore, I hoped this would prompt inquiry into the ‘accepted’, ‘ignored’ and ‘depoliticised’ aspects of everyday life (Askins and Pain, 2011, Dumit, 2014, Mannay, 2020). By delving into the stories, accounts, or connections surrounding the objects, this activity sought to foster conversation about participants’ multifaceted relations with animal research in their own terms and their own words. There was, of course, a risk that participants might have felt defensive about the immediate personalisation of the discussion, perceiving the line of questioning as judgemental regarding their own consumption of animal research outputs. However, this did not appear to be the case in practice, as participants responded well to the activity, which may have been a result of my immediate priority of creating a space of trust (as described at the outset of this section). The objects participants brought are detailed in the table/figure below, with Table 4 detailing the objects themselves and Figure 6 the categories to which they belong:

Table 4. List of objects brought by participants in object elicitation task

Shampoo	Leather belt
Washing up liquid	Concerta (Prescription ADHD medication)
Crayons	Morphine (Prescription medication)
Paracetamol	Hay fever spray (Prescription medication)
Shampoo	Dog treats
Metformin (Prescription diabetes medication)	Toothpaste
Lipstick	Laundry tablets
Essential oil	Deodorant
Dishwasher rinse aid	Hair gel
Shower gel	Facial scrub
Mascara	Lipstick
Hand sanitiser	Essential oil
Omeprazole (Prescription stomach medication)	Ibuprofen
Mascara	Anti-histamine cream

Table 5: Categorisation of objects brought by participants in object elicitation task

Object category	**Sample size**
Cosmetics	11
Household items (i.e. cleaning product)	6
Medication	8
Other	3

This information is provided here, rather than in the formal empirical chapter, as the objects themselves were not subject to analysis; instead, it was the discussions and reflections they provoked that were of interest. Therefore, they functioned primarily as prompts and not standalone data. However, it is worth considering that participants' tendency to bring household or cosmetic products might have inadvertently steered

the discussion towards a narrow focus on applied research – precisely, the production of physically purchasable products. This emphasis on practical applications rather than basic or applied research could have potentially limited the breadth of conversation. In realising this, I chose to broaden discussions by encouraging participants to consider other examples, such as a scientific textbook or medical advice once they had had a good opportunity to discuss their own objects.

Section two: Defining ethical science

In the second section, participants were then prompted to explore the topic through an explicitly ethical lens. In doing so, I gave particular attention to how 'ethics' would be framed for discussion. I decided to provide as short a definition as possible, again requiring participants to take the lead, and making the following statement to emphasise that there were no 'right' or 'wrong' answers here:

> *"Quite often, stakeholders who are involved in the animal research issue talk about 'ethics' or 'ethical science'; I want to take a minute to unpack this a little with you. These are ongoing debates in science and academia, so I should stress that there is no right answer to this."*

Following this, I initiated the discussion by asking participants to reflect on what 'ethical' animal research might look like. This approach aimed to depersonalise the inquiry, steering away from soliciting individual ethical stances or opinions on the use of animals in research. Instead, participants were encouraged to explore the concept of ethics through negotiating with one another. Subsequent follow-up questions were posed in response to their answers, aiming to maintain dynamic discussions without necessarily arriving at a binary conclusion. This was followed by a 10-minute scheduled comfort break for participants.

Section three: Discussion of the AWERB

Section three of the focus groups directly addressed the AWERB. Knowing from the outset, as again indicated from the literature review, that this would be most challenging to navigate, I strategically placed this section after the previous two. By

this point, participants had already engaged in conversations about (a) animal research, (b) ethics in science, and how this may materialise in regulation. I expected that participants may draw upon existing categories, framings and sentiments as a starting point through which to explore the subject of the AWERB. Still, within this section, I was most cautious about falling into the pitfalls of simply interrogating participants on their existing knowledge or understanding of regulatory processes. As such, I aimed to prompt reflection on the premise of the AWERB by providing a definition as a prompt. The below definition was crafted by myself, aiming to mimic the wording used in the Home Office Guidance (2014) though removing any reference to other regulatory concepts such as the 3Rs or HBA:

> *"AWERBs are committees that are required by law in all establishments (such as universities or private companies) that use, breed or supply research animals. The AWERB reviews each proposed research project that uses animals and advises whether the establishment should support the project. Its role includes considering whether the researchers have effectively searched for alternative methods that avoid the use of animals and whether they have done all they can to reduce suffering of the animal and improve animal welfare."*

After presenting the definition in the Teams 'chat' (instant messaging function) and allowing participants time to reflect on it, I invited their initial responses. Emphasising the value of diverse viewpoints, I ensured each participant had the opportunity to reflect, encouraging both positive and negative reflections. I then asked who participants thought should sit on such committees, how they envisioned the ethical review process in practice, and whether they would consider participating as lay members themselves. Concluding this focus group segment, I encouraged participants to consider what questions they would pose to an AWERB given a chance. This approach allowed them to identify their own knowledge gaps or confusions and personalise the AWERB as a group of individuals they could converse with.

Section Four: Rounding up

Finally, I closed with a series of concluding questions, intending to keep this closing section as open as possible and not tied to any particular theme (such as ethics or AWERBs). Participants were asked to reflect on the session as a whole, if anything had surprised them, or if there was anything they felt had not been covered. This allowed participants to bring up any overlooked points, reflect on their feelings and emotions, and share their experiences of participating, particularly in discussions about institutional ethics, which most participants reflected was a challenging and unusual task. This segment was not about reaching a definitive conclusion or identifying a final position from participants on the topic of AWERBs; instead, it served as a platform for further diversifying discourse. Following the approach advocated by Schicktanz et al. (2012), the aim was to centre participants' plethora of positions on one topic rather than pigeonhole them into isolated categories of "opinions" or "values."

Overall, the effort and time invested in refining this schedule proved worthwhile, as participants actively engaged in discussions about institutional ethical review broadly and dynamically, despite reflecting that they had found this challenging at times. Upon reflection, and as will be explored in the subsequent focus groups chapters and implications chapter (Chapters 5, 6 and 7 and Section 8.4.3), the third section on the AWERB, was by far the most challenging for participants. Still, the object elicitation exercise was particularly effective in initiating lively discussions and allowing participants to centre their own lives and relationships in their discussions around animal research. Participants could be seen engaging in collective thinking, as the activity fostered a 'joint present-moment processing of its potential meanings' (Willig, 2017:217), rather than relying on rehearsed preconceptions about contentious topics like animal research. Yet, I also felt that it was equally as pertinent to retain the integrity of these conversations in the analysis process, keeping my commitment to *Imaginaries of Ethics*, a process detailed in the following section.

3.3. Operationalising imaginaries

The conceptual framework of imaginaries readily lends itself to the exploration of rich, qualitative empirical analysis, where participants' accounts of their lived experiences

can be read for the implicit assumptions and cultural narratives they infer. However, as noted in Section 3.1., this framework is less conducive to the comparatively 'dry' analysis of documents. In the following section, I elaborate on how I operationalised the conceptual framework of ‘imaginaries of ethics’ to devise a comprehensive analytical framework and approach, adaptable for use with both data types despite their epistemological disparities. This, in practice, involved the development of an intermediary step of storyline identification (see below section 3.3.1.). I further detail how I framed both ‘ethics’ and ‘animal research’ in the focus group sessions to elicit discussions through which imaginaries could most effectively be interpreted (section 3.3.7.). I also clarify how I ‘handled’ these two very different types of empirical data and, ultimately, how I eventually brought them together to consider the overall implications of the research.

3.3.1. Using “Imaginaries” as a conceptual tool: Employing the use of “Storylines”

Interpreting imaginaries from documents is challenging due to the more rigid nature of their production. Jasanoff stipulates that policy documents *can* be ‘mined for insights into the framing of desirable futures as well as for specific verbal tropes and analogies that help identify elements of the imaginary’ (Jasanoff and Kim, 2015:27). Many examples of the empirical investigation of imaginaries appear to indicate they are underlying and detectible or ‘mined’ in/from the text or data in this way (Smallman, 2019, Bain et al., 2020, Hudson, 2020). However, I initially found that it can be difficult to look beyond the very conventionalised and formalised language used in line with the policy document genre of text. Considering this, I felt that an additional phase of the analysis process would allow potential imaginaries to become more perceptible, allowing readers of the analysis to follow my interpretative process more closely (even if they would themselves interpret them in different ways). On these grounds, I developed the additional ‘step’ of employing a method of ‘storyline’ identification within, and between, the document sample, an approach inspired by its use in the work of Maarten Hajer (2005, 2006). While this was explicitly employed to assist within the

document analysis phase, its use also became an instructive part of the focus group analysis, demonstrating its adaptable application to various methods.

Hajer first employed the identification of ‘storylines’ in the construction of his Discourse Coalition Framework for studying social movements and political institutions on the subject of acid rain (2005, 2006). The approach was then subsequently transferred to the topic of animal research by McLeod and Hobson-West (2016) when looking into the discourse around ‘transparency’ in documents produced by animal protection groups, animal research communities and governmental bodies. ‘Discourse coalitions’ are the key focus of Hajer’s analysis and represent groups of actors that adopt the same ‘storyline’ within a policy context. Accordingly, the label of a ‘storyline’ refers to the central idea underpinning complex narratives/debates. Some of Hajer’s examples are: “pollution is a matter of inefficiency” or “nature has a balance that should be respected” (Hajer, 2005:45-46). I have not employed ‘storylines’ in this thesis in the typical Communication Studies tradition or as in the use of Narratives (i.e. requiring a beginning, middle, and end) (Esin et al., 2014). Rather, they are used in the sense that they are co-constructed discursive resources that imply unity and common understanding among groups of people (Riessman, 2005), which Arts et al. (2012:912) reflect ‘give permanence to a debate’. However, unlike other uses of the discourse coalition framework, the key output of the analysis is *not* primarily to identify ‘discourse coalitions’ in a policy community (although these inevitably materialised through the analysis process), but rather, to then use these in the construction of imaginaries.

I found this method of storyline identification to be most productive using Braun and Clarke’s (2008) six-stage thematic analysis model for developing compelling themes. This approach allowed the documents and focus group transcripts to be (re-)read and interpreted in several ways but encouraged doing so thoughtfully and consciously, moving beyond what is explicit in the first reading (Byrne, 2022). It proved especially useful because, instead of categorising the codes into topical ‘themes’, my analysis process aimed to uncover the discursive resources and linguistic devices used to discuss the perceived function/purpose of ‘ethical review’ within the AWERB, even where such indications were often quite subtle.

Although largely reflective, the resulting set of storylines provided a framework through which to build, interpret and co-construct the comparatively more projective *Imaginaries of Ethics* underpinning ethical review as propounded in policy/guidance documents and focus groups. However, it is also worth maintaining that this process did not seek to create a very rigid analytical framework or to overly 'proceduralise' the empirical investigation of imaginaries. This would undermine the constructivist research paradigm that underpins the concept and thus fail to capture the fluidity and complexity of social reality (on this matter, sometimes termed 'methodolatry' see: Chamberlain (2000)). Instead, it seeks to make the analytical process more transparent and illustratable until the point where 'reflexivity, theoretical engagement and creative scholarship' should take over in theory development (Braun and Clarke, 2019:589).

3.3.2. From 'storylines' to imaginaries

'Storylines' and 'imaginaries' are conceptually similar and can both be employed separately in the sociological study of collective beliefs, visions, and understandings of specific scientific and technological developments. Both concepts emerge at moments of co-production in modern societies (where these visions emerge, are contested, and stabilised) (Jasanoff, 2015). The most discernible difference between the two, at least for this research project, is that imaginaries are inherently more anticipatory and future-oriented than the more reflective storylines. If imaginaries are projected dreamscapes about what ethical review can/should achieve ('how life ought, or ought not, to be lived…', Jasanoff (2015:4)), storylines, on the other hand, are more reflective *retellings* of a social, cultural or political phenomenon. Therefore, in this research process, I identified storylines and then interpretively developed Imaginaries of Ethics by drawing on these storylines, but also, more fundamentally, by drawing on what was *not* said (or what was implied) in terms of underlying ideologies, moral beliefs, accounts about social life and the environment, or social subjectivities.

Moving from the coding process to identifying storylines and then developing imaginaries involved a structured yet reflexive approach. Initially, I employed Braun

and Clarke's six-stage thematic analysis model to code the data in NVivo intuitively and iteratively, identifying codes in documents and focus groups that may have pertained to the three core themes: publics' role in ethical review, the process of ethics, and the production of ethical science. Some codes were straightforward and were clear from the initial read, while others took a little more reflexivity and creativity in making connections, meaning I had to revisit the data a number of times (per Braun and Clarke's advised approach). To bridge these codes into their broader themes, I began thinking of them in terms of storylines, identifying or developing titles, labels or statements that underlay the narratives I felt were emerging through codes I had identified. From there, I began a more in-depth analysis process by interpreting Imaginaries of Ethics – the collective visions and expectations of ethical review that I felt the storylines collectively tacitly implied. This step involved deeper theoretical engagement, where I analysed how these storylines reflected broader societal beliefs about the role of ethical review and how it (and animal research and public engagement more broadly) should evolve in the future. Key in this analysis stage was the exploration of 'ethics-in-the-making' and the unspoken and underlying visions of ethics constructed here. This is key as I have argued throughout this thesis that the way that 'ethics' becomes situated holds significant implications for the committees' later decisions, as well as how wider society supposes the legitimacy of such decisions (Ideland, 2009, Varga, 2013, Tjärnström et al., 2018).

3.3.3. A note on the epistemology of imaginaries

The analysis of qualitative research inevitably involves drawing conclusions around complex social phenomena, which will always involve some level of oversimplification. However, it is important to remember that imaginaries are not homogenous entities. They integrate a myriad of different values and beliefs. As such, storylines *can* themselves be contradictory to one another. This is an integral part of socio-technical imaginaries, which do not claim to operate as truth claims but rather as a heuristic device (Graf and Sonnberger, 2020). The document analysis phase, in particular, sought to explore the *Imaginaries of Ethics* both jointly *and* separately constructed by their authoring organisations. Such an approach draws from what Stein et al. (2014)

and Davies et al. (2020) term a ‘nexus approach’, and its primary aim is to make sense of the complex interconnectedness of actors (‘actor networks’) and ideas and interests (‘issue networks’). Therefore, each organisation’s guidance analysed has its own goals and values and is not one homogenous governing body working to the same end. Additionally, not all of the stakeholders existing in the policy community necessarily hold equal weight or influence and, therefore, the complex and dynamic relationship *between* these stakeholders needed to be acknowledged throughout the analysis process (Lunders, 2007, Atkinson and Coffey, 2011, O'Leary, 2014). It is potentially as equally conceptually misguided to talk of *Imaginaries of Ethics* of a ‘general’ governance, as it is to talk of a general ‘public’ (the rebuttal of the latter has been a central tenet in this project). The documents are therefore considered a *process* of meaning-making, rather than offering fixed, static or easily ‘extractable’ meanings, which is reflected in the analysis approach.

Equally, the analysis of the focus groups through the lens of imaginaries also requires that the research explores not only what participants say (‘content’) (Ryan et al., 2014) but also how participants say it and in response to what (‘group interaction’) (Farnsworth and Boon, 2010). The perspectives interpreted are not ‘stable personal constructs’ (‘opinions’), but are understood to be ‘something generated, maintained, and changed through social interaction’ (Ryan et al., 2014).

3.3.4. The use of qualitative assisted data analysis software: ‘NVivo’

In terms of conducting the practical analysis of both the documents and the focus group transcripts (further details on transcription are provided in section 3.3.7), I input these into NVIVO, a computer-assisted qualitative data analysis program. NVIVO allowed for the assignment of digital codes ("nodes"), enabling the instant retrieval of text segments across all documents/focus group transcripts to which a particular code was assigned. It is worth noting, however, that NVIVO was primarily used as a tool for data storage and management. While some researchers use NVIVO for its more positivistic analysis functions to identify patterns in coded data, in this study, the analysis process still entailed manually reading each document or transcript in its

entirety, rather than relying solely on NVIVO's analytical functions to construct themes. This approach was deemed essential to prevent 'disengagement' from the data, a common pitfall highlighted by Wright-Bevans (2017) in using such programmes. Furthermore, manual reading was considered essential for operationalising the nuanced and complex framework of imaginaries of ethics.

3.3.5. Bringing together the two sets of empirical 'data'

Throughout this thesis, the conceptual lens of *Imaginaries of Ethics* operates to paint a picture of what visions of a desirable future permeate visualisations of an 'ideal' ethical review process. Through the analysis of focus group transcripts and policy/guidance documents, I explored how such ideas manifest in different ways and contexts. The documents exhibited a very measured, rigid use of language, crafted collaboratively by individuals working in vast institutions and often subjected to copy editing to maintain their coherence with the organisational 'position'. This contrasts sharply with the spontaneous, loosely structured dialogue of focus group sessions, where participants express their individual perspectives in the moment. In both cases, my analysis aimed to uncover the socially shared or tacit knowledges they embodied (Ryan et al., 2014:331). Yet still, the two methods hold profound epistemological differences, which are further explored in the following two sections. As such, I do not claim to have directly contrasted the 'imaginaries' constructed in the analysis of each method in this thesis. Instead, I explore them as platforms to think through some of the broader issues raised around animal research regulatory practices in their exploration.

3.3.6. Handling and analysing document analysis 'data'

Document analysis is a research approach concerned with *text* or *talk* as social phenomena. It assumes that by analysing language data, social scientists can learn more about the aspects of society (and social life) in which the data source was produced (Taylor, 2013). The meta-theoretical underpinnings of the method vary extensively depending on the approach, discipline or tradition through which it is employed (van Dijk, 2020). My approach to this research assumes that reality is

socially constructed, and knowledge and meaning are (re)produced through linguistic forms (Taylor, 2013, Wilson, 2015). As such, it takes an overtly political approach to discourse analysis compared to other more formal linguistic and descriptive approaches (Hodges et al., 2008, Gee, 2014, van Dijk, 2020). Therefore, in its coding (of 'nodes' using Nvivo), it draws extensively from Machin and Mayr (2012), who outline the following elements of the text as holding significant meaning, including (1) the kind of vocabulary used and how proximate words may impact the interpretation of the reader or the intention of the writer; (2) what are the choices of verbs, i.e. are they positive/negative, do they indicate certainty or potentiality? and (3) choices of nouns, particularly naming strategies including nominalisation, functionalisation, anonymisation and suppression (Fairclough (2003), van Leeuwen (2008)).

In the planning of this thesis, a pilot document analysis was conducted (as part of the ESRC DTP '1+3 award'). Though not comprehensive, this initial analysis was crucial in shaping the direction of the research. For example, while I initially chose to analyse each stakeholder 'stream' individually, i.e. by 'research funders' or 'professional societies', I later changed my approach. I had been able to reflect that my considerations in this pilot tended to prioritise analyses within individual stakeholder streams, over analysis between and throughout the streams. I, therefore, decided that a more unified analysis would facilitate a more constructivist and holistic analysis. Yet, still, this risks obscuring the key ideological differences between the documents and their authors. One potential issue of this approach is that in publicising/presenting the results, stakeholders or authoring institutions may not recognise the 'imaginary' or feel it doesn't reflect their institutions' individual ethos. Therefore, it is important to make clear that my analysis is an interpretation of a *joint* reading of the documents; it does not suggest that all institutions operating in the regulatory system advising the AWERB hold monolithic and unchangeable views about these aspects of ethical review. Accordingly, there are many examples of contrasting or dissenting storylines presented in the documents, but these aspects of 'intertextuality', (how the documents reference and respond to one another) reveal something about the *Imaginaries of Ethics* at play in a policy arena permeated by a wide variety of stakeholders.

3.3.7. Handling and analysing focus group 'data'

Similarly, my focus group analysis approach necessitated that I consider 'who is speaking as what' (Hydén and Bülow, 2003 :320). Wilkinson (1998) emphasises the importance of not coding data as if your focus group was one singular/homogenous entity but analysing it as situated talk, appreciating the complexity of social representations, opinions, arguments and positions that occur. I, therefore, took account of the fact that opinions can, and will, be formed and broken in the ebb and flow of each conversation and that the capricious nature of the discussion undoubtedly influenced each focus group. One way of practically enacting this was to ensure transcript extracts were coded in the context of their statements (rather than coding only a small section at a time). Yet, the use of NVivo, at times, greatly hindered the ability to do this. NVivo's coding function allows researchers to 'pull up' all extracts of text relating to that 'node'. At times in this analysis, however, it felt as though this action stripped these extracts of their context, both in terms of what was immediately said before or after but also in terms of what participants may have previously said in the focus group to illuminate or contradict themselves and thus losing a valuable analytical resource. With such a small sample (28) and with only one researcher designing, moderating, transcribing and analysing the focus group sessions, this was largely manageable, as I was able to become heavily absorbed in the focus group sessions and could make connections. However, this would not have been possible if a focus group moderator was used, a secondary transcription service, or if the sample was much larger.

Additionally, the theoretical framework of imaginaries operates on the basis that group interactions (such as that in a focus group) are dynamic social processes involving collective sensemaking. Therefore, when coding the focus group transcripts, it was important to not solely focus on group consensus (or 'group think') but to code the interactions that emerged to *arrive* at such group consensus. It is *here* that I expected the richness of their social worlds to emerge. This, as in the document analysis, means exploring moments of negotiation or disagreement as well as moments of consensus.

3.4. Ethical considerations

The focus group element of this project required favourable ethical approval from the School of Sociology and Social Policy at the University of Nottingham (REIC approval reference number: 2122-PGR-19). Accordingly, participation was entirely voluntary, and fully informed consent (obtained through MS Forms) was required (Participant information sheet in Appendix D). However, as Bryman (2008) argues, such ethical codes cannot always instruct on how to deal with ethical 'grey areas' that may occur, which often call for a more situational response. Hoppe et al. (1995) argue that protecting those in the group who may have contrasting views requires the researcher to develop skills in setting the tone and managing the flow of discussion. This is particularly the case in this research context, as animal research is, historically, a highly contentious topic, and discussing it in large groups with others who do not necessarily share the same view can evoke conflict (see: Browne and McBride, 2015). Several social researchers have written about their experiences of dealing with sensitive topics in focus groups (e.g.: Farquhar, 1999, Jordan et al., 2007, Coe, 2013). To address these barriers, these scholars emphasised the importance of developing trust and of being clear when recruiting that participants will have complete control over whether and how they take part. Therefore, in conducting the focus groups, I took the time to emphasise that participants would be required to respect the views of other participants and that varying views would actively be encouraged. Particular care was also needed when dealing with data, writing, and reporting what participants had said on the topic.

I also decided that if I believed the conversation had turned hostile at any point, the line of questioning would be stopped, and, if necessary, the session would be brought to a close. One particular occurrence where such preparations were pertinent was when a participant became visibly upset, reflecting on a past personal medical decision they had made and had chosen to share with the group. Navigating this in a group setting presented an additional challenge, as this meant making a situational choice between allowing the participant the space to reflect and not dismiss their contributions but also not leaving them in a position where they felt uncomfortable or

later regretted sharing. The participant was allowed to finish telling their story, asked if they were happy to continue, and thanked for their contribution in this case. This served as an essential reminder that navigating ‘tricky’ situations can be particularly difficult in a focus group setting.

A second critical ethical predicament faced in practice concerned the payment for participation, which is integral to the working model of Prolific. The ethics committee in the School of Sociology and Social Policy at the University of Nottingham usually discourages the payment of money for research participation (instead preferring the use of vouchers) (UON, 2021). One key reason is because of the potential risk of coercion to take part that payment can often represent. Prolific recommends that participants receive between £7.50-10 per hour for qualitative data to sufficiently reimburse participants for their time without leading to undue financial coercion to take part (Prolific, 2018). I decided to pay participants £10 per hour (£20 for the full 2-hour session) as I deemed that a focus group was potentially more challenging for participants than a one-on-one interview (Sim and Waterfield, 2019). This price was still within Prolific’s recommended amount, though on the higher end, given Prolific’s advice that participants should be paid according to the ‘effort required by your study’ (Prolific, 2018). While many of the participants followed up by saying that they had enjoyed the focus group sessions, two participants (from different sessions) used the Prolific messaging system to contact me afterwards, apologising for how little they felt they had contributed, with one suggesting that I did not have to pay them all of the agreed amount. Of course, I reassured the participant and paid them for their time as agreed; though this is a possible insight into the effect that paying cash to research participants has on making the interaction feel transactional and where participants may feel they have to ‘show up and perform’. In hindsight, I am also now concerned that if a participant has already received their payment (which they must receive within 24 hours of the research), they may feel that they do not have the same freedom to withdraw their contributions at a later date, and would make this clearer in future research.

3.5. Chapter Conclusions

In conclusion, this chapter has detailed the methodologies employed in both phases of empirical data collection, encompassing document analysis and focus groups. It has described the sampling strategies for both, and the analysis method used in each case, underscoring my commitment to the conceptual framework of ‘imaginaries of ethics’. A pivotal aspect of this analytical framework is the intermediary stage of 'storyline' identification. Here, storylines are discerned from both sets of data, serving as reflections on social or cultural phenomena that are presented as matter of fact or ‘solved’. The analysis process involves interpreting these storylines into imaginaries and envisioning anticipatory or future-oriented depictions of an ideal ethical review process that they imply. In developing this practicable way to explore expectations of ethical review in various data sets in a manner that can be followed by those reading the analysis, this chapter aimed to generate valuable methodological insights that would be of benefit to scholars looking to undertake research into the field of PEwE. The following chapter exemplifies this methodological framework in action, through a detailed exposition of the document analysis process.

Chapter Four: An Exploration of the Policy Context Through the Imaginaries of its Policy and Guidance Documents

As noted in the previous methodology chapter (section 3.1.), the document analysis was not included in the research proposal for this project. However, in seeking to understand the regulatory and policy context, it became apparent there was a highly complex negotiation of stakeholder values and ideologies at play. While existing policy analyses offered structural analyses of the policy context (for example, see: Stein et al., 2014, Lyons, 2013, Fernandes et al., 2019), they offered only broad oversights. Given my commitment to producing rich qualitative data embedded within specific contexts, these structural analyses, though valuable as a starting point, did not create a suitable comparative framework to explore public imaginaries. This informed my decision to practice my use of imaginaries by analysing 15 key policy and guidance documents. All documents were produced by their organisations to guide professionals working under the ASPA in fulfilling its legislative objectives. These documents also extensively cover the role and function of the AWERB, with some seeking to establish 'best practice' beyond the explicit legislative scope of ASPA. This initial phase was designed to better conceptualise the relationship between 'publics', ethics and the AWERB as articulated within these documents by key stakeholders. As such, the analysis is guided by questions surrounding the idealised role and scope of ethical review, the allocation of responsibility for ethical considerations, the legitimacy of such allocations, and their implications for the broader social contract around animal research. Keeping these objectives in mind, the three 'themes' were developed through (and informed by) this document analysis. These themes are as follows:

- The democratisation of science - considering the intricate balance of timing, nature, and impact of public involvement (**'imagining publics'**).
- The application of ethical frameworks - highlighting practical tensions between adhering to ethical processes (the means) and achieving ethical outcomes (the ends) ('**imagining ethical review'**).

- The cultivation of ‘responsible science’ - emphasising the delicate balance between achieving scientific rigour and societal responsiveness (**‘imagining ethical science’**).

These themes serve as organising principles throughout this chapter. Each of the following three sections describes the ‘storylines’ discerned across the documents concerning these three themes and concludes with the *Imaginaries of Ethics* that I interpret to have underpinned, steered and sustained these storylines. Additionally, the potential consequences stemming from the existence of such imaginaries are thoroughly examined. First, I provide more detail on the documents and how they (and their authors) all relate to one another.

4.1. The policy context: as read through its guidance documents

This analysis treats the documents as socially constructed artefacts, each existing within their own context and holding distinct intentions and outcomes (Mason, 2002). By examining multiple guidance documents from various sources, it is possible to uncover connections and differences that may be overlooked when focusing solely on legislation such as ASPA (Brown, 2003). Understanding the relationships between the authoring organisations is, therefore, vital, as it provides insight into the connections and disconnections between documents (Atkinson and Coffey, 2011). This is essential for grasping how these connections facilitate or constrain certain actions through *Imaginaries of Ethics*, appreciating the distinct yet interconnected nature of policy streams in shaping the policy context. Therefore, I categorised each document into stakeholder groups or ‘streams’, namely the ‘Government sector’, ‘professional/learned societies’, ‘animal welfare charities’, ‘research sector’, and ‘funders’. Throughout the following analysis, I refer to these streams to contextualise the documents referenced. All publishing authors and their organisations are detailed in Appendix A & B, and a flow diagram illustrating their connections is available in

section 3.1.1. This section provides a concise overview of what was gathered from these documents and how they connect with one another.

The European Commission document stands out as the most influential in advising EU member states, including the UK at the time, on implementing Directive 2010/63, which catalysed the 2013 amendment of ASPA. Although the EU directive drew considerable inspiration from the UK's approach to animal research, the ASPA amendment did introduce the AWERB, albeit building upon existing systems of local ethical review. The ‘consolidated’ version of the ASPA document outlines these changes. Furthermore, ASRU, the Home Office unit responsible for implementing ASPA, issued guidance a year after its passing, completing the trio of documents in the government stream.

The UK animal research policy landscape involves a diverse range of stakeholders (Lyons, 2013, Fernandes et al., 2019), including professional societies such as the Laboratory Animal Science Association (representing researchers), the Laboratory Animal Veterinary Association (representing veterinarians), and the Institute of Animal Technology (representing animal care staff), as well as the RSPCA, the UK's national animal welfare charity. These entities form the 'professional/learned society stakeholders' and 'animal welfare charity' streams and have often collaborated together on publications. Notably, they have developed the "AWERB-UK" initiative, spearheaded by the RSPCA, aimed at uniting organisations involved in AWERB-related activities to encourage collaboration and offer training opportunities for members (Robinson and Kerton, 2021).

Another vital stakeholder stream comprises organisations within the research sector, including UAR, UKRIO, Norecopa, and the NC3Rs, all dedicated to setting research standards and advocating for best practices. Additionally, there is a 'funder' stream, represented by a document published by NC3Rs in collaboration with major scientific research funders, aimed at promoting best practices in funding applications. The presence of NC3Rs in both streams emphasises the fluidity of these categories and highlights how they can only serve as organising principles to contextualise document content rather than rigid classifications.

4.2. What is the imagined stake of ‘the public’ in the institutional ethical review of animal research?

A comprehensive reading of literature surrounding the ‘Public Understanding of Science’ (Section. 2.1.3.) in some senses indicates that the ‘democratisation of science’ is nascent in the European context. Accordingly, there is a more active pursuit of deliberative forms of public engagement on the horizon (Ziman, 1991, Irwin and Michael, 2003, Kearnes et al., 2006, Wynne, 2006a, Brown and Guston, 2009, Raman and Mohr, 2014). Such engagement is rationalised and almost compelled by laypeople’s position as citizens in a democratic society, who inadvertently fund (through taxes) and regulate (by holding policymakers politically accountable) research practices (Ormandy, 2012).

The perception that ‘publics’ hold a legitimate stake in the animal research debate has, ostensibly, been systemically validated through an industry-wide pledge toward improved ‘transparency’, driven by the 2014 launch of the Concordat for Openness (Section 1.1.). The Concordat welcomed engagement from a broad range of organisations in the sector. It represented a commitment toward actively maintaining the delicate relationship between broader society and the practice of animal research. Equally, academic scholars reference a ‘social contract’ that requires stable maintenance (Davies et al., 2016a). Others criticise a ‘culture of secrecy’ in the industry (Pound and Blaug, 2016), as well as an overreliance on reductive public opinion polling for determining the ‘acceptability’ of the practice (Hobson-West, 2010), both potentially risk the stability of such a contract. Yet, despite this recognition that ‘the public’ indeed has *some* stake in the practice of animal research, the precise nature of this ‘stake’ has received notably less political consideration. This is particularly troubling given the long, complex and troubled history of publics’ relationship with the practice of animal research (Germain et al., 2017).

The following section considers how the policy and guidance documents jointly *imagine* the stake (and therefore legitimate contribution of) ‘the lay public’ in the ethical review of animal research. Understanding this position is key to understanding what exactly ‘socially acceptable scientific practice’ looks like and the role that societal

values and concerns play in the idealised ethical future that UK animal research policy is in pursuit of.

4.2.1. Storyline A: 'Publics' as future patients

On the whole, reference to 'the public' was notably limited. This finding aligns with some previous policy analyses on stakeholder influence in animal research regulation, which suggests it is minimal (Ormandy, 2012, Lyons, 2013, Fernandes et al., 2019). However, when a reference *was* made it was executed in several highly specific ways. The first of these perceived 'storylines' came from reference to publics in their capacity as either (a) potential human research participants or (b) future patients receiving medical treatment. For example, the document produced in the government sector stream states that 'translational or applied research', meaning exploratory research *must:*

> *'be for the avoidance, prevention, diagnosis or treatment of debilitating or potentially life-threatening clinical conditions or their effects in humans or the development, manufacture or testing of the quality, effectiveness and safety of drugs for the same purposes'* (ASRU, 2014: 51).

This specific characterisation of publics as *humans* at the other end of the animal research pipeline, potentially receiving treatment, was frequent, particularly in the government stream. The following document, intended to advise on the application of a HBA reads:

> *'it has to be recognised that views differ between the various stakeholder groups that have an interest in the [Harm-benefit analysis] process. For example, developing drugs for better treatment of breast cancer may be considered more valuable by some people than the study of addiction to recreational drugs, although both would provide benefit to many individuals within society. Factors such as the seriousness of a human disease, number of patients affected, and hence overall impact on society, are all taken into account when determining the importance of a benefits.* (ASRU, 2015 :19).

This extract is a particularly interesting example, given that it references 'various stakeholder groups' to be 'taken into account' when undertaking HBA. Though, ultimately, it proceeds to reduce publics to their capacity as patients. This again seems to indicate that wider society does indeed hold a stake in such decisions but predominantly as beneficiaries of the *outputs* of animal research, as well as its efficiency in treating various examples of ill health and the benefits to wider society when doing so. Another common reference, in the same vein, was the reference to imagined human research participants, again 'down' the pipeline of animal research. For example, two examples of documents in the research sector streams are relevant, the first advising on funding decisions and the second on designing research:

> *'human clinical trials initiated based on insufficient or misleading animal research evidence increase research waste and negatively influence the risk-benefit balance for research participants'* (NC3Rs, 2020: 46).

> *'There is also widespread concern about the lack of reproducibility and translatability of laboratory animal research. This can, for example, contribute towards the failure of drugs when they enter human trials.'* (Norecopa, 2018 :135).

Given the undeniable significance of considering the safety of future research participants and ensuring research is beneficial to future patients, none of these statements are particularly controversial. However, this overwhelmingly constituted the primary reference to broader society (or 'humans'). This storyline gains further traction through the scarcity of reference to publics as stakeholder citizens, distinct from merely 'patients' or the notably less frequent instances where animals themselves are positioned to benefit from animal research. Interestingly, the animal welfare charity stream diverges from this narrative at certain junctures, more pointedly addressing 'the public' as legitimate stakeholders, emphasising the importance of:

> '*bringing a societal perspective to consideration of animal experiments'* [which are] *often funded by public money and carried out in the public's name'* (RSPCA, 2015: 11).

Similarly, the RSPCA (again, writing within the animal welfare charity stream) actively refutes the claim that human and animal lives can be directly weighed against each other in a HBA, emphasising the practical complexity of such a comparison:

> *'One of the problems is that there is debate about what exactly the "weighing" of harms and benefits should mean in practice. A particular difficulty is that the factors to be weighed are not directly comparable'* (RSPCA, 2015 :34)

Therefore, the RSPCA counters the otherwise dominant storyline shared by other stakeholders (what Hajer, (2005) calls a 'discourse coalition'). However, its containment within the animal welfare stream, which holds distinct interests in the protection of animals, arguably only further emphasises its absence in the broader policy sphere. Equally, it reaffirms the supposition behind the decision to undertake a document analysis in the first place, that stakeholders use these documents to subtly push certain agendas on the way that animals come to be used in scientific research.

4.2.2. Storyline B: 'Publics as an audience to science communication outputs

A second dominant storyline subscribed to throughout these documents was the existence of publics as consumers *of,* or an audience *to*, public communications outputs by relevant organisations. Instances of the deployment of this storyline frequently referenced the industries' drive towards increased transparency. This was not wholly unexpected considering the context in which many of these documents were produced, where the Concordat for Openness (initiated 2014) was high on the agenda (detailed in Section 1.1.). Examples of this storyline include reference to the need for government bodies to publish *'clear descriptions'* of decision-making processes, which can:

> *'explain to the public, and other stakeholders, how this process enables [us] to make reasoned, balanced decisions, with regard to advising whether or not a [project license application] should be granted.'* (ASRU, 2015: 8).

This subtle inference that greater transparency and information would equate to public trust was common in the documents and was again echoed in the research sector stream with regards to producing an 'ethical statement' when publishing research:

> *'The ethical statement provides editors, reviewers, and readers with assurance that studies have received this ethical oversight. This also promotes transparency and understanding about the use of animals in research and* ***fosters public trust'*** *(NC3Rs, 2020:40; emphasis added).*

This assumption of the value of increased transparency to publics was also prominent in the animal welfare stream, despite the observed counter storyline with regards to them as citizens as well as potential patients. In the below example, the provision of more information is posited to:

> *'contribute to the long-term trust and acceptance in scientific research from the general public'* because *'openness and transparency contribute to ensuring public trust and conditional acceptance of animal use… Accurate information is critical to informing opinion'* (LASA & RSPCA, 2015: 14).

In such examples, by positioning publics as an audience to public communication outputs surrounding animal research, they are depicted as spectators of the whole scientific endeavour. This itself is a critique made of science more generally when reflecting on 'deficit model' assumptions about public engagement (Section 2.1.4.). Yet, arguably, this effectively normalises the limited mention of publics with a voice in these documents concerned with the institutional ethical review process, which typically occurs much earlier than science-communication initiatives (which usually are produced *to inform* rather than consult). As such, transparency is envisioned to take place after the research rather than before or during. Similarly, transparency is conflated with increased 'public trust' in these examples. If consumers are considered an audience to reports and briefings, with the anticipated outcome being the fostering of 'public trust', 'publics' are portrayed as largely *obliging* and passive recipients.

4.2.3. Storyline C: 'Lay members' invigorate discussion

The final discernible storyline concerning the stake of publics in animal research ethical review revolves around including a 'lay member' in the AWERB. While lay members are not legally mandated in the AWERB, they are encouraged by the Home Office (2014) and have come to be recognised as 'best practice', though the introductory chapter has already raised some concerns regarding to what extent a lay member represents 'the public' (Section 1.4.). One of the analysed documents is an RSPCA 'resource book' designed to prepare new lay members for their role, emphasising their value in '*bringing a societal perspective to consideration of animal experiments*' (2015:8). However, it is notable that this portrayal of the lay member as a kind of 'spokesperson' for the wider public was not the prevailing storyline, again reaffirming these previous concerns. Instead, the documents more commonly depicted the role of a lay member as bringing a form of lay 'expertise' into the AWERB rather than a representative role. For example, in a document advising all members of the AWERB (rather than the lay member specifically), the appointment of a lay member is depicted as advantageous for the following reasons:

> *'lay members have proved very useful in AWERBS… they can ask the insightful questions that people directly involved with the science may not consider asking and can bring a fresh eye'* (RSPCA & LASA, 2015: 1).

This reference to bringing a 'fresh eye' was also echoed in the document explicitly directed at lay members (the aforementioned 'resource book'), where the same advantage of their appointment was their ability to:

> '*ask questions that people more deeply involved in the research might not identify or consider asking; viewing established practice and accepted norms with a "fresh eye"; and stimulating new or different ways of thinking about the ethical, animal welfare or scientific issues'… 'It is unrealistic to expect individual lay members to represent the full spectrum of public opinion, but lay participation is a contribution to openness and can help scientists see how members of the public might view their work.'* (RSPCA, 2015: 11).

This extract, once more, suggests that the lay member's role is to act as more of a 'devil's advocate' than it is to speak for diverse publics. Furthermore, not only documents produced in the animal welfare stream share this storyline. Similar inferences are made in the EU document, where lay members (here called 'independent members') are envisioned to:

> *"bring in a fresh perspective and contribute to openness and transparency and to challenge of the "status quo""* (EU, 2014: 9)

The role of the lay member is predominantly addressed in documents from learned societies and animal welfare streams, which are particularly strong advocates for considering the appointment of the member as 'best practice' (RSPCA & LASA, 2015). Notably, details of this committee position are conspicuously absent from documents within the UK government stream, likely due to the absence of a legal mandate for lay membership in ASPA. Although Home Office guidance on ASPA does emphasise that *'in order to help ensure the **integrity** of the process'* AWERBs are expected to:

> *'actively seek a wider membership, taking into account, in a transparent manner, the views of people who do not have responsibilities under ASPA as well as one or more persons who are independent of the establishment'* (ASRU, 2014: 88; emphasis added).

This suggestion that the 'independent' member can ensure the integrity of ethical review implies that the relationship between the lay member and the wider 'publics' need not be reciprocal. Integrity is presumed by their very existence, thus reaffirming my interpretation that publics do not have a clear presence in the institutional ethical review process.

4.2.4. Key imaginary of Ethics: Publics as consumers of the outputs of animal research

Storylines A and B infer that 'the public' is primarily characterised as consumers of the outputs of animal research (biological, medicinal, therapeutic) but also as audiences for the public communications generated by organisations involved in the practice (for

example, posts on websites, non-technical summaries etc.). Consequently, publics are imagined as future patients, with animal research serving as a form of insurance against future illness. This imaginary also allows for a certain degree of expert interventionism in the ethical review conducted in the AWERB, aiming to safeguard the future health of society. The perceptible appropriate role of lay members as invigorators and not representors reflects this (Storyline C). While lay members are not tasked with advocating for diverse publics, they are responsible for ensuring institutional integrity and identifying potential instances of misconduct. Their role also becomes advantageous in mitigating the risk of reputational damage and the possible erosion of public trust.

The implication of these three storylines is significant: the AWERB, as per its guiding documents, bears no explicit or direct responsibility to seek or incorporate the views of publics as stakeholder citizens in animal research. Consequently, an ethical review can be deemed adequate when done **on behalf** of such publics, provided that it is communicated transparently and openly to them. Being open (but cautiously so) is still presented as the anticipated means to attain public trust. Priority is therefore placed on cultivating 'public trust' to continue as things are, rather than actively engaging with diverse perspectives and pursuing social legitimacy.

4.2.5. Implications: passive consumers or engaged citizens?

If stakeholders do not perceive the AWERB as accountable or responsive to publics beyond ensuring transparency, integrity, and acknowledgement of the conditionality of the social contract, this raises two significant considerations. Firstly, it prioritises publics' role in animal research as consumers of its outputs rather than as active and engaged citizens with social and cultural stakes in how animal research is conducted. Secondly, it eliminates any ambivalence regarding the perspective of publics who may consume the outputs of animal research but still have serious concerns about its use and regulation (see: McGlacken, 2021b, McGlacken and Hobson- West, 2022). This distinction between consumer and citizen holds substantial implications for how open

to societal influence this process should legitimately be, as well as the extent to which decisions can be made on behalf of such publics.

Dageling and Johnson (2015:2) highlight that in discussions about animal agriculture systems in democratic states, ‘citizens’ typically leverage their ‘legitimised’ interests by ‘agitating for direct action to change how animals are used through political processes’. Conversely, ‘consumers’ are more inclined to ‘influence standards through their activities in the marketplace’, when seeking to ‘satisfy their individual value preferences’ (Ibid; see also Milne, 2013). This complexity is heightened in the context of animal research for scientific and medical purposes, as publics do not necessarily imagine themselves to have a choice over their consumption of medicine or healthcare (McGlacken, 2021b). Additionally, as is implied throughout this thesis, they often lack agency over decisions made behind closed doors by scientific institutions, researchers, or regulators. Where publics are perceived as receptive consumers of animal research outputs, reaping its benefits through their own healthcare provision, animal research is almost presented as a kind of ‘public good’ that should be protected by its regulatory system. This, in turn, relegates their active role in ethical review to the periphery. Hence, recognising publics as legitimate stakeholder citizens possibly demands a more overt presence in an ethical review process.

4.3. What is it to perform or ‘do’ a localised ethical review in the UK AWERB?

Ethics committees play a vital role in implementing RRI principles within research processes, representing a significant stride towards achieving a more socially accountable and ‘ethically sound’ scientific endeavour (Moon, 2009). The development of a framework for institutional ethics within the AWERB and in the broader context of UK animal research is grounded in the principles of the ‘3Rs’ and the pursuit of a positive HBA. The HBA must demonstrate that the ‘potential benefits of the project for people, animals or the environment’ outweigh the ‘likely adverse effects’ (Home Office, 2014:6). After the passing of ASPA, the Home Office also later

made elaborations that this process should also give ‘due regard to societal concerns’ (ASC, 2016 :8). Accordingly, the presence of ethical review within the AWERB was anticipated by stakeholders to instil public trust in the integrity of the animal research regulatory system (Rose, 2012).

However, the adequacy of the ethical frameworks surrounding animal research ethical review has faced scrutiny since the establishment of local ERBs, with many critics suggesting that sole adherence to HBA and the 3Rs can often limit the scope of ethical discussion (McLeod and Hartley, 2018, DeGrazia and Beauchamp, 2019, Grimm et al., 2019). Such assessments imply that these structures tend to tacitly prioritise a reduction in the measurable physical suffering in animal models while holding a narrow conception of relevant societal/cultural concerns. Others note a predominantly bureaucratic or technical framing of ethics which disregards many ethical considerations, namely those of broader society (Raman et al., 2017, Tjärnström et al., 2018). Nevertheless, the UK government remains notably confident in the durability and effectiveness of the ‘3Rs’ and ‘HBA’ (ASC, 2016, UK Gov, 2021).

Such disagreements underscore a fundamental discrepancy regarding what constitutes legitimate decision-making in ‘institutional ethics’ according to stakeholders with different interests. This becomes especially significant in light of the literature review, which highlights that institutional ethics (or ethics with a lowercase ‘e’, see: Latimer and Puig de la Bellacasa (2013)) are deeply entrenched in cultural contexts and are influenced by institutional discourse, ideologies and social dynamics (Section 2.2.2.). Therefore, this section considers the practical execution of ‘ethical review’, identifying three central storylines encapsulating this process. Interpreting these storylines into broader *Imaginaries of Ethics* aims to establish the premise of an ‘ideal’ ethical review further.

4.3.1. Storyline A: Animal welfare monitored using centrally established engineering standards

The concept of ethics, or the process ascribed to ethical review, was generally left

undefined in most of the documents. References to ‘ethics’ or ‘ethical review’ typically implied a common and shared understanding of the expectations surrounding them, especially concerning the ‘3Rs’ or a HBA. One notable observation was the inclination for ‘animal welfare’ discussions to employ a highly regulation-based and objective language. Despite the AWERB serving as a primary location for ethical discourse, the crucial regulatory decisions occur behind closed doors in the Home Office during project licensing, reflecting a primarily centralised regulatory system in the UK. Many of the standards governing animal research are thus also determined centrally by Home Office committees/departments such as the ASC and the ASRU. This storyline suggests that many of the issues explicitly associated with animal welfare are addressed using language that reflects a reliance on expertise, standards, and rules. A vital example of this is the governmental guidance on housing, care and use of animals, which reads that all establishments should have a strategy in place to ensure that the ‘health status’ of animals is maintained in a manner which:

> *‘safeguards animal welfare and meets scientific requirements. This strategy shall include regular health monitoring, a microbiological surveillance programme and plans for dealing with health breakdowns and shall define health parameters and procedures for the introduction of new animals’* (ASRU, 2014: 16).

Another example from this document is the following table that reduces the housing specifications of mice under the researchers' care to space in cm^2:

Weight of animal (g)	Minimum floor area for one or more mice (cm^2)	Minimum floor area per group housed animal (cm^2)	Minimum cage height (cm)
<30	200	60	12
>30	200	100	12

Table 6. Housing specifications for mice by CM^2, taken from ASRU, 2014 :19.

Such non-emotive and technical language is replicated in documents published in the funding stream, where animal use is often reduced to a process of calculations that can infer the 'justifiable' number of animals used. For example, by taking into account:

> *'the planned statistical analyses, the significance threshold and power level, the population variance and the factors that might affect this, and the magnitude of response which would be of scientific or clinical interest.'* (NC3Rs, 2019 :18).

This language emphasises a pragmatic and measured way of ensuring the health and well-being of animal models used, relying on centrally established criteria. On paper, it fosters an almost dispassionate discussion about how animals are to be cared for in the research process, relying on minimum standards for things such as food and housing provision, or socialisation of the animals. Similarly, in illustrating how everyday decisions carry ethical implications, the RSPCA elaborates:

> *"even a decision about how frequently to clean a mouse cage could have an ethical as well as a practical dimension, because it might involve balancing competing animal and human interests in order to decide what ought to be done. The decision could involve weighing scientific evidence about what would promote the best possible mouse welfare, against constraints of technician time and financial costs (if the evidence suggests that more frequent cleaning would be beneficial), or against human health hazards due to odour and allergen build-up (if the evidence points to less frequent cleaning)."* (RSPCA, 2015 :56)

Naturally, this language mirrors the regulatory protocols governing animal research design, intending to prevent unnecessary suffering, both within and outside the laboratory. However, framing the welfare of animals used in research within these parameters for ethical review within the AWERB leaves scant room for professional or personal judgment. This observation echoes the previous conceptualisation of the UK animal research regulatory landscape, highlighted by Davies (2021: 182), who characterises it as encompassing 'engineering standards'. According to Davies, these standards can be quantified based on pre-established centrally configured guidelines/regulations, governing aspects such as animal care, experimental

protocols, and reporting requirements. This starkly contrasts with 'performance standards' which are observable in the US regulatory approach, where greater scope is provided for professional initiative and the exercise of expertise and experience. The fundamental disparity between the two approaches lies in their orientation: engineering standards represent a 'top-down' enforcement of standards, whereas performance standards entail a more 'bottom-up' negotiation between staff. As Davies suggests, adherence to either approach reflects the 'the wider political, social, and epistemic commitments' shaping the landscape of animal research. This suggests that there is a cultural dimension to the epistemic commitments in this storyline regarding UK policy. Animal welfare is considered a product of these guidelines, and animal *welfare* review determines compliance to these standards, rather than an individual assessment of an animals wellbeing.

4.3.2. Storyline B: 'Ethics' as 'caring'

The language used in the previous storyline contrasts substantially with those documents that *did* distinguish 'ethics' from 'welfare' – although such reflections were few and primarily concentrated within the animal welfare stream. When determining responsibility for the care and use of animals, all staff members are encouraged to take individual accountability, regardless of their position within the institution. This resonates with an industry-wide commitment to foster a 'culture of care' throughout all phases of the research process (Robinson and Kerton, 2021). An illustration of the evolution of this storyline is exemplified in the following excerpt, which unequivocally articulates the value of discussing 'ethics':

> '*ethics applies throughout a licensee's day-to-day work and is not confined to the ethical review within project evaluation... Applying the 3Rs alone does not equate to 'doing ethics' - practical ethics encompasses a much wider set of considerations about what it is, and is not, acceptable to do to animals and for what purpose'* (LASA & RSPCA, 2020: 5).

Equally, the following example from a different document (although authored by the same organisations) reminds staff that:

> *'ethics is integral to establishing and maintaining a culture of care''* (LASA & RSPCA, 2015: 56).

In such cases, the discussion/development of 'ethics' implies the need for members to employ their personal and professional integrity when making judgements, whereas deliberation of welfare (established above) implies a more centralised and detached approach.

This reading of the documents suggests that 'doing ethics' unfolds within the commitment of creating a culture of care rather than being a discrete, tangible 'moment' or decision in the ethical review process. This is further illustrated in a document authored by the European Commission, which emphasises that staff should be willing to:

> *'accept individual responsibility at all levels'* resulting in an attitude that *'is not based on complying with the rules alone but on an individual's positive and proactive mind-set and approach to animal welfare and humane science'* (EC, 2014: 16).

This suggests that ethics is perceived more as an attitude or ongoing disposition guiding individuals in their professional duties, whether through their roles or positions within the AWERB, or in their day-to-day roles in the institution, rather than as a distinct activity in ethical review. However, this slightly contradicts the storyline above, which implies there is limited room for personal judgment in decisions concerning animal welfare. In this setting, individual committee members are called upon for their expertise in specific areas of the research process (i.e. veterinarian, statistician, care staff). Ethics, on the other hand, is implied as 'extra' and a very different activity from the negotiation of welfare standards. This is further demonstrated by the fact that ethics is only mentioned in the AWERB 'additional tasks' and not the mandated activities (UK Gov, 2013).

4.3.3. Storyline C: AWERB as a key space to alleviate organisational tensions

The final storyline identified regarding the implied purpose of an AWERB was the inference that a key role of the AWERB was to provide the opportunity to facilitate discussion within their host institutions, giving all members a place to speak comfortably. This is demonstrable in the AWERBs 'additional' requirement to:

> *'provide a forum for discussion and development of ethical advice to the establishment license holder on all matters related to animal welfare, care and use at their establishment'* (UK Gov, 2013 :18)

Yet, numerous references to this aspect of the AWERB seemed to subtly suggest that research organisations using animals required a platform for employees to air their grievances in *'a collaborative, collegiate and non-confrontational approach'* (EC, 2014: 18). Partly, this reflects the sensitive nature of the topics up for discussion in the AWERB, where:

> *'Such questions are not easy to answer but, crucially, some may consider them difficult to even raise. What is therefore required is an atmosphere of trust, with the ultimate goal that the AWERBs can function as a kind of 'safe space', where individuals feel sufficiently comfortable to raise and respond to difficult questions.'* (RSPCA, ESRC et al., 2017: 6).

Though not all of the references explicitly touch on the dynamics inside the AWERB, some portray ethical review as a platform to mitigate institutional tensions by facilitating communication. Implicit in this storyline is the suggestion of existing tensions among scientists, technicians, and veterinarians. For example, the European Commission document suggests the importance of:

> *'empower[ing] care staff and veterinarians'* by ensuring they are *'respected and listened to and their roles and work are supported throughout the establishment'* as well as developing '*formal and informal communication channels between researchers and care and technical staff for mutual benefit'* (EC, 2014: 16 & 17).

The ethical review committee is thus presented as a space where such institutional members can get together to essentially 'solve' these tensions, where an effective committee can act as:

> '*a main point of contact for any conflicts between animal welfare and science… actively encouraging scientists, technicians and care staff to work together to develop and implement refinements'* (EC, 2014: 20).

This is something that the RSPCA recommend AWERB members themselves ask of the project proposals they are examining, asking them to reflect:

> *'Does there seem to be good communication between the animal care staff, veterinarians and the researchers working on the project, particularly regarding any concerns between animal care and scientific staff?'*

More principally, the document advises AWERB members to consider the question of:

> *'Has the ERB helped to address these [tensions]?'* (RSPCA, 2015: 38).

This implies that fostering harmony falls under the purview of the AWERB. In some senses, the promotion of the AWERB as a space to alleviate these tensions implies that inadequate communication opportunities might be the root cause of tensions rather than any inherently conflicting morality or professional commitments among different roles or areas of expertise. By extension, it is implied that institutions that successfully manage to improve staff communication can achieve ethical consensus.

Again, the RSPCA depart from this storyline slightly by suggesting that reaching a consensus can be more complex than this. They note that:

> '*there may be times when some members disagree with the majority view and feel unable to compromise their position. Expressing and standing by a difference of opinion can be difficult, but is important, since always compromising in such circumstances diminishes the value of involving a diversity of perspectives…'* (RSPCA, 2015: 34).

However, other than this one example of a counter-storyline, the AWERB role in providing the opportunity to ‘solve’ complex issues is by far more dominant storyline throughout the guidance documents.

4.3.4. Key imaginary of Ethics: AWERB should pursue a moral consensus

While ‘ethics’ and ‘welfare’ are not explicitly defined as two separate tasks of the AWERB, there is a nuanced distinction in language and tone used to address the issues typically associated with each term. Storyline A references how animal housing, husbandry, care, etc. (‘welfare’) are regulated according to centralised and pragmatic ‘engineering standards’ (as per Davies, 2021). Conversely, in Storyline B, ‘ethics’ both within and outside the AWERB is essentially presented as the fostering an ethical mindset towards the practice of animal research more generally – a ‘culture of care’ – rather being a distinct deliberative ‘moment’ assigned to any specific AWERB member to oversee. Equally, Storyline C positions the AWERB as a critical site through which various organisational members can join together and communicate effectively to reach a harmonious consensus on matters that arise (Storyline C).

Scientists, technicians, veterinarians, statisticians, and other AWERB members are expected to exert their epistemic authority over welfare issues, closely adhering to centrally produced guidance. In contrast, broader ethical and societal issues are presented as discretionary or a beneficial ‘extra’ that all members should consider, where feasible. No specific AWERB member is tasked with overseeing its actualisation. ‘Ethics’ within the AWERB is accordingly portrayed as an institutional-wide commitment to be self-critical, which can be aided by improving communication inside the AWERB (i.e. giving technicians a voice), providing space to arrive at an institutional consensus on tricky issues. The key imaginary developed here suggests that the ethical review process in the AWERB amounts to pursuing a consensus among the expert members of the AWERB and evoking equal consensus among the broader institution.

4.3.5. Implication: where is ethics in the expert consensus?

The prospect of a consensus culture in ethical review committees is not an uncontested phenomenon (Moreno, 1988, Kelly, 2003, Moore, 2010a, Moore, 2010b, Schweda and Schicktanz, 2010). Yet, this imaginary – that the 'doing' of ethical review is dominated by the motif of reaching an 'expert consensus' – is important, as the AWERB has many tasks. Some of these are mandated, and some 'additional'. This means that where the committee is constrained in time and resources, a bias towards topics where consensus is both attainable and centrally established is potentially more likely, as with the resolution of 'welfare' dilemmas (cage size, food provision etc.). Discussing ethics committees, Moore (2010b:208) contends that only a very 'technical model' of ethics seeks consensus. Similarly, Moreno (1995:62) emphasises that ethical structures 'must somehow produce decisions or recommendations that are valid expressions of moral consensus in a pluralistic society', almost always leading to the exclusion of a number of viewpoints. On the topic of animal research specifically, Poort et al. (2013:2) observe that discussions in ethics committees often prioritise aspects of the methodological or scientific considerations to do with research design while downplaying the 'messier' issues, such as whether the research should be allowed to go ahead in the first place. This tendency shapes the whole purpose of the AWERB, focusing on matters where consensus is feasible based on the committees' expert membership. Consequently, AWERBs focus on technical questions of research design, leaving ethics unspoken, unnoticed, or pushed to the back of the agenda (Poort et al., 2013:6). Others have suggested ethics review processes can routinely ignore ethical issues that 'fall outside the law' entirely (Colnerud, 2015:249). Conversely, broader ethical issues are portrayed as a beneficial 'extra', and the concern of each individual AWERB member (in their personal responsibility to develop a 'culture of care').

4.4. What, ultimately, does it mean to produce 'ethical' science?

The relationship between the review of scientific/methodological aspects and ethical considerations associated with a research project is undeniably complex, with some suggesting that drawing distinctions between the two is near impossible (Dawson and Yentis, 2007, Hobson-West, 2012, Job, 2014). In the 'normal science' paradigm, producing science that could be relied upon was considered most 'ethical' (Bryant et al., 2018). This perspective assumes that 'without this ability to trust what other scientists publish, the whole edifice of science would tumble' (*Ibid*:8). However, there has been a noticeable shift in both academic thought and policy-making discourse, acknowledging that scientists do not work in a social vacuum (Pinch and Bijker, 1984, Latour and Woolgar, 1979, Schauz, 2014). Formalised mechanisms of ethical research governance, such as institutional ethical review processes and committees, are now tasked with establishing institutional accountability for the broader risks associated with medical/scientific research to individuals, communities, the environment, and non-human animals, as well as the quality of their research (Dyer and Demeritt, 2008). Accordingly, an argument exists for incorporating a broader range of expertise in the decision-making process to address these relevant aspects (Moore, 2010b, Schicktanz et al., 2012). This has complicated the traditional understanding of what it means to ultimately produce 'ethical science', expanding its discussion beyond the norms and ideologies of science or philosophy alone. It now potentially includes a much more diverse and intricate range of perspectives and actors who may not adhere to strict ethical theories or frameworks. Moreover, there is a likelihood of multiple ethical imaginaries at play, influencing not only how an ethical issue is perceived/framed but, crucially, how it is imagined that should be resolved.

Understanding how the overarching goal of producing 'ethical science' is ultimately inferred through these documents is crucial in guiding decision-making processes and influencing what exactly the AWERB is looking to achieve. This theme is arguably the most abstract of the three, aiming to portray *Imaginaries of Ethics* in their broadest sense. Like the previous two sections, it identifies storylines and attempts to interpret them into the *Imaginaries of Ethics* that fundamentally underpin, like 'dreamscapes' (Jasanoff and Kim, 2015), the entire premise of ethical review.

4.4.1. Storyline A: 'Ethics', 'welfare', and 'good science' as aligned goals

As noted in the previous storyline (particularly section 4.3.2.), the guidance surrounding the explicit function of 'ethics' in the AWERB is surprisingly absent. However, insights from those involved in establishing AWERBs suggest that stakeholders recognised the inadequacy of limiting their focus solely to deliberations of 'welfare' concerns, citing public trust as a likely byproduct of making such commitments (Liverpool Animal Ethics Group, 1986, Rose, 2012). Therefore, including ethical dimensions was a deliberate choice for policymakers. Nonetheless, this analysis reveals a lack of discussion on the practical distinctions between the two concepts beyond a linguistic choice to do with the name of the committee. Moreover, there were also many instances where 'ethics' and 'welfare' matters are mentioned in chorus with the pursuit of 'good' science, suggesting that ethical and welfare considerations enhanced the *quality* of scientific output. For example, where the NC3Rs (publishing in the funding body stream) indicate in their guidance that:

> *'high standards in the design and conduct of animal research and full implementation of the 3Rs are important for ethical reasons and to obtain the best possible scientific results'* (2014: 4).

While this extract indicates that ethics and science are compatible goals of well-designed research, other documents go a step further and suggest that the two are contingent on one another:

> *'good welfare and thoughtful use of animals in experiments is essential for good science'* (RSPCA, 2020: 11).

The RSPCA, in a separate document (aimed at guiding new lay members and introducing them to ethical review), delves deeper further into the rationale for such statements, writing:

> *"Good animal welfare is vital not only because of its positive effects on the animals, but because it is essential to good science. This emphasises the importance of all the functions of the ERB. When animals are stressed, they*

may appear outwardly normal but their physiology may be affected in a number of ways (e.g. changes in heart rate and the levels of "stress" hormones in the blood). This can influence the variability, reliability and reproducibility of scientific data. Reducing animal suffering and improving welfare increases the reliability and reproducibility of data, which helps to reduce the likelihood that experiments will have to be repeated, and can reduce the variability of results, allowing smaller group sizes to be used." (2015: 16).

It is, of course, possible that the RSPCA are aiming to explain how ethics/welfare concerns are not only beneficial to the animals but that there are also benefits to be garnered from researchers in carefully designing their research. However, it is here inferred that ethics, welfare, and the pursuit of 'good' science are all aligned goals that can be reached harmoniously through collaborative efforts and good communication. However, it also infers a lack of acknowledgement that these goals may sometimes diverge or even directly conflict in their prioritisation of different objectives. This, in turn, prioritises 'good' and productive science as a core ethical pursuit, in line with 'normal' science paradigms where scientists can effectively build upon one another's work reliably. Yet, this becomes particularly pertinent when noting the comparative absence of references to other important ethical considerations, for example, respect to/for animals (Röcklinsberg et al., 2014), the negative impact on the welfare of the staff involved (Williams, 2021), or advocacy for including public voice in animal research regulation according to democratic principles (Ormandy, 2012).

4.4.2. Storyline B: All harm as justified by experts

Several regulatory mechanisms have been implemented to oversee the use of animals in research, claiming to ensure it is conducted only when absolutely necessary and with minimal suffering. These include adherence to the 3Rs, fostering a culture of care, and subjecting research to an HBA. However, the guidance documents indicate instances where harm to animals beyond that usually accepted may be permitted if deemed justified by the relevant experts. This is particularly evident in cases where scientists or the Secretary of State can bypass the usual protections of animals in such

processes where justified. For instance, project license applications are expected to demonstrate that *'appropriate analgesics or anaesthetics'* will be used (ASRU, 2014:14), that measures must be taken *'to avoid the duplication of studies'* (ASRU, 2014: 16), and there exists *'clear, predictable and irreversible criteria'* for reaching a 'humane endpoint' (ASRU, 2014: 5). However, it is suggested that in all of these cases, there are circumstances where such precautions can be overruled. For example, in the case of anaesthesia, it should always be used unless:

> *"specifically contra-indicated; for example, if there is compelling scientific justification to withhold them and this is justified in the project licence."* (Home Office, 2014 :14).

Several of the documents detailed that while minimising suffering is a requirement, where science justifies (and the Secretary of State agrees) this can be overlooked. The same observations are made of humane killing methods or suffering allowed, as demonstrated in the two examples below:

> *'A project licence may specify a method of killing as being appropriate to a particular type of animal but only when the Secretary of State is satisfied, on the basis of a scientific justification, that the purposes of the programme of work cannot be achieved if a Schedule 1 method of killing appropriate to the type of animal in question is used.*' (Home Office, 2014 :67).

> *'action should be taken to minimise the suffering of the animal'* unless '*the secretary of state has agreed otherwise'* (Home Office 2015: 68).

These caveats were particularly interesting, as they imply some circumstances would justify the abandonment of the usual precautions of the ethical process. This becomes particularly interesting given the absence of mention, or reference to, potential instances where AWERBs might recommend the complete abandonment of a research proposal. Across all 15 documents, there was just one vague reference implying the possibility that an AWERB could rule that a project should not proceed on ethical grounds, even if it met all the regulatory criteria. This implies to the reader that while AWERBs may advise researchers to improve the research design, outright

rejection is highly unlikely. This, combined with the ability of expertise to justify the abandonment of usual protocols, implies that decisions about what is ethically acceptable in such scenarios are primarily influenced by factors such as science, expertise, power, and status, and not 'ethics' in and of itself.

4.4.3. Key imaginary of Ethics: Ethical science = good (refined and productive) science

Storyline A references the assumption that the goals of 'ethics', 'welfare' and the pursuit of 'good science' are linked, aligned and compatible goals that a functioning AWERB can achieve in its current form. Storyline A was the dominant storyline, in that the subjects were rarely discussed as separate phenomena and is specifically based on the notion that *good* science *is* ethical science: science that we can 'trust' and upon which further scientific research can build upon in good faith. Good science is linked to good welfare because it minimises the number of animals used. Equally, housing and caring for animals in a controlled manner reduces uncontrolled variables that may impact the results, resulting in more consistent results. This carries with it assumptions about the ethical responsibilities of the researcher to the scientific community and to science itself (i.e. reproducibility, managing variables), primarily asserting that scientists are best placed to attend to the ethical issues tackled in the AWERB. Accordingly, while specific scientific justifications may prompt the relaxation of structures designed to ensure the ethical treatment of animals in research, ethical considerations are not a valid cause for abandoning a research project entirely, illustrating an intellectual hierarchy between the two (Storyline B).

Ethical science is accordingly presented as that which is most transferrable between laboratories and from animal models to human therapy. The reliability of research results is vitally important, and ethics and welfare considerations can assist in achieving this goal. Accordingly, this takes priority certainly over the production of socially/democratically legitimate science but also potentially over ethical considerations. AWERB members should be *aware* of broader societal concerns, but

ultimately, this is less indicative of the ethical/moral production of scientific outputs as *reliable* science.

4.4.4. Implications: science as the final arbiter of what is "ethical'?

If the supposition that ethical review is indeed guided by the notion that 'ethical science' is most viscerally aligned with the production of robust scientific results, informed by scientific expertise is accepted, then decision-making within the AWERB closely reflects the traditional ethical frameworks that have historically underpinned science (i.e. see: Beauchamp and Childress (2008)). This infers that the objective and final arbiter of what is perceived to be 'ethical' in an institutional setting is the quality of the science, or those circumstances where the benefits justify the means through their translatability and applicability. However, given that the pure objectivity of science has been called into question (See section 2.1.1.), this also raises an important question about the possibility that ethical review in the AWERB can be considered objective. This notion has been made in this context previously, where Olsson et al. (2019) argue that the application of the 3Rs themselves involves intricate negotiation between the 'Rs'. They contend that prioritising any 'R' over the others is a value judgement and that grouping these together in decision-making conceals underlying tensions. Job (2014) makes a similar observation about animal research ethical review, suggesting their guise of objectivity is misguided. This imaginary of science as the final arbiter of what is ethical or justifiable demonstrates the potential that AWERBs may reinforce existing power relations rather than operate as a platform to critique or discuss them. As such, we are left with the possibility that the application of such a configuration of institutional ethics is preconfigured, and therefore 'decided far from the actual conditions of possibility encountered in the plane of action' (Latimer and Puig de la Bellacasa, 2013 :157)

4.5. Chapter conclusions

This empirical chapter's primary aim was to break down the complex negotiation of stakeholder values and ideologies within the regulatory context, something which

existing structural policy analyses lacked detail about. Focusing on 15 key policy and guidance documents, the analysis aimed to conceptualise the interplay between publics and ethical review from the perspectives of key stakeholders. From this analysis, three overarching themes emerged. Firstly, concerning the role of publics in ethical review, documents were found to reflect an imaginary where publics are primarily defined by their consumption of research outputs rather than active participants with a stake in the ethical dimensions of animal research. This characterisation, it is argued, legitimises the absence of public engagement in ethical review processes, or at the very least homogenises diverse publics, and eliminates ambivalences in those who consume the outputs of animal research but still have serious concerns over the manner in which it is conducted (McGlacken, 2021a). Secondly, regarding the envisioned *process* of ethical review, the idealised ethical review is inferred to be one that reaches a harmonious consensus among its expert members. This analysis reflects how such a pursuit potentially foregrounds technical and pragmatic subjects while dismissing other complex issues as beyond the scope of discussion. Finally, the third imaginary revolves around the principle that 'ethical science' – as an implicit goal of the successful institutional ethical review body – is that which produces (or facilitates) good quality science and is perhaps most closely characterised by the traditional normative and technical ethical frameworks that have typically driven the production of science.

Therefore, the analysis in this chapter suggests that ethical review, as portrayed in its guidance documents, prioritises objectivity and expertise while overlooking the complexities of human emotion and interpersonal dynamics. This perspective is evident in the ethical frameworks outlined in this chapter, where public involvement is limited, expert consensus is prioritised, and the pursuit of "good" science is deemed paramount. This reflects and reinforces traditional scientific paradigms, wherein science itself is positioned as the ultimate arbiter of ethical research, with benefits justifying means through translatability and applicability. These frameworks elucidate the evolution of the regulatory context and offer insights into its potential future trajectory if integrated into the ethical review process. Consequently, ethical review maintains a normative commitment to scientific expertise and animal research as

benchmarks of scientific empiricism rather than facilitating institution-wide introspection on the use of animals. The subsequent three chapters apply this analytical and conceptual framework to the analysis of focus group sessions, exploring the same thematic questions as in this chapter.

Chapter Five: Lay Imaginings of 'The Public', and their Stake in Institutional Ethical Review

Conceptualising how publics' perceive their own 'stake' in animal research is crucial for framing their legitimate role in an 'ideally' functioning ethical review system, which is the ambition of this thesis. Initially, animal ethics committees were lauded by stakeholders for their potential to 'engender public confidence' in decisions related to animal research (Rose (2012:283). However, this contention has received little consideration since. Therefore, this data analysis chapter aims to disentangle the currently under-researched relationship between publics, the practice of animal research, and the institutional ethics systems that oversee it.

The literature review detailed concerns regarding how, when, and why 'the public' is invited to participate in regulatory activities surrounding science and technology (See section 2.1.2.). It highlighted the specific challenges in the context of animal research context, historically a contentious political field. STS scholars have argued that the model of *good* scientific governance is shifting towards a 'more systematic and networked approach' (Michael and Brown, 2005, Macnaghten and Chilvers, 2014:530; see also). The premise of such a shift implies a need for researchers to change their focus from abstract questions about public acceptance of certain technologies to actively '*listening* to the public' (Lezaun and Soneryd, 2007). This perspective challenges overreliance on survey data to gauge public opinion, often seen as inadequate for capturing the breadth and depth of public sentiments (Hobson-West, 2010). Using such work, I argued the value of engaging with publics on topics such as the purpose of science, the direction and speed of innovation, and the perceived equity in its benefits (Michael and Brown, 2005, Lezaun and Soneryd, 2007, Macnaghten and Guivant, 2011, Macnaghten and Chilvers, 2014). These contemplations are broadly encapsulated in the theoretical and analytical framework of *Imaginaries of Ethics* developed throughout this thesis.

Accordingly, the previous chapter (Chapter 4) analysed how AWERB policy and guidance documents jointly conceptualised the role of 'the lay public' in the ethical review of animal research. The analysis framed publics as **consumers** of the outputs of animal research, such as the knowledge produced, the medicinal/therapeutic benefits, and the associated science communication outputs. There is significantly less emphasis on other roles publics can (and do) play, such as holders of a democratic stake in how science is conducted. This perspective is also seemingly demonstrated by the routine absence of publics from the AWERB structure, as demonstrated in Section 1.3. The following empirical chapter examines the focus group data to further explore this discussion. It largely mirrors the structure of the previous analysis chapter (Chapter 3), although focuses on the first theme only, investigating how participants envisioned their own role in the ethical review of animal research. The analysis again employs Hajer's (2006) method of storyline identification to construct 3 distinct storylines from the focus group dialogue. These storylines are then contextualised within existing literature on publics' understanding and engagement with science to develop an underlying *Imaginary of Ethics* which underpins these storylines. This chapter theorises the idealised role of publics, public representatives, and public/lay expertise in the ethical review of animal research, as derived from the analysis of six focus groups with 'lay' publics. It specifically examines where, when, and in what form participants jointly imagined they could add value to this process.

5.1. Storyline A: Public as 'quasi' rational

As explored in the methodology chapter (3.2.2.), the focus group schedule was designed to facilitate some general exploration of the ethics of animal research *before* I raised the subject of the AWERB, and without predefining the scope of such 'ethics'. After a short break in the 2-hour session, participants were then welcomed back and provided with a definition of the AWERB (See section 3.2.2. & Appendix C), which was designed to reflect (as much as possible) the language used by official Home Office policy documentation. Upon learning of the AWERB, its structure, and its tendency to

include a ‘lay member’, *all* participants **rejected** the notion that they would sit on the committee should the opportunity materialise. Several reasons for doing so were advanced and are explored in the first half of the below storyline. Interestingly, however, participants notably made the distinction between (a) holding the required expertise to participate and (b) holding the capacity for ‘rational thinking’; the latter they more readily afforded themselves (and other focus group members), even when the former was considered lacking. However, this assessment was not made of *all* ‘publics’, as participants actively constructed a less rational ‘other’ public in contrast to themselves. Participants, accordingly, position themselves somewhere in the middle: a ‘quasi-rational’ group, rational *enough* to add value to the general discussion but rebutting institutional ethical review (as described to them) as a fitting platform to exercise such rational thinking.

5.1.1. Rejecting the role of lay membership within the AWERB

The introductory chapter of this thesis explored the extent to which publics are represented through the AWERBs’ **lay members** and determined that the existing structure does not necessarily provide such means (Section 1.4.). Instead, their role is constituted differently, with the previous chapter signifying its comparability to a kind of ‘devil’s advocate’ who can valuably invigorate the scope of discussion rather than as a mechanism to speak *for* ‘the public’. However, little is known about how the wider public regards the position. On this matter, focus group participants noted that they were unlikely to sit on an AWERB as a lay member despite the details of the role not being clearly specified in the definition provided to introduce the committee (See Appendix C). In doing so, they tended to reflexively develop some prerequisite criteria for the kind of individual/actor they saw as suitable for lay membership; before noting why they themselves would not qualify. This pursuit saw participants position themselves in *relation* to an ‘idealised’ layperson involved in decision-making at an institutional level. Reasons for refusing involvement varied between participants. However, perhaps the most common indication was that they were in some sense *too* ‘lay’ for the imagined role in the specific context described. Participants also construct several characterisations of what it means to be ‘too lay’. For example, that the lay

member would require a certain level of knowledge or experience. Participant 2 demonstrates this perspective particularly well in the following extract:

> *"Well… I don't work in that field, so I'd probably be asking the wrong questions. You've just got to get the right people who are* ***educated****, who* ***know enough*** *about it to say 'well…'* [to be decisive]*. The layperson has probably got the* ***knowledge*** *that I haven't to see both sides… To understand why they have to do these things, and then understand why they shouldn't. I wouldn't have that same knowledge." (Focus Group A, Participant 2; emphasis added)*

Participant 2, in making this claim, affords limited value to their own imagined contributions to AWERB discussions, referencing a lack of ability to be decisive. This was inferred in how they stated the 'right' person would be able to say *'well…'* (while making a short, sharp chopping gesture with their hand indicating purpose). Decisiveness is therefore posited as a by-product of holding the relevant knowledge, thus advantageous in ethical review. They also indicate that a certain level of impartiality is also required, which they define as the ability to *"see both sides".* On this point, Participant 19 tells the group they would not accept the role as a lay member as they felt they would *"find it really hard to listen to the logical side of it and just completely forget [their] emotions".* They further note that they would be unable to make decisions decisively and would potentially abstain too often to be of value. Here, they, like Participant 2 prior, indicate that a lay member should be able to engage with both sides and do so efficiently.

Concerns that they could hinder progress through their laity were not unusual. Participant 26 also notes unease around the potential for experiencing '*imposter syndrome*' if they were to take part in decision-making in the AWERB, which they explain further:

> *"I think I'd be stuck in existential dread of which suffers. The animal? The people? What is the cost of the benefits? I feel like the responsibility would be so overwhelming, which is a bad stance to take, really. Because like I said,*

otherwise nothing would get done. There would be no progress". (Focus Group F, Participant 26)

This refusal is potentially tied to something about the regulatory stage in which ethical review is perceived to take place and, therefore, what is seen to be at stake. Participant 26's anxieties appear to be about the imminence of the project discussed and the implication of this, which is the making of decisions around specific animals of a specific number for a specific aim. Again, they note a lack of decisiveness as the critical problem to their inclusion in the committee. Although the increased knowledge and the efficiency this is seen to evoke in the decision-making process is not considered quite enough. Participants also indicate a requirement of some level of detachedness, whether detachment from the benefits or detachment from the field of science more broadly. Both are explored below.

Participant 2 suggests that one trepidation for them of accepting the role of lay member would be that:

"…they could turn to me and say… "well, you can't have your medication anymore". Say I had a heart problem, and that medicine comes from animals. They'd catch me out anyway, you know" (Focus Group A, Participant 2)

There are a number of ways of interpreting this statement. For example, the participant could be inferring that they saw independence as a precondition of lay membership and hence reflected that their own use of heart medication would be, in some senses, *gaining* from animal research, prohibiting their impartiality. Alternatively, it could be read to suggest that they saw lay membership as requiring exemplary individual moral standards in everyday life, with Participant 2 concerned that others would assess their use of medication (associated with animal research) as failing to meet. Either way, **non-proximity** to the outputs of animal research was a significant criterion of lay membership; the meeting of such, they did not afford themselves. In a separate focus group discussion, Participant 13 placed less emphasis on total impartiality in this way. Like other participants, they signalled they would likely refuse the role (again, noting a

lack of knowledge) but, interestingly, also saw themselves as lacking the required *passion.*

> *"If I was speaking for myself, I'd say... I've come onto this* [focus group] *for two hours. That's fine. I have a little kind of vague, hazy knowledge of the whole thing. I don't like the idea that those medicines were tested on horses* [referring to their own object]*, but I don't have enough of a knowledge base. You have to have a critical mass of knowledge to be on an expert committee like that* ***and you have to have the passion****. I don't. I'm sorry, I don't" (Focus Group C, Participant 13; emphasis added)*

This could mean that Participants 2 and 13 simply have differing views or understandings around potential prerequisites to lay membership. Although perhaps 'proximity' as an exclusionary attribute refers only to proximity in a professional or consumptive sense, emotional proximity (or *caring)* is not necessarily foreseen as an exclusionary attribute. Indeed, this view can also be read in the following extract by Participant 16:

> *"I think a layman might be more emotive about those situations. But they will be less pressured to make beneficial decisions for an institution, you know, they don't have that vested interest." (Focus Group D, Participant 16).*

The assumption that a layperson should be more emotive is also inferred in exchange with Participant 19, who suggested they would find it difficult to *'forget their emotions'.* Other focus group participants sought to reassure them this would make them a valuable asset to the AWERB:

> *"In some ways, I mean… that would make you a better candidate." (Focus Group D, Participant 17)*

> *"Do you think?" (Focus Group D, Participant 19)*

"*Yeah. Because then they would really have to go out of their way to convince you." (Focus Group D, Participant 18)*

"*What we don't want is someone that's completely dispassionate about it. Because if you're dispassionate about it completely you're even less use. That's just saying, "oh well, do what you want then". At least if you have those strong moral feelings, then that means there is an obstacle that would require the ceiling for getting that past you to be higher. Plus, you're probably not that weird compared to a lot of people… That's kind of what we want, isn't it? To force the ethical treatment to be higher." (Focus Group D, Participant 17)*

While impartiality is implied to be important in the AWERB (to see both sides and be decisive), this exchange suggests that emotive contributions were not considered unsuitable for ethical review. Equally intriguing were those participants who indicated the contrary, suggesting that they would not accept the role because they were **not lay *enough***. Such participants tended to reference their proximity to science in their rationalisations. For example, Participant 16 suggested they would not qualify for the role because of their bachelor's degree in physics and astrophysics, noting: *"…because of the contact I've have people in the field I'd actually have to deny such a role." (Focus Group D, Participant 16).* Similarly, in a separate focus group, Participant 25 suggested that they would not be able to accept the role due to their current position as a postgraduate researcher in Psychology: *"I think I would be a conflict of interest then. Like, I wouldn't really be a lay person because I am a scientist, sort of" (Focus Group F, Participant 25).* In such cases, proximity to the field of science is presented as an exclusionary criterion by 'contact' and the conflict of interest this may evoke.

Through such accounts, in rejecting lay membership, participants reflexively demarcated a constructed 'other' that *was* rational enough to accept the role: an imagined lay member. According to this analysis, this lay member should be knowledgeable and experienced but independent of the field of science entirely (although not wholly without passion or emotion for the topic). The benefit of having a

suitable lay member is indicated to assist progress at such a crucial stage in research regulation through an ability to be decisive, as participants appear to prioritise efficiency and infer trepidations of halting progress.

5.1.2. Rational vs. irrational publics

As well as rhetorically distancing themselves from a *more* suitable imagined lay member of the AWERB as explored above, participants also demonstrated a tendency to distance themselves from a *less* suitable 'other'. Such publics were often charged with disrupting and derailing productive discussions within and outside institutional ethical review. In such circumstances, it was an assumed lack of familiarity with the topic that would bar this imagined person from legitimately partaking in institutional ethical review, for example:

> *"I don't know if I'd want too much public input really. The public can often be quite… misinformed or? What's the word I'm looking for… Not stupid, but you know… don't know the facts." (Focus Group A, Participant 5)*

> *"Not as knowledgeable, not as knowledgeable." (Focus Group A, Participant 2)*

> *"Yeah - and I think if you've got the public - sort of - getting their input in there, it can undermine some of the expert advice." (Focus Group A, Participant 5)*

Despite this, participants also drew distinctions between their lack of knowledge (their own perceived barrier to lay membership) and the lack of knowledge that would prevent the 'other' publics from engaging with the review. For example, a marked significance was placed on their own capability to engage with information critically. In the following exchange between Participants 16 and 17, they praised their own learnt competence in cognitively 'managing' data and information. A *less* rational member of 'the public' would fail to do this in the same way.

"*You said you studied maths and physics? I did history. So, you know, weighing up sources is… is kind of… It's just a feature of life for me. There's always gonna be a slant in any information." (Focus Group D, Participant 17)*

"That's the thing when you've done those sort of studies… the majority of my time has been spent learning how to validate sources, you know. Attributing the appropriate weight to different types of information… And one of my worries is the vast majority of the population hasn't had that specific training... in being able to understand that there are different levels of information validity." (Focus Group D, Participant 16)

In this exchange, participants construct an image of an irrational public who fails to engage critically with evidence, and then can be observed drawing distance between themselves and this conceptualisation. Yet, while the aforementioned 'ideal' lay member was expected to improve ethical discussions with their use of emotion and passion, the discussion of 'other publics' highlighted the *unsuitable* employment of such subjectivities. For example, the inclusion of particular social groups was routinely portrayed as detrimental to rational discussions – particularly animal rights activists and 'vegans'. The projected tendency of such social groups to 'take it too far' is illustrated in the following exchange between Participants 25 and 26.

"There are some groups that take it too far, I guess. Like PETA… They paint everyone who touches an animal as like a demon or something like that… [Their approach is to] just be like 'you're a piece of garbage and how dare you...'. (Focus Group F, Participant 25)

"Yes, like every time you go on Oxford Street and there's always this group of people that stand opposite - what's that store called? I can't remember. But you look at those activists and you just think… they just look like lunatics and like, no one is paying attention to them anymore." (Focus Group F, Participant 26)

“The activists who are like that, environmentalists and the sort, they end up with the same people listening... People who want to look after animals are not gonna change their mind. They're probably not gonna change the mind of people who’re like “I'm gonna eat meat out of spite now watching this” either… But what they’re doing is pissing everyone off. Just doing more bad than good. You just can't really win in any of these situations.” (Focus Group F, Participant 25)

Exchanges such as this can be read for a sense of who participants assign ‘irrationality’ to, and for what kind of behaviours reflect it in an ethical review process (and therefore should be excluded from ethical review). The above extract, for example, suggests that the holding of such fixed views with no room for fluidity is unproductive. The same can be said of the following extracts, where participants reflected on their focus group experience (in the concluding discussions). Primarily, participants advanced their self-assessed malleable viewpoints as allowing them to successfully take part in the focus group session in a way that a conceivably ‘irrational’ public may not have been able to:

“I was quite surprised that everybody, kind of, had the same view. That even though we don't like the idea of testing on animals, we understand that there is a necessity in some cases, particularly for medical use. Because obviously if you had somebody that was a vegan, they might not - they would have like, polarised views. So, I was quite surprised that nobody was completely against it, and, you know, not willing to listen to other reasons.” (Focus Group A, Participant 4)

“Do you think that that would have really changed the dynamic of the group?” (Group Moderator)

“Yeah, like, if you had a vegan here it would change the discussion. There would be more conflict. Whereas we’ve had a nice discussion, it’s been good.” (Focus Group A, Participant 5)

Of course, as detailed in the methodology chapter (3.2.2.), the sampling criteria were extremely broad. As such, abiding a vegan/vegetarian diet was not an exclusionary attribute when taking part in the focus groups. Some participants voiced that were vegan/vegetarian and were still included by fellow participants in assessments of who was 'rational'. Therefore in such conversations, such references to veganism appears not to reference lifestyle choices around food consumption, but instead was used interchangeably with other social movements such as 'environmentalists'. These were employed as examples of individuals holding fixed, immutable views on matters of moral importance. As such, key tenets to the concept of 'rationality' constructed through the focus groups appear to be (a) the ability to critically engage with information and (b) allowing oneself to be influenced by compelling evidence when faced with it.

5.1.3. Storyline conclusion

This analysis has identified an underlying storyline whereby participants drew distinctions between themselves and 'other' imagined publics that are either more or less 'rational' and, therefore, more or less legitimised to enter regulatory contexts than themselves. Participants tended to depict themselves as somewhere in-between, a kind of **'quasi-rational' public.** The presence of this storyline was discernible throughout the focus groups, *despite* each session providing a distinct variation in its make-up (i.e. (non-) university educated, scientists by vocation, (non-)meat eaters, etc.), with varying degrees of perceivable 'acceptance' of the necessity for animal models expressed among participants. In social science research more broadly, the observation that public self-representations around science and technology tend to denote a 'rational' and an 'irrational' public, in both animal research and more broadly, is not new (see: Michael and Brown, 2005, McGlacken, 2021b). However, this analysis demonstrates fluctuations in such assessments depending on the context through which researchers ask participants to reflect on this. For example, when imagining themselves in an institutional ethical review body alongside scientists, participants positioned themselves as lacking in the relevant criteria. However, when making the same assessments in a different context (for example, when faced with animal rights

activism), they reflected on their discursive capabilities much more favourably. In positioning themselves as quasi-rational debaters, participants could be seen reflecting on the value they had added to *this* focus group setting but denouncing their capability to do so in the more formalised setting of an AWERB. This is a valuable observation for both their characterisation of public expertise and rationality and their imagined requirements for participating in the institutional AWERB.

Interestingly, 'quasi-rationality' is a concept often used in economic theory, although this was not the inspiration for its use in this chapter. In such contexts, it references decision-making in management studies that is made through a combination of intuitive and rational thought, which is theorised to vary on a continuum from pure rationality to pure intuition (Dhami and Thomson, 2012). While a fairly reductive conceptualisation of decision-making from an ethical standpoint, when this concept is applied to the above analysis, there are similarities in the way 'other' publics are seen to draw purely from intuition (heuristics and biases), unlike participants' conceptualisations of themselves (actively engaging with persuasive information). Equally, institutional decision-making is inferred to require a more concentrated form of 'pure rationality', in which they do not see their own 'expertise' as in alignment, thus explaining the tendency to reject the likelihood/suitability of lay membership. Felt et al. (2009:357) have previously noted that institutional ethics is commonly associated with 'expert rationality' and is therefore 'assumed to be a priori more "rational" than the "moral sentiments" of lay people'. This assumed intellectual hierarchy is reflected in this storyline. Although, participants did not see themselves as wholly drawing on moral sentiments in this way, and instead characterised their capacity for rationality.

5.2. Storyline B: The social conflicts of 'being' public

Given the demonstration in the previous section of participants rejecting active engagement within the AWERB structure, an interesting paradox emerged during the focus group sessions. Participants justified their lack of involvement by citing everyday time and attention constraints that hinder public participation in activities such as

serving on an AWERB or reading lay summaries of research proposals. Despite these obstacles, they still acknowledged that the ethical review process is indeed in the public interest, inferring it a space for public participation ‘in an ideal world’. This created a dichotomy where participants alternated between speaking as a theoretical political entity ('the public') and as situated citizens ('I', 'we', 'us'). As the former, they drew on high-level concepts of power, democracy, and political agency to justify public engagement in the systems that impact them. As the latter, they spoke from their personal embodied experience, highlighting the practical challenges and pressures of participating in such activities in a modern world where their attention is constantly in demand.

5.2.1. Animal research and the public interest

To encourage participants to jointly frame their own *Imaginaries of Ethics*, rather than having these imposed upon them, they were not asked directly about their own imagined ‘stake’ despite this being a core research question/interest. Instead, participants were left to shape their own sense of themselves and their agency as they explored questions around the object elicitation task, the criteria for ethical science, or the AWERB specifically. Typically, however, they were quick to demarcate a definite authority for publics *in general*. They did so through the three particular means considered in the storyline below, touching on matters such as science’s core ‘goal’, the value of lay knowledge within the ‘scientific framework’, and the perceived weight of democratic pressures. This analysis suggests that, for participants, ‘the public’ *in general* holds a definite political, democratic, and citizenly interest in the practice of medical and scientific research using animals.

The first indication of this storyline lay in the tendency for participants to assert that ‘science’ should *“advance general knowledge or human health”* and, therefore, should not take place if it was not going to *“benefit us one jot”* (Focus Group B, Participant 6). Constructions like this are pragmatic and outcome-driven in their ethical assessment of animal research procedures. They imply that animal research should represent a direct pipeline to improved human health. Participant 6, in conversation with

Participant 10, appears to create quite a strict binary in terms of acceptable and unacceptable uses of animals in research, which they determine based on the anticipated benefit to humankind:

> *"For me, it would be ethically very difficult if [scientists] are just, say, cutting open an animal just to see whether it's got the same number of ribs as we have. To me, that level of curiosity is wrongdoing... to do it on a live animal to kill them just to find something out. It's totally wrong." (Focus Group B, Participant 6)*

> *"Well, if it's something which isn't gonna advance human health to any great extent, it just seems to be animal suffering for the sake of animal suffering. Same if it's reproducing something which is already known, it's animal suffering for the sake of animal suffering to me. I think in those sort of circumstances you should be able to say there's absolutely no point to this research or no need to actually carry it out because it isn't going to advance human knowledge" (Focus Group B, Participant 10)*

A further example of this kind of 'outcome'-based thinking is how Participant 24 discusses the apportioning of success to a programme of research:

> *"If a drug was brought to market, and then superseded by something else that was cheaper or more effective, is that trial data wasted? The suffering the animals went through, wasted? Or is it based on what the possible outcome could be? Rather than what the actual outcome ends up being?" (Focus Group E, Participant 24)*

Here, Participant 24 appears to imply that for a programme of science to have been considered justifiable, the research should have some *measurable,* tangible benefit to members of society. Some of the criteria they then go on to place on successful research include its capacity to 'increase someone's lifespan' or 'alleviate suffering':

> *"If it had worked you could have had something that was brought to market that, you know,* ***increases the lifespan of someone by 10%*** *or was able to*

> ***alleviate suffering*** *in the third world by making a product that's slightly cheaper than what they currently have to pay for. But then, who decides whether or not that was worth it? The people that benefited from it? Everyone in general? The company that makes it?" (Focus Group E, Participant 24; emphasis added)*

Participant 24 raises the question of *who* should legitimately make such retrospective assessments. They also note some precarity in those circumstances whereby the research is superseded by other research before its translation to human therapy, where its measurable 'benefit' accordingly becomes less clear. This constructs a very positivistic evaluation of research, i.e. by requiring a '10%' increase in life span. Such accounts imply that the acceptability of animal research is tied to the extent to which the programme of work can be assumed 'in the public interest'.

Yet, not all participants displayed such dichotomy in their assessments of the measurable benefits of animal research. Some construct a more tangible role for 'the public' in influencing research design and practice *throughout* rather than as retrospective appraisers. They do this by de-constructing the authority and supremacy of scientific expertise, for example, in the below reflections by Participant 8:

> *"When you're a specialist in something, especially in the scientific field – take general medicine* [for example], *when people have nearly died and they've said they've seen things and then they're resuscitated, some doctors will just outright dismiss it. You can become very narrow-minded when you're a specialist. It's important to have a voice suggesting something else…* [It's important] *that you're opened up to the other possibilities and maybe look at it from a fresh perspective. Even if you're an expert, it doesn't mean that you're correct. It just means you're correct at certain moments based on the learning that you have." (Focus Group B, Participant 8)*

Participant 8 intimates that a 'non-science' view offers a 'fresh perspective' in ethical review by identifying perceived blind spots to the scientific framework. This aligns with the document analysis, which saw lay members as a 'devil's advocate'. The following

exchange (from a different session) sees Participant 17 try to convince Participant 16 that there is something of explicit value in lay/lived expertise that becomes relevant to designing or initiating scientific research projects *beyond* offering a variation of perspective:

> *"You could argue that some testing doesn't need to happen, they could just ask people that care for these animals instead" (Focus Group D, Participant 17)*
>
> *"But then we come back to the problem with why we have science in the first place. As people, we are absolutely rubbish at perceiving the world. So we've tried to develop frameworks and processes to be able to observe things in a way that removes our perspective… We need the framework of science to be able to observe the world in such a way that isn't tainted by our own experience" (Focus Group D, Participant 16)*
>
> *"That is true, but I do think you can put limits on that. I understand [rejecting] the scientific framework because we can* ***miss out on the more visceral nature of existing in that moment.*** *This is why a lot of people that live side-by-side with animals, they have an inherently better understanding and appreciation that other people that don't. And the scientists that were saying, "Oh, look, these rats actually make really good mothers".* ***Anyone that's bred rats could have told you that. You didn't need 500 grand and a six-month study for that.****" (Focus Group D, Participant 17; emphasis added)*
>
> *"You're right" (Focus Group D, Participant 16)*

These distinctions between the perspective of the non-scientist and the specific lens of the 'scientific framework' do two things. Firstly, it stipulates an underlying assumption that both have a legitimate (and distinct) function in scientific decision-making and research design. Secondly, it indicates a diversity of roles/perspectives held by members of society that can inform this process. For example, the two instances above suggest that both felt experiences (i.e. 'dying') and relational ones

(i.e. caring for rats) can improve or diversify scientific knowledge production. This complicates the reflection that participants' (as publics) value lies only in the pragmatic and retrospective assessment of research, but creates a more active role for lay expertise in participatory research.

The perceived avenues for instigating change within the regulatory framework are equally crucial to this storyline. Participants commonly drew upon established democratic, civic, or political channels to exert influence, aiming to *"put political pressure on people" (Focus Group A, Participant 5).* For instance, they cited involvement in public consultation processes akin to those for planning permission, where pertinent details are displayed on *"lamp posts"* and *"if you've got any objections you contact such and such a council" (Focus Group A, Participant 2).* Additionally, they mentioned the use of petitions on platforms such as *"change.org",* where publics can submit *"questions to be eventually submitted to the relevant people" (Focus Group B, Participant 8).* Some also emphasised the significance of engaging with the media to prompt investigations on their behalf *(Focus Group D, Participant 19).* Consequently, by drawing on the possibility of leveraging these political avenues, participants firmly assert the validity of public interest in animal research and its regulatory processes *in general.* However, a very different picture was painted when participants reflected as *individuals* on potential modes of engagement.

5.2.2. Individual capacity for engagement

While the above analysis determines that the practice and regulation of animal research were indeed deemed to be in the public interest, a reluctance to engage more actively with regulatory mechanisms was identified through Storyline A (above). Here, participants declined membership to an AWERB, citing a perceived lack of knowledge. This tendency is further elaborated here, where participants frequently cited their own limited capacity to engage more readily, often expressing feelings of being "*overwhelmed"* by the need to *"keep up"* with social issues (Focus Group F, Participant 25).

Participants, reflecting on the mounting pressures of contemporary life, conveyed their inability to concern themselves with every social issue. For example, when asked at the end of the focus group sessions whether they felt any change in their attitudes towards animal research, many indicated that while they found the session engaging, they were unlikely to delve deeper into the topic afterwards in their own time. This sentiment is encapsulated in the following statement:

> *"I'd be interested to, but I just don't think with everything going on that I'd have the time. It would be nice in an ideal world, obviously. There is so many causes and things going on. It's too much" (Focus Group B, Participant 8)*

The recurring theme of time constraints hindering deeper exploration of the topic permeated the focus group discussions. Participant 13, who, being retired, was one of the only participants who expressed a commitment to actively seek out lay summaries of research in the future, highlighted the luxury of having the time to educate oneself on such matters:

> *"I must say one of my factors is I've got the time to read. You probably don't have time to read* [speaking to another participant]*. You're probably in a full-time job with the family and everything. I'm retired. I have that luxury." (Focus Group C, Participant 13)*

Others, however, held less optimism regarding their likelihood of engaging more actively in the regulation of individual programmes of work:

> *"I wouldn't… I just think in general there's so much information… there's so many day-to-day things that you're dealing with. You know, I can't imagine that I would find the time to really stop and think 'I'm gonna read that', really. Unless… the only sort of time where I've really looked up things like this is when it's directly impacted a loved one's health" (Focus Group D, Participant 20).*

Participant 20, in a way, infers a scenario where controversies surrounding animal research fade from prominence. They do not seem to envision individual research procedures entering their daily thoughts unless prompted by a significant event, such

as if it directly impacts upon their lives. Participant 25, in another focus group, however, describes a more deliberate process of distancing. They envisage a mental disassociation of publics' perceived stakes in the practice of animal research:

> *"I feel like a lot of people turn off because there's so much doom associated with every product we own, so I feel like a lot of people don't want to think about the environmental or moral impacts... It's not like you're consciously thinking, "I'm not gonna think about that." But if you start to think you just immediately feel like a sense of shame because you're like… I thought I was a quote, un-quote "good-ish person". And I'm buying these things because of convenience. But then you think, well, then what do I buy? How do have the time to research everything that I do? And then you kind of like, shut off. Because it's like an overwhelm… I feel like no one does it on purpose per se, but you subconsciously switch off." (Focus Group F, Participant 25)*

These reflections were not entirely surprising, considering the context of the focus groups, which took place in the summer of 2022 amidst a world actively recovering from the impact of Covid-19. British citizens were also grappling with political turmoil, including decisions around Covid-19 management, Brexit, and controversial refugee policies. Additionally, there were looming economic struggles, early signs of a 'cost-of-living crisis,' and pressing environmental and climate challenges, among other social issues mentioned by participants. Commentators have described this phenomenon as "message fatigue" (So et al., 2017) or even "apocalypse fatigue" (Espen Stokes, 2015), exploring societies' sometimes muted response to impending social, scientific, and health issues. This phenomenon is intertwined with, and arguably rooted in, the ever-expanding digitalization of news platforms, which fosters continuous access to such information in an emerging "attention economy" (Ytre-Arne and Moe, 2021). This is not a new reflection of how publics engage with social issues, though it does indicate an important distinction between the constructed stake of 'the public' *in general,* and of publics as *situated individuals.*

5.2.3. Storyline conclusion

This storyline reflects on the interplay of cultural and structural influences on the subjective dimensions of democratic participation in regulatory activities related to animal research. The focus group sessions reveal a common assumption around the democratic and political entitlement to engage in regulatory affairs. This entitlement is grounded in the perceived societal benefit of medical and scientific research ("the public interest") and the belief in the relevance and legitimacy of lay experiences in decision-making processes. However, the actualisation of these rights was often hindered by participants' reflections on their own lived experiences. Participants expressed doubts about their ability to engage as individuals embedded in life spheres and networks already stretched thin, compounded by the overwhelming array of social issues demanding their attention. A distinction emerges between the theoretical concept of "the public interest" and the interests of these specific publics through conversation. The challenges of reconciling these conflicting demands become evident as individuals contemplate more active engagement with regulatory and political systems on issues that do not directly impact their daily lives (i.e. laboratory animal research).

These reflections create a paradox where publics acknowledge their stake in animal research and often express an interest in the matter. Yet, they do not deem involvement in ‘downstream’ activities practicable or desirable. This dilemma encapsulates the **conflict of *being* ‘public’.** This is especially relevant in the context of animal research, where avenues for public engagement typically involve reading individual Non-Technical Summaries on the Home Office website post-license approval, serving as an unpaid lay member on an AWERB, or participating in activism. However, the first two avenues typically witness low participation rates, reinforcing this stance (Taylor et al., 2018, ASC and AWERB Hubs, 2022). Chilvers and Pallett (2018:4) aptly note that many conceptions of public engagement ‘often assume a particular fixed model of democratic engagement’ and envision an ‘external public existing in a natural state waiting to be revealed, engaged, or mobilised by science and democracy’. This section has demonstrated the opposite, and inferred that publics

are co-produced or co-opted (Jasanoff, 2003), shaped not only by the specific contexts that have brought them into existence but also by their capacity to engage within the parameters of the opportunities presented to them.

5.3. Storyline C: A relational assessment of public authority

The previous storyline demonstrated that participants' assessments of their own capacity for engaging in the ethical review of animal research largely depend on their context and lived experiences, for example, the time they feel they can give to a topic of social concern. This suggests that making overly abstract assumptions about the identity of engaged publics or what it means to participate 'well' without considering their lived experience offers only a limited framing of publics' own constructed stake in animal research. Following a similar vein, this storyline establishes that participants' assessments of their own authority are also heavily relational. Their projections of social and political order observably shift depending on the perimeters of the participatory activity discussed and which political actors or institutions they assume they are 'up against'. This storyline demonstrates how participants' sense of power, agency or authority fluctuates as they reference various institutions, such as (a) science, (b) the media (of various kinds), (c) government/politicians, and (d) of commerce. This suggests that the understanding of animal research publics should be framed by the specific terms and platforms through which they are invited to engage rather than by any preconceived notions of their authority.

5.3.1. The social institution of science

In the analysis of the previous storyline (5.2.1.), I reflected on participants' considerations of their involvement in animal research practice within the realm of scientific institutions. I interpreted that participants understood the fundamental aim of science as serving the public interest, thereby benefitting society at large. Participants also discussed the significance of non-scientist (lay) perspectives in shaping scientific endeavours, recognising their ability to offer a "fresh perspective" rooted in lived experience and relationships. Such perspectives were seen to enhance both the

quality of scientific research and its acceptability. In this context, participants discursively positioned themselves as valuable stakeholders in science and its broader pursuits.

5.3.2. The social institution of media

In a different vein, participants frequently advanced 'the media' as a central channel for exerting influence on matters of science and technology. They positioned it as a two-way platform: a source for learning about animal research and a means to influence its conduct. For example, Participant 10 highlights that while they might not have the time to personally delve into details of individual AWERB decisions (as noted in Section 5.2.2.), they regarded the publication of such information and its subsequent evaluation by journalists as crucial components of the democratic process:

> *"The odd thing might come out where an AWERB has gone ahead and said something completely outrageous and allowed an outrageous bit of research, and then a journalist might get involved. In which case, it's a good thing that it's all publicly available." (Focus Group B, Participant 10)*

Other participants shared a similar sentiment, viewing journalists as essential intermediaries for communicating science information to the general public and for bringing noteworthy incidents to the forefront of public attention:

> *"Notice the way most change happens nowadays is that a few people notice something wrong and they stand up and make enough noise… Especially given the age of mass communication that we live in. So having that information out there for people doesn't necessitate that everybody reads it. As long as the ones that read it go "hang on a sec, this is wrong. Let me just jump onto Twitter or phone the newspaper or…" There are ways, then, for that information to circle". (Focus Group D, Participant 17)*

While participants generally acknowledged the importance of media platforms and institutions in shaping public discourse, they also exhibited considerable scepticism

towards them. This scepticism often appeared to stem from concerns about media bias or agendas, as illustrated in the following exchange:

> *"I think that - as everybody's pointed out - it's a relatively niche interest for most people day-to-day. So by the time something becomes public knowledge that is relatively newsworthy you then have the spin that's put on that through the channel that's reported it." (Focus Group B, Participant 9)*

> *"The news only choose to push the agenda that they want anyway. There are lots of stories, huge stories that don't get picked up. So even if there is some huge scandal, if they don't choose to put it out and the headlines are always the same from every paper, every day, then it would just never be known anyway" (Focus Group B, Participant 8)*

This perspective is also succinctly captured in the reflections of Participant 17 regarding the media's utility as an imperfect yet precious source of information:

> *"We don't have the time to go and validate all sources. When you read a news story, you can't literally spend the rest of the day checking out everybody else's version of that. You have to have a source that you say, alright, I can't guarantee it's 100% trustworthy… but it's as close as I can get at this point. For the vast majority of information, that's all we need." (Focus Group D, Participant 17)*

In these instances, participants emphasise their self-aware consumption of information, as seen in Storyline A, underscores their own perceived rationality. This storyline depicts the public as actively engaged consumers of media content, portraying themselves as critical, rational, and reciprocal engagers with media sources.

5.3.3. The social institution of government (specifically, the Home Office)

Participants' tone was different when faced with the spectre of 'the government' as an institution. They construct themselves as much less authoritative than in the previous two examples, often speaking of imagined malpractice or corruption in the regulation of animal research that they characterised as taking place beyond their reach. The key issue appeared to lie in the imagined relationship between *"pharmaceutical companies"* and *"every government in their back pockets" (Focus Group C, Participant 12)*. While some suggested this was a matter of alliance or *"friendship" (Focus Group D, Participant 20),* others spoke of the supposed corruptible nature of the government, which can have the will of such industry players *"forced on them" (Focus Group C, Participant 12)*. Participants here construct a vision of untrustworthy decision-making occurring behind closed doors, shifting the perception of their own 'stake' in animal research governance. For example, Participant 8 *(Focus Group B)* talks of the government seeking to 'humour the general populace' in the Home Office licensing laws rather than working with or on behalf of the general public:

> *"Is it like insider trading* [licensing procedures]? *How independent is it? Even if it's supposedly the law, we know what the law means to a lot of politicians and other people... And, so what does it mean in real terms? Is it just to humour the general populace that something's being done and to stop a bit of fanfare?" (Focus Group B, Participant 8)*

While participants had previously demonstrated a certain level of trust in the decisions of the AWERB, they did not afford this trust to the next step in the regulatory process: project licensing by the Home Office (ASRU). This institution was treated with almost instant suspicion in the majority of focus group sessions, well evidenced in the following exchange:

> *"They are overseen by the Home Office" (Group Moderator)*
>
> *"Yeah. Then there's no point at all. Can't trust it" (Focus Group B, Participant 8)*

"Not with this Home Office anyway." (Focus Group B, Participant 6)

"They all have shares in the companies! They're making profits from it" (Focus Group B, Participant 8)

In demonstrating such reservations, participants tended to draw on several examples where Home Office actions were seen to work against the public interest, including *"sending asylum seekers to Rwanda"*[1]*,* which led Participant 13 *(Focus Group C)* to ask in the light of such policies concerning humans, "*what are they gonna say about animals? Come on."* Another situation was recalled where the Home Office had *"booked a cruise line company that didn't have any ships",* a decision Participant 6 (Focus Group B) assessed as *"putting profit over people and common sense"*[2]*.* However, the most common reference was to COVID-19 decision-making, whereby politicians were seen to have *"vested interests"* and, therefore, had "*made money from the pandemic by selling goods, you know, masks and things that they had shares in" (Focus Group C, Participant 12)*[3]*.* Here, participants construct themselves as having very little authority in light of internal governmental decision-making, which they see as being often made not in their interest and out of their reach (behind closed doors).

5.3.4. The social institution of commercial industry

Another significant factor that influenced participants' perspectives of their own involvement in the ethical review of animal research was the influence of commercial

[1] This participant here was referencing an emerging government plan which at the time of the focus groups was in the early discussion stages, where British asylum seekers would be sent to detention centres in Rwanda for sentencing. For prominent media coverage at the times, see BBC News, April 2022.

[2] It is assumed this participant is talking about a contract being awarded to a company in 2019 by the Department for Transport to assist in post-Brexit Freight crossings, despite the company having never previously run the Channel service. For prominent media coverage at the time, see The Guardian, February 2019.

[3] Participants here are referencing widespread controversy in the media in 2020 regarding COVID-19 contracts for personal protective equipment (PPE) that were awarded to friends of political figures without a competitive tendering process. For prominent media coverage at the time, see: Byline Times, July 2020 (the Byline times being the first to report on this).

industry. Participants questioned the suitability of AWERB members who might, in any capacity, be motivated by financial gain. This scepticism extended to the perceived credibility and legitimacy of the ethical review process if it had been influenced by commercial representatives, with concerns raised about potential corruption, as articulated by Participant 18 in Focus Group D:

> *“if money is involved…* [then] *there's probably corruption as well“ (Focus Group D, Participant 18).*

This view was particularly prominent among all focus group sessions, as is evidenced in the following two excerpts:

> *“Who funds the AWERBs? Are there restrictions on members of the board? Of those that are actually making these decisions? Any restrictions on [members], for instance, having financial interests with research companies and things like that?* ***There's huge scope for corruption there, isn't there?*** *I’m sorry, there is.” (Focus Group D, Participant 16; emphasis added)*

> *“I don't have any reason not to trust them; no more than I would have anybody else. But I do worry about if there is pressure being put on a committee to come up with a specific decision because of financial issues, that’s not good.”* (Focus Group E, Participant 24)

Central to the development of this storyline was the portrayal of commercial interests as a significantly more powerful force in shaping agenda-setting territories compared to participants’ own imagined interests. This depiction carried a sense of decisive certainty, although it was ultimately inferred to be an illegitimate influence on effective ethical review. Participants positioned themselves as having their interests illicitly overshadowed by commercial influences, thereby altering the entire problem definition around the legitimacy of animal research and casting doubt on the integrity of the regulatory process. These deliberations extend well beyond the realm of animal research policy, permeating into the broader construction of human-animal relations:

> *“There has been advancement in cruelty-free food products and products for vegans, vegetarians and such in recent years, so it shows that it's at least becoming a popular move for companies to market it that way. Which means the companies want to make more money off the people who will pay more money for the products, and we buy it because they market it” (Focus Group E, Participant 22)*

In this context, when this participant remarks that "we buy it because they market it," they portray themselves as having significantly less agency than when faced with the first two actors (scientists and the media). This suggests that when the interests of 'the public' are weighed against those of the commercial industry, the power imbalance implies that public considerations are given inferior weighting.

5.3.5. Storyline conclusion

Participants crafted a nuanced understanding of the policy arena, acknowledging the existence of conflicting actors, relationships, and forms of power shaping decision-making processes. This storyline illustrates the relational dynamics influencing assessments of power and authority in agenda-setting, and the democratic activities participants undertake while navigating pathways (and institutions) for engagement. It highlights how the presence of diverse actors and institutions prompts a shift in issue framing, leading to a corresponding change in the conception of the 'public' (and their associated rights), in which participants position themselves. For example, when considering scientific institutions, they constructed publics as valued stakeholders capable of contributing to scientific decision-making. When examining the role of the media, they depicted publics as active (albeit critical) democratic citizens who influence both agenda-setting and policy outcomes. In contrast, in discussions about governing bodies like the Home Office, they saw themselves as inferior to powerful decision-making conducted behind closed doors. Similarly, when discussing commerce, they depicted themselves as powerless consumers whose identity is shaped through the passive act of consumption.

Through the development of this storyline, shifts can be observed in participants' perceived agency depending on how the problem is framed and influenced by the specific dynamics of the engagement setting. This suggests that publics involved in animal research cannot be narrowly defined or easily categorised as fixed entities. Instead, they are continually constructed and reimagined depending on their context. Throughout the conversation, different assessments of freedoms, rights, duties, and responsibilities are expressed, indicating that no single 'rationality of mediation' encompasses all perspectives on "stake" (Mohr, 2011:671). Similarly, this fluidity extends even to individuals within the same 'public' (defined by their participation in the focus group), as their perceived 'stake' shifts with the ebb and flow of conversation. This storyline mirrors the contemplations of constructivist theorists in STS who challenge understandings of democratic agents as fixed entities with fixed 'views' on matters of science and technology (Irwin and Michael, 2003, Irwin, 2006a, Lezaun and Soneryd, 2007, Marres and Lezaun, 2011). Instead, it joins a body of research that suggests that public bestowing of 'trust' varies according to their relationship to actors (Milne et al., 2019, Milne et al., 2021). As Chilvers and Pallett (2018:4) articulated, 'such work sees publics as actively brought into being by the very ways actors seek to know and move them'. Thus, any understanding of publics, their knowledge, and actions cannot be separated from the ways in which they are mediated and configured in specific settings, with particular attention to the presence of different forms of authority. Consequently, participants construct a deeply relational assessment of their own authority and stake in ethical review processes related to animal research.

5.4. *Imaginaries of ethics*: animal research publics are political citizens

In the storylines presented in this chapter, participants position themselves as rational but do not build a role for themselves in the current AWERB structure, often citing a lack of expertise or knowledge (Storyline A). Beyond the AWERB, participants acknowledge a definite stake in the practice of animal research, given it is performed

in the public interest, but reject continuous engagement with the ethics of individual research programmes, citing a lack of time (Storyline B). Participants also viewed themselves as one of several interested parties in the animal research policy arena. This arena's composition reveals continuously shifting iterations of their own perceived category of 'public,' with each variation conferring different levels of authority (Storyline C). Like the policy and guidance documents, participants do not construct a place for 'the public' within the institutional AWERB. However, they do infer the legitimacy of rational publics being able to engage should they want to, and further than this, some participants envisioned a future where they had the time to engage with available information surrounding animal research, something depicted as a prerequisite for acquiring the necessary knowledge to participate effectively in existing democratic systems. This analysis suggests that participants see ideal publics as **engaged** and **active political agents,** utilising existing democratic civic and political forums to 'participate' in animal research regulation.

This imaginary challenges the notion of publics primarily as consumers or passive recipients of science, though elements of these roles are present in the storylines. Conversely, it also rejects joining 'experts' in typically technocratic spaces. Instead, the legitimate channels for participation, as identified through the focus groups, mostly take a traditionally political form: contacting officials, engaging with the media, protesting, signing petitions, and participating in boycotts. Participants perceive barriers to engaging more readily in these forums as both introspective (lack of expertise, knowledge, time, energy) and structural (untrustworthy media, government, or excessive power given to commercial interests). They did not construct an ideal role for themselves in formal ethical review through the AWERB or in knowledge production in the laboratory, despite recognising that public experiences could be potentially helpful in both circumstances. Instead, they appeared to draw from the traditional political imaginaries associated with modern democracies, where publics campaign for change from the outside, seeking to influence decision-making from within (Lyons, 2013). As such, participants did not seem to imagine vast institutional innovations involving micro-publics in specialised ethical decisions. However, it is important also to clarify that this did not indicate disinterest in the topic or rejection of

the principles of deliberative democracy or the value of public experiences/knowledge. Rather, it suggests that something about the AWERB location, composition, or role (as much as could be conveyed in a short focus group session) was not understood to be an evolving or potential site for democratisation or politicisation.

5.4.1. Implications of this imaginary: Animal research ethical review is a site of politics

STS has observed (and significantly influenced) a shift in the rhetoric of legitimacy, where the politicisation of scientific decision-making is portrayed as both justified and forthcoming (known as 'the participatory turn'). This indicates a changing political imagination that connects science with democracy, thus challenging the dominance of 'technocratic expertise' in science governance (Weingart et al., 2021:5). The rationale behind this shift is grounded in the belief that 'in a liberal democracy, policy decisions regarding ethical controversies, including those in research ethics, should incorporate the opinions of its citizens' (Kim et al., 2009 :3). However, this thesis has so far illustrated an apparent 'absence' of public involvement in current ethical review structures (S. 1.3.) and a depiction of publics as 'consumers' of animal research outputs (S. 4.2.4.), again reaffirming the absence of publics within these structures.

The notion of institutional ethical review evolving into a platform for political engagement is intriguing. Considering the findings of the document analysis (Chapter 4), it is evident that this shift would fundamentally redefine the purpose of the AWERB, which is not inherently designed as a political mechanism. Therefore, this shift would warrant careful consideration. Participants' justifications for envisioning ethical review as a platform for political engagement appeared to revolve around principles of 'the public interest' or the 'right' to engage, suggesting a strong connection between greater engagement and a greater sense of democratic legitimacy. Nevertheless, it is equally important to acknowledge that participants expressed a lack of capacity to engage in day-to-day decision-making, given time and energy constraints. This is particularly significant considering Brown's (2015:5) reflections that political practices

require both theoretical acceptance among academics and broader society, as well as active and performed acceptance by situated publics.

This chapter has demonstrated that participants' imaginaries of engaging with ethics are profoundly shaped by how they are permitted to engage with other social and political institutions and structures. For example, while they may not be present in parliament daily, they interact with government structures through existing democratic channels. This highlights the inseparable connection between public engagement and the political environment that shapes the parameters of engagement (Hagendijk and Irwin, 2006, Weingart et al., 2021). This is particularly pertinent for the case of animal research, where publics have been traditionally kept at a distance from key decision-making processes (Lyons, 2013:236). Participants' reluctance to engage individually with the AWERB may be linked to the fact that it does not resonate with their existing understanding or align with their political imaginaries. Therefore, animal research publics are not static or easily mobilised when needed; rather, they are shaped by the participatory practices and political contexts through which they are engaged (Chilvers and Pallett, 2018:1). Similarly, if they are invited to participate in ways that do not resonate with their imaginaries of political/regulatory participation and do not engage, it does not necessarily follow that they are disinterested (Hagendijk and Irwin, 2006, Weingart et al., 2021), as is often argued with the lack of public engagement with the publication of NTSs (Section 1.3.). This chapter has demonstrated that both engagement and non-engagement are much more nuanced than this. These themes are further explored in the subsequent chapter, which examines how publics envision ethical practices within an institutional ethical review body, and are revisited in the final implications chapter of this thesis (S.8.2.).

Chapter Six: Lay Imaginings of the Procedural Routine of an Ethical Review Process

The existence of an ethical review body or system signifies a commitment to the responsible use of animals in scientific and medical research. Individual researchers infer this commitment when submitting their project license proposal to the AWERB, as does the institution if it chooses to support an application in its Home Office submission. Despite this, many argue that research ethics committees remain a 'black box' to most people, making outsider assessments of their suitability difficult (Hedgecoe 2012; Stark 2012). This empirical analysis chapter explores public expectations for the ethical review *process*, including who is involved, under what authority, how knowledge and expertise are employed and negotiated, and how disagreements are ultimately resolved.

Across Europe and increasingly worldwide, animal research ethical review must include a comprehensive HBA, address the principles of the 3Rs, determine the severity of the proposed procedure, and ensure that no 'unnecessary' suffering occurs (Jorgensen et al 2021). However, the literature review of this thesis highlights growing concerns about the suitability of these processes (S. 2.2.2.), emphasising their limited ability to capture wider societal concerns and their tendency to become overly procedural (McLeod and Hartley, 2018, DeGrazia and Beauchamp, 2019, Grimm et al., 2019). Some commentators suggest that this limits the scope of ethical review (Poort et al 2013; Job 2014). Understanding how the ethical review process is enacted within the AWERB is challenging for a few reasons. Firstly, AWERBs are expected to consider proposals from a local perspective, incorporating local knowledge and expertise (Home Office, 2014:89). This allows them to develop and implement their own institutional values, leading to significant differences in practice between different AWERBs (ASC and AWERB Hubs, 2020). Secondly, S.24 of ASPA ('the confidentiality clause') makes it a criminal offence to make public the details of an establishment or researcher conducting animal research, including project license applications (Home Office 2014; Dunn 2021). Where information *is* published more widely, for example,

through NTSs, it is often heavily mediated and only indicates the outcomes of the AWERB review (Taylor et al, 2018). This provides little information about the deliberative process, the concerns raised, or how the AWERB may have resolved them.

The obscurity of ERPs is well commented on in the social sciences. As Hedgecoe (2012) suggests, much existing research on ethics committees focuses on committee decisions, such as their consistency, rather than the decision-making process itself. This often leaves researchers and the public "locked outside" the ethical review process, perceiving decisions as unified and objective, obscuring the inherently messy nature of decision-making (Stark, 2012). There is only one notable exception seeking to understand animal research ethical review in the UK (see: Job, 2014), and no existing research explores how publics' afford legitimacy to these procedures. The document analysis phase of this thesis highlights that AWERB guidance often prioritises the pursuit of a 'moral consensus' (see section 4.3.4.). 'Ethics' in the AWERB is accordingly presented as an institutional commitment to self-criticism rather than a definitive 'activity', with pragmatic and technical consultations around welfare standards directing the tone of the review within the limited time available.

The focus group schedule was designed to explore participants' expectations of what ethics should look like and to identify what they deemed (il/)legitimate due to these discussions (as explained in section 3.2.2.). This chapter aims to contribute to the discourse on how the public and wider society imagine the 'doing' of ethics, an area that remains under-researched (Kelly, 2003, Moore, 2010b, Schweda and Schicktanz, 2010, Schicktanz et al., 2012). Such explorations were interpreted to consider not only participants' expectations for the regulatory process but also how they legitimise forms of argument, justice, and normative judgement (Schicktanz et al, 2012:131). Following a similar structure to the preceding and subsequent chapters, this chapter identifies storylines around the procedural elements of ethical review as its empirical object, asking: **How do participants understand and construct the localised 'doing' of ethics in an ethical review committee?** By doing so, it explores expectations around deliberative processes, theorising the dynamics of ethical decision-making and the

resolution of ethical dilemmas, which provides three distinct storylines to guide this chapter.

6.1. Storyline A: Institutional ‘ethical review’: The jurisdiction of experts

Unlike discussions about their own stake in science or what makes science ethical, participants were much more hesitant and cautious when asked about the ‘doing’ of ethical review. This likely stems from their limited knowledge of the AWERB, its processes, and its structure, which was anticipated from the project’s outset. Participants were not chosen for their knowledge of or familiarity with animal research, meaning they were asked to articulate and, in some cases, defend newly emerging views on an unfamiliar subject in a group setting (S. 3.2.2.). Equally pertinent is that while public engagement activities and ethics committees have emerged in response to similar critiques, they rarely interact (Felt et al., 2009). Ethical dimensions of research have typically been considered the domain of experts, and the wider public is seldom invited in, despite emerging theoretical support for a PEwE (Borry et al., 2004, Moore, 2010a, Schweda and Schicktanz, 2010). Given this, participants were regularly reminded that they were only expected to visualise and explore in a safe space, with no prior knowledge of animal research policy or ethics required. Despite these reassurances, the following storyline reveals a significant unfamiliarity with discussing an imagined ethical review process, making some participants uncomfortable. Consequently, they often deferred to the expertise of professional committees and environments, designating these concerns as the concerns of expert professionals.

6.1.1. Unfamiliarity (and comfortability) with ethical review

Out of all 28 participants, only one suggested they were familiar with the inner functions and intricacies of ERBs, as they remembered using one for their own

university research project (although not an AWERB). Consequently, when asked to imagine such committees, the most common response among participants was uncertainty:

> *"we just don't know what they're saying in them do we… How could we?"* (Focus Group A, Participant 2).

Given these constraints, participants were observed to rely heavily on the provided AWERB definition (See section 3.2.2. or Appendix C) to steer their discussions. For instance, upon receiving the description of AWERB, participants were prompted to contemplate the type of conversations they envisioned occurring in these meetings, and how they perceived committees would review a project proposal. They used the definition as a framework to guide these discussions, often prefacing their remarks with phrases such as the following two examples:

> "*… well looking at the things that they consider **in the description** that you shared, for me it looks like they're*…" (Focus Group A, Participant 3; emphasis added).

> *"Well, **that definition** earlier said its role includes "considering whether that the research has effectively searched alternative methods"* (Focus Group C, Participant 12).

Participants seem to compensate for their perceived lack of essential knowledge by relying heavily on the information provided. Even when participants didn't explicitly cite the definition, its specific wording appeared to influence their own language as they continued discussing the topic. This is shown particularly well in the following two excerpts that mention both 'unnecessary suffering' and 'searching for alternatives' – both used in the provided definition and the animal research policy context more widely.

> *"But they'll be a series of checks and in place to eliminate any **unnecessary suffering** or unnecessary use of animals."* (Focus Group A, Participant 5; emphasis added)

> *“I also think they also need to take it through various stages where they look at the study itself, what suffering it's going to cause, have they* ***searched for alternatives****? and so on”* (Focus Group B, Participant 6; emphasis added)

Moreover, transitioning into the second phase of the focus group sessions, there was a noticeable shift in tone and atmosphere from the moderator's perspective. The conversation appeared more constrained; participants adhered more closely to the topic and were less inclined to veer off into tangents as they had previously. Responses became briefer and pauses grew more prolonged. The light-hearted camaraderie that characterised the session’s first hour was no longer as prevalent, with some participants expressing self-consciousness about discussing 'ethics' in this manner. For example:

> *‘Umm, I'm struggling with these questions myself. I feel like I lack any insight to give you any decent answers, I don't know… I’ve never imagined it, it’s not something I've ever considered so I don't know, sorry.’ (Focus Group B; Participant 7).*

Others demonstrated visible disconcert when discussing ethics in this way, and attempted to deflect the conversations on to others:

> *“Oh god, I don’t know, what does everyone else think?”* (Focus Group C, Participant 13).

> “*Umm, I don't know, I'm just thinking… give me a minute”* (Focus Group D, Participant 19).

Consequently, it became evident that participants felt uneasy grappling with the concept of 'ethical review' in this context, struggling to draw upon their situated, lived, and relational experiences as routes into the conversation, as they had with other topics.

6.1.2. Local ethical review legitimately steered by experts

At regular points during the focus groups, participants adhered to the assumption that expert positions hold particular sway in the institutional ethical review context. This perspective is notably apparent when participants discuss the necessity of 'rationality' for ethical review (as outlined in Section 5.1.2.). For example, participants inferred that experts were more likely to:

> *"be able to break it down so that their decision is correct and rational"* (Focus Group E, Participant 24).

While rationality was considered valuable, it was not the sole imagined value of having professionals sit on such committees; their specialised knowledge, training, and experience were also seen to validate their contributions. The notion of the ethics committee being led by experts was implicit in most focus group discussions, though only sometimes explicitly stated in such terms. Instead, participants outlined the type of knowledge they believed would be beneficial for decision-making. For instance, Participant 16 suggests that:

> *"It has to go beyond just physical health, though, doesn't it? And to meet other enrichments you have to deal with the, sort of, emotional and psychological and other needs as well. You know, make sure that you don't have social animals isolated from each other and things along those lines. You know, feeding them and housing them and medicating them or whatever…"* (Focus Group D, Participant 16)

The ethical expertise highlighted by this participant seems to prioritise a specific technical understanding of individual animal species, encompassing their welfare and care requirements. This type of information is typically held by staff members responsible for animal care, such as animal care technicians. This expertise is commended for its capacity to provide situational and contextual guidance pertinent to individual research proposals, for example, Participant 19 suggests that "what it comes down to" is:

"*the welfare of the animal in a testing situation, if they're being looked after and how…'* (Focus Group D, Participant 19).

In prioritising such expertise, participants also signalled the likelihood that this would also benefit the animals themselves:

> *"I would like to think that from the word go, when the research proposal comes in they should have a look at that, and then every stage in the process, right up to the starting of handling animals they should be involved. In case they spot anything that doesn't meet the remit because they are there to check, to check whether the animals will be OK."* (Focus Group C, Participant 13).

In this extract, participants emphasised the significance of ethical discussions occurring shortly before the research procedure itself, highlighting the use of the AWERB in ensuring individual research animals are cared for (in specific settings, in particular projects). This indicates that there is something specific about the *location* of the AWERB that requires a professionalised form of ethical discourse. Therefore, the institutional nature of the ethical review changes the scope of the ethical discussion that participants consider to take place actually 'in the field', reducing the capacity for exploratory conversations. For example, in the following two examples:

> *"I'd be happy to sort of hand it over to experts and people who are more knowledgeable in the field and sort of place my trust in them, that they're gonna be making the right decisions."* (Focus Group B, Participant 8)

> *"Yeah, because that's their job. Like you say, all these people in this meeting, that is their job. They know what they're talking about if, you know, if I was to walk in, they'd be like 'what are you on about'*." (Focus Group A, Participant 2)

Overall, it was not surprising that participants presumed the AWERB to be led by experts, especially given the definition provided to them, which highlighted the often highly technical nature of the committee's responsibilities. Consequently, participants inferred that they had little to contribute in what they perceived to be a highly

professionalised environment. Participants concluded that, given the AWERB's specific location within institutions, it was probable that these committees were led by experts. Consequently, they questioned the precise contribution they could offer in such a professionalised setting.

6.1.3. Storyline conclusion: Institutional ethical review the jurisdiction of experts

This storyline implies that participants placed value on **expertise** in the execution of an institutional ethical review. In doing so, two key observations become pertinent. Firstly, it indicates that participants were notably hesitant when discussing ethics in this context, often visibly struggling to respond to questions aimed at prompting them to envision such a process. This level of hesitation was less pronounced when addressing other lines of questioning, such as their perceptions of scientific institutions or their personal beliefs. In many respects, I had anticipated this hesitation given the inherent power dynamics inferred through conversations about highly technical ethical review processes, as well as the fact that ethical review in the AWERB is currently a ‘black box’ to the majority of us outside the AWERB. However, the second observation is that when confronted with these obscure committees, participants seemed more inclined to attribute scientific and animal-care expertise as the primary 'rational' influence in the local decision-making process, struggling to envision a role for themselves. The geography of the local AWERB seemed to disenfranchise participants, leaving them unable to adequately conceptualise the ethics process, as it operated outside of a sphere of deliberation they were comfortable and familiar with or could envision.

The obscure nature of an institutional ethical review committee that participants have no prior experience with, or access to, therefore legitimated distinctly local and situational expertise, which operated in close proximity to the procedures themselves and was understood to benefit the animals. This left participants uncertain about the potential contribution of lay expertise. Felt et al. (2009:357) highlight in their historical commentary on the emergence of ethics committees in Europe, that the prevailing

reason for the lack of public involvement in institutional ethics is the widespread assumption that 'validity and quality of an ethical argument do not stem from its support by public opinion, but from the sophistication of the argument itself' (see also: Crosthwaite, 1995). Given that ethics committees are commonly rooted in this notion, it was not surprising that participants were, therefore, unfamiliar (and, at times, uncomfortable) with the institutions, regulations, or agendas surrounding ethical review, as there are few examples through history of trying to inform publics on their running. This aligns with broader perceptions of a utilitarian approach, where expert 'rationality' is inherently considered more sophisticated and legitimate than the "moral sentiments" of laypeople (Felt et al., 2009). Such an ordering of intellectual hierarchies (between lay and expert) is constructed through this storyline, therefore, as participants reflected on the likelihood that techno-scientific expertise would predominantly steer institutional ethical review. This is particularly pertinent given the common reflection among participants that, in the confines of the focus group, they had been able to engage in a rational and fruitful debate (see section 5.2.1.). However, it is conceivable that the provision of the definition inadvertently restricted the discussion by introducing technical language, which may have disenfranchised participants from envisioning lay contributions. It is equally possible that while participants see value in lay expertise on ethics in general, something about the institutional ethical review process specifically accentuated this sense of disempowerment in ethical review as a regulatory process.

6.2. Storyline B: Ethical review as detached from institutional, financial and national interest

The previous storyline highlighted the link between the ‘localness’ of the AWERB and the expectation of expertise as a prerequisite for participation. The following storyline delves deeper into this characterisation, exploring participants' overt scepticism regarding the localisation of ethical review in this way. Participants seemed to find the *locality* of ethical review (within the institutions themselves) specifically directive for

how they began to comprehend the ethical review process that they would likely entail. Particular concerns emerged around the imagined scope and scale of the discussion because of the *physical* geography of the AWERB, as well as the *conceptual* geography. Both are explored in the below subsections. In doing so, participants are observed prioritising **impartiality** as a prerequisite principle to 'doing' ethics in a manner that earns trust from those outside the committee.

6.2.1. Limitations of the physical geography of the AWERB

Although the preceding storyline indicated that participants believed institutional ethical review was best handled by experts, they did express concerns about the potential drawbacks of ethical review being held inside the institutions that were set to benefit from it. As noted in the introductory chapter (Section 1.2.), conflicts of interest are not something AWERB guidance offers strict advice over; instead, leaving it to individual AWERBs to develop their own responses to such incidents. In certain instances, this elicited almost immediate scepticism, as seen in the following exchange:

> "*So it's an in house committee?"*
> *"Does that change your view?"* (Moderator)
> "*Ahh, I see that now in the definition. Yeah, I'm highly sceptical then.* (Focus Group E, Participant 22)
> *Absolutely"* (Focus Group E, Participant 21)

Reasons expressed for such immediate cynicism varied, although a common inference appeared to be the propensity for an organisation to prioritise their own interests over other relevant interests, such as the interests of the animals involved:

> *"Being a little bit sceptical, my immediate reaction is, how impartial are they? Because it read there* [in the definition] *that the committees are formed by the organisations. So yeah, my initial thought is how focused on the welfare of the animals are they rather than the goals of the organisation?"* (Focus Group A, Participant 3)

Such indications seemed to imply that institutions might be incapable of adequately reflecting on their own actions, as one participant scoffed:

> "*You know, the whole 'we've investigated ourselves and found we did nothing wrong' line springs to mind…"* (Focus Group D, Participant 17).

Several comments of this nature arose at this juncture in the focus group. For instance, one participant remarked, "*it just sounds like a pen pushing exercise… so it appears something is there"* (Focus Group A, Participant 4), while another questioned whether it just comes down to the fact that organisations *"have got to be seen to be doing something"* from the outside (Focus Group A, Participant 2). Participant 8 reflected, *"what does it mean in real term*s?" the committee's operations could simply be to "*humour the general populace that somethings being done to stop a bit of fanfare"* (Focus Group B, Participant 8). These reflections seem to stem from the perceived partiality of the AWERB, well reflected by Participant 27:

> *"It should have to be independent, otherwise, how's it going to work? So, it all sounds like a quango to me"* (Focus Group F, Participant 27)

Others proposed that not all AWERB members necessarily prioritise the organisation's overall benefit as a principle, but rather, they might have personal pressures to consider during discussions. For instance, they might feel discouraged from pursuing certain lines of questioning or being too 'disruptive' due to alliances with colleagues or concerns about their own careers:

> *"If you're an employee and potentially seen as a disruptive member of one of these committees, what does that do for your future prospects? So, it'd be great to have a balance of people from the company being involved, but equally you want those independent people … some without connections to the organisation who's likely to benefit from having the research carried out."* (Focus Group A, Participant 3)

In these accounts, therefore, participants are observed expressing concern regarding the influence of the social dynamics of the AWERB, suggesting that this risk of

potentially becoming "*unfavourable within the company"* is sufficient to ensure compliance for the benefit of the company, out of fear of receiving unfavourable opinions themselves in the future, or upsetting colleagues (Focus Group B, Participant 8). For other participants, they raised the prospect of financial incentives, for example, obtaining research funding grants or producing a marketable product may have an illegitimate influence on decision-making. For example, Participant 19 discusses how this, for them, complicates the conceptualisation of "best interest":

> *"Well, I immediately think about… is money involved? So if they use, breed or supply research animals then they are being paid to do that? Is it in their "best interest" to provide the animals for a research project because they'll get more money if they do that? That's my concern. If money is involved then unfortunately, there's probably corruption as well. That's just my sceptical view of the world anyway."* (Focus Group D, Participant 19)

As such, the localisation of ethical review also raised questions over the proximity of 'ethics' to those with financial gain in decision-making, stating that:

> *"it wouldn't be in their interest to veto peoples work"* (Focus Group E, Participant 26)

Others, were more concerned not with the biases of the members themselves, but pressures from higher up in the organisations, where *"pressure"* might be placed on the committee in general:

> *"to come up with a specific decision because of financial issues"* (Focus Group E, Participant 24)

As such, a common theme throughout all focus groups was participants' tendency to emphasise the importance of the committee's independence, impartiality, and ability to address conflicts of interest in order to freely challenge research proposals. They expressed concerns that the described proximity of the AWERB to institutional influences might hinder its ability to meet these criteria. While participants did not

explicitly offer directions/criteria for how they expected the ethical review process to unfold, they did emphasise the envisioned importance of the principle of objectivity.

However, as has already been noted concerning the almost disrupting presence that the definition of the AWERB had on the focus group conversation, it must also be worth considering the same for the presence of these once very technical words such as ‘conflict of interest’ and ‘impartiality’ that have since entered into common parlance. It *could,* therefore, be that participants are drawing on pre-existing terminology associated with ethical principles. However, this is all still relevant in the construction of ‘imaginaries’, which are heavily influenced by cultural tropes around us.

6.2.2. Limitations of the conceptual geography of the AWERB

The first half of this storyline focused particularly on the imagined scope of the ethical review that takes place *inside* institutions, and the resultant scepticism (associated with a perceived lack of objectivity). The following section examines concerns around the imagined scale of such a review, touching upon envisioned limitations in conducting reviews near the end of the approval process and addressing the broader national or global ethical dimensions of animal use in science.

I touched on the first of the two points in the above discussion around ‘scope’; however, there is a slight nuance observable in those that displayed criticism about the anticipated membership of an AWERB (and the conflicts of interests here) and those that demonstrated hesitancy over the timing of the ethical review process. Of course, it is worth considering that laboratory animal researchers should theoretically be able to approach their AWERB at any point with questions or for advice. But of the AWERBs function to carry out an interim license review, one participant suggests there's merit in having them evaluate research "ideas" when they're still in their conceptual stage rather than waiting until they're fully formed proposals, or in some cases, have already secured prestigious funding:

> *“I would like to, kind of, think that from the word go, when the research idea comes that they [the AWERB] should have a look at that, and every stage in*

the process right up to the starting of handling animals they should be involved. In case they spot anything" (Focus Group C, Participant 13)

Some participants expressed their desire for ethical review to be both ongoing (*"once the research is taking place"*) and retrospective (*"seeing if they're sticking to what was agreed")* (Focus Group A, Participant 4). This late-stage involvement prompts participants to question the *"agency the committee really has"* when influential researchers or organisations are invested in the success of a research proposal (Focus Group E, Participant 22).

The second aspect regarding scale discussed in this storyline delves into participants' concerns about the global dimension of animal research. Many participants recognised that the UK (and EU) have the most rigorous regulatory systems. In acknowledgement of this, participants voiced concerns about addressing animal research on a global scale, citing logistical and cultural difficulties:

"*Yeah, I think there's a lot of governance. Certainly, in the UK or in the European Union anyway, where anything that involves medical research in testing animals is strictly controlled. And there are places in the world where that that isn't true, but you can't… we can't really, you know, enforce our will on them. But the in the Western world where this happens, there are multiple layers of governance that that try to reduce the suffering I would imagine"* (Focus Group E, Participant 24)

Moreover, many participants expressed genuine concerns about the ethical implications of regulating animal research on an international scale, which they suggested that AWERBs were currently ill-equipped to address. Several participants commented on this aspect, arguing:

"what about the risk of outsourcing of these operations from our county to those where they don't have the same regulations" (Focus Group D, Participant 17),

> *"I'd like to know how much research which was stopped by these committees went abroad?"* (Focus Group F, Participant 27).

Of the risk of animal research being pushed abroad, participants were explicitly concerned about the likelihood that research could be taken abroad that would not be permitted in the UK, and researchers would *"just get away with it"* (Focus Group E, Participant 22). One participant even appeared to indicate that all imports should pass through an animal research ethical review committee before use in the UK:

> *"Actually, I guess I'm interested in… with AWERBs, they obviously have oversight in the UK, so how does it work with something that's been tested abroad? Do they still have any interaction with researchers, with authorising it to be sold or used here?"* (Focus Group B, Participant 8)

These extracts suggest that these broader questions, such as those regarding the outsourcing of research or the implications of benefiting from ethically questionable research, are unlikely to be addressed within the current AWERB framework. Rather AWERBs are expected to be limited by the institutional (and national) borders in which they operate, which does not address all relevant ethical dilemmas concerning these focus group participants. In this view, individual committees may struggle to make impartial decisions – considered a critical pursuit by participants - if they prioritise their nation's or institution's interests over broader ethical considerations.

6.2.3. Storyline conclusion: Ethical review as detached from institutional, financial and national interest

This storyline suggests a recurring theme concerning the importance of impartial ethical review. Participants consistently express scepticism regarding the scale and scope of ethics within a localised AWERB context. They anticipate potential impartiality issues arising when organisational goals or financial interests take precedence or when social dynamics and power hierarchies within the institution

influence decisions, such as career aspirations. Similar concerns arise on a larger scale when considering agenda-setting at a national level, where localised ethics do not consider the broader global context. Participants expressed confusion about where such considerations would be addressed if not within the ethical review body. This analysis does not necessarily imply that participants suggest that localised ethics is an illegitimate influence on research design but instead that there are clear boundaries as to what is perceived as possible in a distinctly ‘local’ ethical review.

In conclusion, participants regarded the specific geography of the AWERB (referring to its location, scope, and scale) with scepticism, taking into account the social and cultural implications that may manifest within the ethical review process. This suggests that there is great value in exploring how the dynamics of place and space impact the possible futures that emerge in critical decision-making moments (Milne, 2012). For example, in this context, decision-making is seen to be constrained by ‘place’ regarding the motivations, procedures, and results of ethical reviews, as well as the broader global implications of those outcomes. Still, it is worth considering that impartiality serves as a fundamental principle in various regulatory systems and is also pivotal in decision-making across different social domains, such as business ethics in human resource management (Hedgecoe, 2012). This suggests that such concepts might have permeated common parlance, with participants potentially drawing upon this existing knowledge when grappling with the topic. Yet, when considered within its broader context, the locality and composition of institutional ethical review bodies and their influence on committee structure and deliberation processes and outcomes have received a significant amount of academic criticism (Orlans, 1993, De Vries and Forsberg, 2002, Sengupta and Lo, 2003, Dyer, 2004, Russell, 2012, Candilis et al., 2012, Silverman et al., 2017). In this body of research, scholars are critical of the impact of membership and institutional affiliations on decision-making. Some researchers have even suggested the existence of a bias towards approving animal experiments, which they argue undermines the overall objectivity and effectiveness of the oversight system or at least neglects the principle of 'Replacement'. It is, therefore, especially pertinent that this storyline suggests the cruciality of impartiality and objectivity in the practice of ethics. Thus, regardless of its origins, the prevalence of

such language and assumptions in cultural repertoires around the public *Imaginaries of Ethics* suggests its significance in a wider PewE.

6.3. Storyline C: Ethical review as a courtroom

The third and final storyline in this section explores participants' tendency to compare the general administrative proceedings in criminal justice systems (such as those seen in civil or criminal courtrooms) to the process of institutional ethical review. This section examines the principles deemed necessary for a 'fair' process as discussed in the focus groups, highlighting three core principles: the need for due process (described here as a court 'ritual' where participating parties generally know what to expect), the provision of expert evidence to inform decisions (and the weight it is given in decision-making), and transparency (clear and accurate information about the basis and process of decision-making, shared both internally and externally). These principles are each explored in turn below. The analysis presented within this storyline suggests that ethical review can, and should, draw substantially from the norms and conventions of a courtroom, thereby claiming moral and social legitimacy and ‘fairness’.

6.3.1. Following a due process

Participants intriguingly drew parallels between the ritualistic elements of a courtroom setting and certain imagined aspects of an institutional ethical review decision-making system. They noted the expectation of the presence of a ‘defendant’ (the researcher) and an expert witness (typically a veterinarian or animal technician with expertise in animal care and use). These comparisons underscored a structured process where evidence is presented systematically, allowing for cross-examination, before a final decision is made by an impartial judge, with the input of a disinterested jury. This analysis suggests that participants attributed a sense of social value to these procedural elements, associating them with fairness and a just outcome, as evidenced in the below extract:

> *“I sort of imagine it being like a trial in a way … where obviously there's someone who submits this proposal with the outline of what they're planning to do and why they're planning to do it.... They’re asked what are the risks? What are the benefits? And I mean, I guess they just discuss how like legit the proposal is and whether experts agree. Then a decision is made”* (Focus Group F, Participant 25)

Here, Participant 25 alludes to common imaginaries of a courtroom trial: the defendant who ‘submits this proposal’, their right to respond to questions around ‘risks’ and ‘benefits’ (rather than based wholly on their paper application), where experts are asked to corroborate the proposal, and where finally, ‘a decision is made’. Their emphasis on this procedure as "obvious" suggests a shared understanding of courtroom dynamics. Similar references to ritualistic processes of decision-making were evident in other participants' comparisons, such as Participant 9's likening to other democratic administrative procedures:

> *“I envisage it a little like the all-party parliamentary groups where you have a cross party representatives and you have a judge figure, that maybe has the questions that that are debated and discussed. And I would imagine over time a lot of the questions that you asked to consider would actually be fairly standard. In terms of morals, procedure, legality, that kind of thing”* (Focus Group B, Participant 9)

Many participants emphasised the pivotal role of a judge-like figure in their analogies, perceiving this figure as holding the authority to determine the credibility of researchers and maintain order amidst conflicting opinions:

> *“there needs to be security and some sort of law and order there with all the opposing groups and, sort of, heated tempers. ”* (Focus Group B, Participant 8).

Participants expected the judge to be both authoritative and decisive, evaluating the ‘defendants’ credibility solely based on the evidence presented during the

proceedings, without relying on any prior knowledge. They also anticipated the judge to uphold procedural fairness by allowing all involved parties to express their views before making an impartial decision. This can be seen, for instance, in Participant 6's depiction of an ethical review undertaken with a strong and impartial mediator:

> *"There might need to be some sort of control like a judge who says right, you get 2 minutes to speak – stop, and so there needs to be someone regulating it"* (Focus Group B, Participant 6).

Participants also expressed the expectation that researchers would need to physically attend the ethical review and make themselves available to answer questions:

> *"'I'd expect the people - the researchers that are coming in with the proposed study to have done their homework… To be able to present the case as you would in a courtroom"* (Focus Group B, Participant 6)

It was this latter point that Participant 27 deemed it particularly important to ensure *"due process"* (Focus Group F, Participant 27). According to participants, due process was most appropriate for ensuring that decisions *"will be fair, as far as possible, taking view of the whole project"* (Focus Group D, Participant 18). Participants' reference to "due process" in this context is particularly intriguing because the term, commonly used in criminal and legal contexts, signifies adherence to established principles and procedures for resolving legal matters.

6.3.2. The importance of transparency

A further reference to courtroom-like procedures came by way of referencing the principle of transparency, not only within a laboratory setting as previous research has suggested a pre-curser to public acceptance (Ipsos MORI, 2013), but also, as expressed by Participant 3, the decision-making process:

> *"it would be nice if there was a way or was a way if you wanted to access them that you could find out a bit about the decision making process behind that piece of research"* (Focus Group A, Participant 3).

Transparency, according to participants, held the potential to "*drive out bad practice"* (Focus Group B, Participant 10), and allow decisions to be scrutinised in public forums while facilitating peer review to enhance accountability measures (Focus Group E, Participant 24). Furthermore, during the conclusion of the focus group sessions, when participants were invited to pose questions to an AWERB if given the opportunity (refer to Appendix C for the focus group schedule), many expressed that they'd need to know much more about the operation of the AWERB before they could come to a final judgement on their suitability. For instance, Participant 9 sought clarification on:

> *"What happens now? What happens from here? What's the next part of the process?"* (Focus Group B, Participant 9).

Some participants sought clarification on the decision-making process itself, requesting insight into "*the rationale behind the decisions made,"* describing it as *"a black box currently"* (Focus Group E, Participant 24). Others emphasised the need for transparency in the outcomes rather than just the procedures. For instance, Participant 13 (Focus Group C), Participant 11 (Focus Group C), and Participant 27 (Focus Group E) expressed interest in knowing the proportion of procedures rejected by the AWERB. These instances underscore the importance of transparency in process and outcome as a fundamental aspect of conferring authority to processes, individuals, or institutions perceived to serve the public interest. According to Pietrzykowski (2021), transparency in process is another indispensable condition of courtroom legitimacy. Transparency ensures clarity for the parties involved as to what is expected of them, as well as for broader society, in knowing that the court system is fair. Accordingly, transparency is closely linked with demonstrating that decisions are based on 'considerations of legality, justice, and public interest', and that they are *verifiable*, a precondition to 'the modern doctrine of fair procedure' (*Ibid.*:532). Equally, transparency is considered highly important in garnering public trust around animal

research (Pound and Blaug, 2016). However, this has tended to focus on transparency in the laboratory rather than in regulatory processes or ethical review (Russell, 2012).

6.3.3. The role of expert evidence

The remainder of this storyline delves deeper into how participants continued to draw on the metaphor of criminal justice proceedings to conceptualise the role of expert evidence in ethical decision-making. In quotes like the following, participants indicate the necessity of multiple forms of evidence, ensuring that all stakeholders have the chance to present their professional opinions and arguments to be taken into account:

> *"I mean, what we should do is similar to what we do in court. We can have a jury of… a pool of experts, a percent of industry and professionals, and also public opinion in that. So, in this body, then, in a way, we could have diverse background of views on certain project, how it's supposed to go. Then it's not going to be one sided. It will be fair, as far as possible on the whole view of the project. Like court."* (Focus Group D, Participant 18)

Participant 18 in the excerpt above perceives this envisioned array of evidence provided as 'fair'… 'like court'. Moreover, this account also presumes that those making the final 'decision' are not likely to be the individuals who are presenting any of this expert evidence. Similarly, the subsequent account further underscores this separation between the "jury" and the "experts":

> *"Well, really this these things should implement a set of rules and guidelines, not making it up... this is why I said it's like a jury because the jury has to weigh up the evidence. Based on what the expert witnesses say and the expert witnesses have to be filtered by the lawyers to make sure that you have due process… And if you get an expert witness who's like an animal rights person who's dead against it, well, they're not going to take a balanced view of the evidence, so they're not in the jury, they're a witness*" (Focus Group F, Participant 27)

The latter statement is intriguing because it suggests a distinct role for an ‘animal rights person’, advocating for their position as an "expert witness" rather than a member of the decision-making "jury." This implies that the jury is presumed to be entirely impartial, enabling them to base their decisions on the collective evidence presented by various experts.

6.3.4. Storyline conclusion: Ethical review as a courtroom

The construction of this storyline identifies three essential factors that participants intimated were crucial for the affordance of legitimacy and trust: adherence to some pre-established ‘due process’, transparency in decision-making processes, and the expectation of a requirement of an impartial decision-maker to consider a variety of expert evidence. Through this storyline, participants were interpreted as considering these factors to ensure ‘fairness’ in/of the ERP and appear to readily draw from pre-held characterisations of the UK criminal justice court system when doing so. As noted throughout this analysis, it is likely that participants drew from cultural frames of reference when seeking to contribute to the discussion of the AWERB, which they had not previously heard of. However, drawing upon this frame of reference when negotiating a fair decision-making process infers much about their perceptions of the legitimacy of the process. Several academics writing on decision/procedure consistency have commented on the similarities between research ethical review and the justice system. Still, none of these examples considers how it may have come to influence what publics expect of institutional ethical review processes to assign them legitimacy (Hirson et al., 2002, Angell et al., 2007, Klitzmann, 2014, Schneider, 2015, Friesen et al., 2019).

Of due process, Zedner and Stuckenberg (2019) suggest that this is considered an essential tenet for both the authority and legitimacy of legal systems, making its absence in the ERP potentially even ‘stranger’ to outside observers. Transparency in the procedure is crucial for ensuring clarity for the parties involved as to what is expected of them, as well as for wider society, in knowing what it means to have something judged in a court of law and what it means to receive ‘justice’ in such

circumstances. Accordingly, transparency is closely linked with demonstrating that decisions are based on 'considerations of legality, justice, and public interest', and that they are *verifiable*, a precondition to 'the modern doctrine of fair procedure' (Pietrzykowski, 2021:529). Equally, transparency is considered highly important in garnering public trust around animal research (Pound and Blaug, 2016). However, this has tended to focus on transparency in the laboratory rather than on regulatory processes or ethical review (Russell, 2012). It is of particular interest that participants jointly inferred that the experts' role was akin to the provision of expert testimonies, as within the AWERB, expertise plays a distinctly more decisive role, where chairs themselves are often scientists from within the institution (Schuppli and Fraser, 2007, Tjärnström et al., 2018). As such, expertise, by design, plays a different role altogether. Expert witnesses are often called upon to make observations/inferences based on their training, status and experience in a courtroom. However, 'it is, nevertheless, the jury or judge and not the expert that is the ultimate fact finder' (Ward, 2018:1494). Therefore, the storyline as ethical review likening the process of a courtroom becomes even more significant considering that AWERB processes (stipulated through its policy and guidance) mark a very different procedure to judgement-making in a courtroom, if not least because the process is significantly less transparent and there is a blurring of the 'jury' and the expert (in a sense, the experts *are* the jury).

6.4. *Imaginaries of ethics*: Local ethical review in pursuit of a 'just' procedure

The three storylines developed through this chapter have demonstrated that participants visibly struggled to respond to prompts designed to encourage conversation around the 'doing' of ethics, particularly a distinctly **local** process (sitting within the organisations that use, breed and supply research animals). Where they did respond (and perhaps *precisely because* they had struggled to respond in the first place), participants suggested that they felt out of depth in such discussions and proceeded to paint the picture of a process led by experts (Storyline A). They also

tended to draw limits around what they considered legitimate interests and influences directing deliberations, indicating that independence was non-negotiable in a trustworthy ethical review process (Storyline B). In doing so, the analysis demonstrated their struggle with the specific geography of the AWERB, which countered their vision of 'doing ethics' impartially. These two storylines begin to indicate certain criteria for an ethical review, including a process that is (a) expert-guided (but not expert-decisive) and (b) impartial. These become even more illuminating alongside the final storyline, whereby participants used the metaphor of a courtroom and a criminal trial to guide their constructions of a *legitimate* decision-making process, drawing on the need for a 'fair trial' (Storyline C). All three storylines create a certain image of 'fairness' drawing from the cultural imaginary of a 'fair trial': driven by the presentation of (multiple) expert evidence, decision-making entirely impartially (non-biased), and largely formulaic (demonstrating transparency/dependability of process).

While participants initially lacked clear prescriptive ideas about how the 'doing' of ethics should emerge, a collective imaginary of ethics begins to surface when these storylines are considered together. This imaginary is grounded in a substantive characterisation of 'justice' that focuses on the procedure of interactions. In other words, participants projected 'fairness' onto the deliberative method used to reach a decision rather than relying on general assurances of expertise, objectivity, or consistent moral codes. Their reference to contemporary legal systems is particularly important in constructing this imaginary, as every citizen's right to a fair trial is a fundamental legal principle and cornerstone to the justice system, crucial in fostering public trust. To clarify, this analysis does not suggest that participants advocate for a highly bureaucratic, rule-based system of ethical review, nor do they imply a need for algorithmic decision-making (as is not the case in courtrooms). However, when the public is excluded from these spaces, knowing how decision-making occurs and ensuring the reliability of these processes becomes crucial for establishing trust.

6.4.1. Implications of this imaginary: Towards a procedural ethics?

This thesis has shed light on the prevailing opacity surrounding the internal workings of institutional ethical review, portraying them as 'black boxes' with their internal mechanisms largely opaque to external scrutiny (Stark, 2012, Hedgecoe, 2020). Previous studies have predominantly examined decision consistency rather than delving into the decision-making process (Black et al., 1995, Busby and Dolk, 1995, Lux et al., 2000). The document analysis chapter implied an imaginary of ethics driven by the pursuit of an expert consensus, an assertion of animal ethical review already prevalent in examinations of their process (Poort et al., 2013). Critics contend that this emphasis often prioritises technical and pragmatic considerations over complex ethical nuances, neglecting the personal and political dynamics among committee members (Hansen et al., 2012; Ideland, 2009; Schuppli & Fraser, 2007). Also this emphasis often prioritises technical and pragmatic considerations over complex ethical nuances, neglecting the personal and political dynamics among committee members (Ideland, 2009, Hansen et al., 2012). Despite this diversity, decisions are typically presented as objective pronouncements of ethicality, obscuring the intricate discussions and dynamics that shape them in practice (Stark, 2012).

Through the exploration of three storylines, this chapter has delineated a public imaginary of ethics centred on the pursuit of a ‘just’ procedure. An important implication of this exploration is the potential relevance of concepts such as 'procedural' justice or 'ideal speech' from classic sociological perspectives on decision-making. Procedural justice is rooted in legal theory and influenced by John Rawls' seminal work "The Theory of Justice" (Rawls, 1971). According to this perspective, the ‘legitimacy’ of a decision rests on the adherence to ‘just’ procedural standards rather than specific substantive criteria. Previous socio-legal studies have highlighted the crucial link between procedural justice and public perceptions of institutional legitimacy (Taylor, 2008). Pietrzykoski (2021) has notably advocated adapting the general theory of procedural justice to the ethical review of animal research. While he does not explicitly address 'the public', he argues that maintaining standards of impartiality, a fair hearing, appeal, transparency, and benevolence are crucial for ensuring fairness in administrative and quasi-administrative procedures. The concept

of the 'ideal speech scenario', as articulated by philosopher Jurgen Habermas, complements the idea of procedural justice by highlighting the essential conditions for authentic, inclusive, and rational discourse (Weber, 2008). The approach challenges the legitimacy of expert consensus (strategic rationality) emphasising instead the importance of dialogue in establishing shared perspectives before decision-making (communicative rationality) (Habermas, 1986). Understanding conceptualisations of decision-making such as these is particularly relevant because expert consensus and procedural/deliberative justice offer different lenses to understand regulatory systems. As inferred from the documents, the former hinges on shared agreement among experts and relies heavily on expert knowledge. Conversely, approaches centred on the latter prioritise the fairness and impartiality of decision-making processes over the specific outcomes they produce. The imaginary of ethics as the following of ‘just’ procedure suggests some legitimacy in these latter approaches that could inform the ‘doing’ of ethics.

Moreno (1995) highlights the importance of defining the overarching purpose of ethics committees in society and evaluating their legitimate impact on scientific practices, meaning we need to better *define* institutional ethics and the role it plays in regulatory systems. This assertion draws attention to the relevance of Sheila Jasanoff’s (2005b) work on the status of scientific expertise in legal contexts. However, she cautions that while their interests often align, they are not always wholly congruent, suggesting that claims of expertise in either domain cannot be seamlessly transferred to the other setting. Therefore, Jasanoff (2005b) argues for a balanced inquiry into the nature, similarities, and differences between the domains of law and science. This perspective could be extended to the realm of institutional ethical review settings to provide clarity on when deference to each institution's authority is warranted. The next chapter further explores these complex questions, aiming to conceptualise participants' perceptions of ethical science production.

Chapter Seven: Lay Imaginings of Producing Ethical Science

This final empirical chapter explores the notion of fostering 'ethical science', grounded in the fundamental theoretical premise of this thesis: that idealised visions of the future of animal research can be gleaned from discussions on its appropriate regulation. Given the significant research gap in this area, particularly concerning public comprehension and involvement with the 'ethics industry' and ethical decision-making, this dimension of PEwE holds vital importance. Therefore, the primary focus of this chapter is to gain deeper insight into how participants perceive both the concept of 'ethics' and the realisation of 'ethical science'.

The literature review explored the concept of ‘boundary-work’, an STS concept which examines how scientists, science advocates, and scientific institutions use rhetorical strategies to define the boundaries of what is considered legitimate within the realm of science (Section 2.2.2.) *Ethical* boundary work, building upon this concept (See: Wainwright et al. (2006)) delineates the parameters defining what is deemed 'ethical' and what implications are involved in establishing these boundaries (Job, 2014:166). The AWERB, as demonstrated throughout this thesis, represents a critical juncture in the regulatory process where ethics and science intersect, positioning research conducted under its authorisation as possessing a heightened ethical status, akin to peer-reviewed research (a concept often tied to boundary work, see: Howard (2012)). This elevated status arises from the acknowledgement that proposals have undergone scrutiny by experts who are well-versed in applying ethical frameworks such as the 3Rs and HBA. While this represents boundary work in theory, it is also evident in practice, as demonstrated by the document analysis chapter (S. 4.4.3.). Here, 'ethical science' is equated with high-quality, rigorously conducted science, aligning with industry norms and standards. This alignment is significant, given that research suggests the influential role of documents and guidelines in shaping perceptions of ethics within scientific communities (S. 2.2.2.).

Still, it is essential to recognise the growing body of literature suggesting that ethical considerations in animal research extend far beyond formal frameworks and review processes. Authors such as Friese et al. (2019, Ashall (2022), Kirk and Myelnikov (2022) and Rowe and Frewer (2005) have highlighted how notions of 'good' ethics permeate everyday interactions and decision-making within research settings. This concept is echoed in the endorsement of a 'culture of care', a principle that AWERBs are tasked with fostering within their institutions. Interestingly, the document analysis chapter revealed that discussions of 'ethics' were most prominent in the context of promoting this culture of care, rather than within the review process itself (S. 4.3.2.). This chapter delves into the intricate relationship between formal ethical considerations (such as the HBA, 3Rs, and peer review) and informal aspects like the culture of care. Specifically, it explores how these elements contribute to the realisation of ‘ethical science’. Using the established structure from previous empirical chapters, it presents three storylines to envision potential futures for ethical practices in animal research: ***How do publics envision achieving ‘ethical science’?*** Through this exploration, the chapter aims to evaluate the perceived role of AWERBs in advancing such ethical standards.

7.1. Storyline A: ‘Ethical’ science exists on a continuum

In the first half of the focus groups (after discussing their own objects), participants were guided to consider whether animal research could ever be deemed 'ethical' (see Appendix C for focus group schedule). Across all six focus group sessions, participants demonstrated significant difficulty in delineating clear boundaries between 'ethical' and 'unethical' science. This challenge may have stemmed from the unfamiliarity of the topic, or that they were struggling to see what I ‘wanted’ as a researcher (and they desired to please me). These are both common occurrences of research of this kind (Colucci, 2007, Macnaghten, 2021, Peterson, 2022), and was also particularly expected on the topic of ‘ethics’ (Felt et al., 2009, Felt and Fochler, 2010). However, their struggle also hints at profound complexity within the *Imaginaries*

of Ethics surrounding scientific research and the role of animal experimentation within it. This storyline unpacks this, first by examining participants' scepticism that animal research can ever be fully 'ethical' and then by exploring the possibility that this does not necessarily suggest that participants felt that animal research was wholly unacceptable. This storyline suggests that ethical science exists on a continuum, blurring the lines between what can be strictly defined as 'un/ethical' actions.

7.1.1. Animal research is not strictly ethical

From the outset of the focus groups, participants demonstrated varying levels of acceptance regarding the use of animal models in research. Some entered the discussions with well-developed positions, while others were uncertain about their stance. When faced with whether animal research can be ethical and what this might entail (discussed in the third portion of the focus groups, see Appendix C), participants generally resisted defining criteria for ethical science. Some described it as '*a tough question'* (Focus Group C, Participant 12), *'hard to imagine'* (Focus Group C, Participant 14), and admitted *'struggling'* to answer (Focus Group D, Participant 17). However, after extended discussion and deliberation, many focus groups appeared to arrive at a conclusion that, based on their prior understanding of ethics, conducting research on live animals could not strictly be categorised as 'ethical', according to their pre-held understandings of what 'ethics' means. The below four extracts evidence this well:

> *"I think the only way could be so the only way it could be ethical is if you were able to get to the point in science where there is no sort of like active brain? I guess? So I guess it's sort of like no soul, no feeling and it is just something like that. Than maybe then?"* (Focus Group B, Participant 8)

> *"I don't feel very qualified scientifically. But ethically? I can answer in a heartbeat. Ethically, no, I wouldn't agree at all 100% with any animal experimentation."* (Focus Group B, Participant 9)

> *"I think that animal research always deals with sorrow and pain, so I wonder how this could be ethical. It's very hard to imagine."* (Focus Group C, Participant 14).

> *"So, well, in the short term, I don't think we can get away from the animal testing. But if in the future some miracle we can get away from it and it can become ethical research. I think eventually we can get to the ethical research or science, yeah."* (Focus Group D, Participant 18)

These perspectives around what can and cannot be considered *ethical* appear to align with a deontological or rights-based approach to ethics in a sense. Animals are understood to have rights, and humans have a responsibility to respect and protect these rights. Therefore, using animals for human gain does not fit into this pre-held conceptualisation of what is 'ethical'.

> *"We should all be the same, but we're all living things. We all have feelings. It should be equal. You wouldn't treat an animal and human being differently - like we treat our cat as part of the family, you know"* (Focus Group A, Participant 2)

> *"it should be equal for humans as well as with animals. So also considering their point of views because they are also part of the ecosystem and it's important to consider everything, from start to end, so every hierarchy, every animal should be considered - it's important, they should be treated equally."* (Focus Group A, Participant 1)

Further elaborations for struggling to categorise any animal research as 'ethical' are manifold and broad, with some participants stating an innate level of immorality in that invariably, animal research *'always deals with sorrow and pain'* (Focus Group C, Participant 14), and that animals cannot give their consent to be used in this way for human gain:

> *"But at what cost does that [knowledge] come, you know. Is there another way to find this? As we just mentioned, humans can obviously give consent to when*

they take part in something like this. An animal doesn't, you know? So how can we say it is [ethical]" (Focus Group D, Participant 20)

While some questioned the pragmatic utility of the practice, which they reflected does not always translate to human therapy or that some research programmes may *'go nowhere at all'* :

"But the thing is, think how much money wasted on ineffective animal models and so they developed a... well, look how many times you've seen in the news 'ohh and animal testing says this drug is so effective'. And then when it goes to human trials, it does not. And that happens over and over and over again and that's hundreds of millions, if not billions of dollars in pounds and whatnot being spent every year trying to develop products that emerge from animal testing that goes nowhere." (Focus Group D, Participant 16)

"At the moment they have to use things like, you know, rodents, which are genetically similar but not the same. So you could have a trial of a drug that showed great efficacy in the early stages when they're trialing it on certain types of mice and then it moves to human trials and then it's wasted, because we are so much more complex… it doesn't work" (Focus Group E, Participant 24)

Interestingly, however, no participant was unwilling to discuss and negotiate their positions when questioned by others. For example, in Focus Group C, Participant 11, who was initially very firm in their view that animal experimentation was *'wrong'* due to experiences living *'next to an animal testing facility'*, noted: *'so, unfortunately, I'm just against animal testing, period'.* To this, a fellow participant questioned:

"You know Covid came upon us? It was such a big surprise and then we were offered the vaccines amazingly soon. If we knew that it was tested on mice for such a quick result but it could be offered across the world and save a million lives, would it not make any difference?" (Focus Group C, Participant 13)

To this, Participant 11 conceded that:

> *"I agree with you. I mean, even if I dislike testing if like millions of people would be involved, I might consider it as, like, a solution, even if it's still unethical"* (Focus Group C, Participant 11)

Here, Participant 11's view is developed to be more nuanced than their initial indication that they were firmly against the practice, suggesting a statement that participants found animal research to be 'unethical' is wholly too simplistic. In line with the approach towards *Imaginaries of Ethics*, the focus is not solely on the consensus itself, but on the journey taken to achieve it. While some discussions led to a consensus that animal research is not strictly a binarily 'ethical' activity in itself, the more illuminating aspect is the negotiation process participants engaged in to reach this conclusion and their elaborations *after* apparently reaching it.

7.1.2. Not all animal research is unacceptable

The supposition provided above (Focus Group C, Participant 11) that a programme of animal research could be both socially beneficial and 'still unethical' was not unusual. This perhaps elaborates on why participants were resistant to establishing criteria for 'ethical science.' This storyline has suggested so far that their understanding of an 'ethical' course of action may be inherently incompatible with using animals in research. Yet, several participants proceed to add conditions to this, for example, Participant 9's reflections in Focus Group B illustrate a similar negotiation of the boundaries between ethical and acceptable:

> *"Ethically, I can answer in a heartbeat. Ethically, no, I wouldn't agree at all 100% with any animal experimentation. That's largely as a vegan - that's my position on eating animals. I also recognise completely that if we had scientists on the on the discussion here, they could explain quite eloquently that to get to the point where we're at with computer modelling, etc. historically we would have had to have gone through animal testing. Now, I'm not saying I agree with that, but I understand that viewpoint. So it's that chicken and egg thing. I would love*

> *to live in a society, a world, in historical terms, where it has never happened and never would. But I understand that to get to the point where we are morally and ethically and scientifically... We maybe had to [use animals in research]"* (Focus Group B, Participant 9)

Participant 9 demonstrates an active negotiation between what is conceptually 'ethical', what is deemed socially acceptable, and what is personally accepted. In doing so, they acknowledged the multiple layers of their own views, ultimately distinguishing between what is 'ethical' and what is necessary or practicable. This aligns with the previously explored view where Participant 11 suggested that animal research could be a 'solution', even if 'unethical' (Focus Group C, Participant 11).

Both of these participants (Participant 9 and Participant 11), despite entering the focus groups with the perceptibly strongest pre-formed positions against the use of animals in research, demonstrated clear moral pluralism when questioned about their stance. Therefore, their statements cannot be simply equated with traditional abolitionist viewpoints, which typically position the practice as cruel and unnecessary regardless of its purpose or benefits. Yet, had they been required to tick a box on their stance on the ethicality of animal research (for example in a survey) these elaborations would not have been made clear. Furthermore, some went even further and reflected on the ethical implications of *not* conducting the research:

> *"at the moment* [conducting research without causing harm] *is not possible. So we have to accept what's possible? Surely? Or move away from the doing the research in the first place, and then is that ethical? To stop the research? I don't think so"* (Focus Group D, Participant 24)

The language used by Participant 24 suggests that while they may not view the use of animals in research as strictly ethical, binary assessments become more complex when considering the broader context. Others indicated that even if the practice is not inherently ethical, it can be more ethical when research is '*done in a gentler way'* (Focus Group A, Participant 2), or where animal models are *'at least well looked after'* (Focus Group A, Participant 4). This suggests that categorising participants into a

single ethical position may be misguided. It also indicates that what these participants consider ethical cannot be pre-defined, as their judgments depend heavily on the procedure's specifics and the wider societal implications of the research.

7.1.3. Storyline conclusion: Ethical science exists on a continuum

This storyline reveals many participants' hesitance to define what constitutes 'ethical science' and 'ethical animal research'. Several interpretations can be drawn from this, ranging from attributing it to specific research design issues or the wording of the focus group prompt, which may have implied a negative connotation regarding the ethics of animal research ('Can animal research ever be ethical? What would that look like?'). Alternatively, it could suggest that participants do not perceive the practice as an inherently 'ethical' pursuit, according to their existing *imaginaries of ethics*, even if they acknowledge its value. Thus, they might distinguish between 'ethicality' and social/personal 'acceptability'. In other words, participants may still view animal research as an undesirable part of modern life while recognising its significance in curing diseases, enhancing human well-being, prolonging life, and advancing science. Hence, in some cases, they may find the practice 'acceptable'. Another potential explanation is that participants lacked firm criteria for 'ethical science' from the outset, and the question assumed they could provide such criteria, resulting in an inability to answer in a binary manner. Instead, participants were more forthcoming with criteria for unethical science, drawing from a readily available cultural repertoire when participants drew from past examples of animal research atrocities to help locate themselves in the animal research debate (as explored in section 7.2.1.).

Participants' reflections on 'ethical science' seem to be influenced by a combination of factors, reflecting the constructed nature of the focus group environment and the experimental nature of this projects intention to engage the public on institutional ethics. Each perspective highlights fluidity and adaptability in assessing what constitutes 'right' or 'wrong' in scientific research and practice. This suggests that ethics in animal research is not easily categorised but exists along a continuum, with participants demonstrating the capacity for nuanced situational reflections. These

ethical considerations echo findings in existing research on public attitudes towards animal research. For instance, Ormandy and Schuppli (2014) note that lay publics make complex ethical judgments, considering factors such as species, sentience, and the purpose of research. This ambivalence is consistent with recent qualitative studies where participants express appreciation for the importance of animal research while harbouring concerns about its ethical implications (Crudgington, 2019, McGlacken, 2021b). Participants' reluctance to establish precise criteria for ethical conduct implies a perception of ethics as fluid and contextually contingent rather than rigidly defined.

7.2. Storyline B: ‘Ethical’ science is hungry

Defining ‘ethics’ within the context of the institutional ethical review of animal research, as has been shown through these data chapters so far, is inherently complex given the interplay of scientific progress, human health, and societal values involved. This complexity was evident through the challenge that focus group participants seemed to face when articulating what constitutes both 'ethical' and ‘acceptable’ in animal research. This storyline reflects on the tendency of participants to further conceptualise ‘ethical science’ as an ongoing process pursuing continual improvement and which cannot necessarily be satisfied by any pre-defined criteria, consensus or framework. It does so by highlighting participants’ tendency to envision the imminent and ultimate replacement of animal models in science and to evaluate the process of ethical review based on the extent to which they assist or hinder this primary ‘goal’. This perspective is reinforced by focus group discussions on the value of measures like increased transparency and varied expertise within the AWERB, which participants praise for their potential to facilitate the transition to non-animal methods.

7.2.1. Future thinking: the phasing out of animal research

Throughout the focus group discussions, it became evident that many participants did not anticipate the long term sustainability of animal research. They envisioned a near

future where the use of animals in research would no longer be standard practice. This storyline suggests that a significant driver of this shift will be technological advancements leading to more scientific alternatives. Many participants used reference points from the cultural repertoire (such as news, film, and social media) when discussing the possibility of moving away from animal methods and towards the use of alternatives. Some characterised this this shift as both inevitable and imminent, as illustrated in the following extract:

> *"We're actually, from what I know, we're not that far from it. There's the development of what's called organ on chips. It's synthetic. So you can… it has various different arrays upon the chip and you introduce the compound to it and it reacts in a certain way and that… again… that's based on current animal testing but it's what is going to be used to eventually phase out animal testing. Because, in reality, animal testing isn't the most effective form of testing because you can't have an exact animal model that matches the human system, you know. So the development of these artificial systems is really being pushed… it's even being pushed by people that are in animal research because they don't wanna be doing what they're doing in reality. They'd much rather see a shift away from it themselves as well." (*Focus Group D, Participant 16)
>
> *"I think long term it's inevitable then. I do think that we will move away from it then."* (Focus Group D, Participant 17)
>
> "*Yes, definitely long term."* (Focus Group D, Participant 16)

However, a nuance in language use was perceptible between those expressing overt certainty or expectation (as seen in the above example) and those conveying a hopeful aspiration for such an outcome in an ideal world. Participants frequently employed emotive language when expressing their hopes for a future where animals are no longer used in research contexts. For example, Participant 14 reflected that:

> *"I would love to think about the future where there is no more testing because we've have so much progress in technology"* (Focus Group C),

In a similar vein, Participant 13 described full replacement as a *"lovely idea",* expressing *"hope"* that "*it will come to that in the next 100 years"* (Focus Group C). The significance of this nuance lies in the fact that for some, like Participant 17, the realisation of such a future would be *"nice to think about*" but upon reflection, they admitted not knowing *"know realistically how far we are off from that"* (Focus Group D).

These reflections, tinged with a sense of longing, envision an ideal future with advanced replacement technologies and non-animal methods. While these accounts suggest a range of perspectives on the perceived inevitability of 'phasing-out' animal research methods, a common thread running through these discussions is the optimism participants express towards science and the development of scientific and technological methods in addressing the 'problem' of animal research. For example, Participant 26's account below suggests that technology can 'save us':

> *"Well, obviously I'm not a scientist, but I've heard stories of people trying to use stem cells and recreating skin of human skin stuff and testing on that instead as a way to avoid using animals… I would love to believe that* ***technology could save us*** *and there's a way that no animals have to be tested at all, and there could be a way that stem cells and whatever could help us massively. I was very strong feeling that future generations are gonna look at how we treated animals with absolute distain, as well as the way we eat meat."* (Focus Group F, Participant 26; emphasis added)

These examples call for more science, more expertise, and more technological advancements to successfully achieve this objective. This sentiment appears to be further echoed in the above examples where participants call upon replacement discourse. For example, references to "organ-on-a-chip" (Focus Group D, Participant 16), use of "human skin tissue" (Focus Group C, Participant 11) and "stem cell research" (Focus Group F, Participant 26) demonstrate the recognition of these

technologies as crucial replacements championed by both scientific communities and publics alike. The development of this storyline is particularly encouraging of science's capacity to drive the adoption of non-animal methods as the 'saviour'. However, barriers to such progress are evident in the entanglement of these pursuits with profit-driven goals. Participant 17, for example, reflects on the cost implications, noting that '… its just when though isn't it… it's not going to be cheap' (Focus Group D). Other participants similarly lament the lack of commercial motivation to pursue these objectives:

> *"I think technology would be capable of doing that [eradicating animal research] within the next 10 maybe 15 years, if not 5 years. But whether or not the pharmaceutical companies are interested in investing, in going down that road I don't know"* (Focus Group F, Participant 28)

Participants expressed concern about a systemic lack of will to achieve the goal. Again, this echoes the sentiments from Chapter 5 (the 'stake' of the public), where participants discussed their perceived stake in the AWERB in the face of commercial actors (Section 5.3.4). This concern is closely tied to the comparative cost and ease of using animals, which is ultimately presented as leading to a stagnation of progress.

7.2.2. Pathways to progression: Overcoming obstacles and grasping opportunities

During the focus group sessions, I introduced participants to the concept of the AWERB via a definition provided and asked them to think about who may sit on an AWERB (Appendix C). Participants expressed support for decisions to be made by groups that encompassed a range of backgrounds and experiences. For example, some participants endorsed the notion of having *'groups that have representation from different areas'* (Focus Group A, Participant 3) or with a *'wide range of people'* (Focus Group A, Participant 5) with *'at least mixed life experience'* (Focus Group B, Participant 6).

Participants tended, therefore, to view the variation of membership positively. For some, this was because of the increased likelihood that there would be a member who might *'be more emotive about those situations and will be less pressured to make beneficial decisions for an institution*' (Focus Group D, Participant 16). For others, it meant a better chance that: *"there's gonna be somebody there who's gonna, you know, challenge and and accept and criticise people who have been a bit too gung ho with their ideologies."* (Focus Group A, Participant 5).

Lack of diversity in perspectives (especially among those driven by institutional success, profits, or reputation) was, on the other hand, depicted as hijacking the more authentic guiding principle of integrating 'mixed life experiences' (Focus Group B, Participant 6). This diversity was seen as invigorating and vital in preventing the formation of ethical silos. For instance, this perspective is illustrated by Participant 9's reflections on how an emphasis on 'costs' would obstruct the achievement of the more genuine objective of complete replacement:

> *"I hadn't considered the implication of cost, which [Participant 8] mentioned. It's a big factor. I'm naïve - I naively assumed that... I imagined that companies for good reason would want to go down a non-animal route, but if cost is a big factor... Yeah, that could massively change things to be honest." (*Focus Group B, Participant 9)

Several participants raised similar concerns regarding the prioritisation of '*expenses'* (Focus Group B, Participant 8), the influence of *'capitalism'* (Focus Group D, Participant 17), and the institutional *'bottom line'* (Ibid). For example, the following exchange:

> *"It shouldn't just be the people with the money who are going to make the profits. It should be an ordinary group of different mixed people with all like this really a forum of different views to you're never gonna reach an agreement, but to try and have that balanced input and try and reach the middle ground."* (Focus Group B, Participant 8)

> *"And it shouldn't just be the researchers. Or, or even the university or institute that they're working at. It should be an independent group, with at least mixed life experience."* (Focus Group B, Participant 6)

These factors could lead to a natural inclination towards the '*cheapest way of testing'* often assumed to involve animal models (Focus Group C, Participant 12). It is, of course, worth noting that ASPA (Home Office, 2014) specifies that if a viable alternative to animal use exists, projects are unlikely to be granted licenses to use animal models unless there is sufficient scientific justification. While institutions cannot opt for animal models solely based on cost considerations, they do have agency in investing time, effort, and training into Replacement and Reduction initiatives, as well as supporting researchers utilising novel research techniques. Ultimately, the value of diverse membership on an AWERB is primarily assessed by its ability to drive ongoing progression, rather than being inherently ethical.

In another vein, participants in many of the focus group sessions collectively emphasised the importance of increasing transparency in animal research. However, in these discussions, transparency was also framed as valuable because increased openness would necessitate greater caution and deliberation from decision-makers. This point is exemplified in the following excerpt from Focus Group Discussion D:

> *"I think part of transparency within the scientific community is developing the linguistic ability to be able to share information with everyone rather than just, uh, sort of a select core of other scientists. Without universal transmission transparency is nothing, it achieves nothing."* (Focus Group D, Participant 16).

In these examples, participants seem to view transparency as synonymous with societal recognition of institutional responsibility and accountability to the wider community regarding their practices and conduct:

> *"If they had to be 100% upfront with us of exactly what has happened, then that*

> *would drive out bad practice. Basically, you know, the people who are trying to skimp by just doing cheap tests and not worrying about consequences when they could spend a little more and, you know, do it in a way which doesn't harm any animals"* (Focus Group B, Participant 10)

Participant 5's reflections, particularly on AWERBs in general, aptly highlight the need for continual development:

> '*how do they progress and how do they make things better as they go on? I mean, I'm sure they've got, say, set statutory rules to follow, but how do they update those? And make things make things better as they go"* (Focus Group A, Participant 5).

As such, through the development of this storyline, 'transparency' emerges as a tool for ensuring ongoing and consistent progress, preventing stagnation and silos, and guarding against the hijacking of decision-making by forces perceived as illegitimate in the genuine ethical discourse on the use of animals in research. It suggests that the value of transparency is perhaps tied to what it can *achieve* rather than evoking trust in and of itself as an ethical principle. Consequently, the emphasis placed by participants on vehicles for progression toward complete replacement, or more ethical practices, such as transparency and diverse viewpoints in AWERB discussions, infers a tendency to treat with suspicion any mechanisms seen to maintain the status quo (leading to ethical silos).

7.2.3. Storyline conclusion: Ethical science is "hungry"

Overall, this storyline reflects participants' assumptions about a future where animal research procedures are naturally phased out due to scientific and technological advancements eliminating the need for animals in research. In the above analysis, participants are depicted as being generally optimistic about the future reduction in animal research numbers moving forward. They characterised science and industry and its research and innovation pursuits as catalysts for this anticipated shift. This favourable view of science and technology contrasts with common characterisations

of public attitudes towards science, often portraying them as 'anti-science' or misinformed (Smallman, 2018, Smallman, 2019). Participants also viewed favourably the idea of diversifying perspectives in ethical reviews to promote ethical science, and increasing transparency in the industry to deepen accountability. They saw these efforts as contributing to a continually progressive and improving landscape of 'ethical' science. However, they also expressed the harbouring of doubts about those forces they felt would stagnate progression: namely, the commercial interests of the institutions overseeing the research, who may gain from the status quo. In short, participants were contingently optimistic about the general scientific endeavour and the future for phasing out animal research, although they saw the commercial industry as a diverting force. Underlying these sentiments seems to be a general emphasis on continual progression, particularly well captured by a term borrowed from Atuk (2021), “hungry ethics”, essentially envisioning institutional ethics that cannot be easily satisfied but is always in pursuit of improvement.

The favourability of publics for a commitment to phasing out animal research is not a new observation, with a YouGov poll published in 2021 suggesting that 68% of respondents (based in UK) support both backing extra government spending and committing to ‘phasing out’ by 2040 (Animal Free Research UK, 2023). Equally, McGlacken (2021a:202) highlights a similar phenomenon wherein participants express hope for full replacement as a prerequisite for their continued acceptance. McGlacken frames this as a mechanism through which the public 'cope' with the acceptance of scientific animal research. This storyline, therefore, builds upon these reflections suggesting that acceptability is contingent upon broader assumptions about the trajectory of science, as well as assurances regarding the welfare of animals used. Equally, the inference that participants are here observed championing scientific and technological research contradicts pervasive imaginaries of publics as un/misinformed (McGlacken and Hobson- West, 2022) or as anti-science (de Saille, 2015, Raman et al., 2017) in the animal research ‘debate’. Equally, this storyline's attention to the potential outcomes of transparency initiatives is particularly intriguing in light of existing academic discourse. For example, McLeod and Hobson-West (2016) analyse how different stakeholder groups in the UK perceive transparency, with animal protection

groups framing it as a counter to secrecy, the research community as a counter to misinformation, and government/research funders viewing it as a counter to public mistrust. However, none of these conceptualisations fully capture the perspectives of the focus group participants, who more readily associate transparency with continued progress. This storyline complicates existing notions that increased transparency will automatically enhance public confidence in conducting and regulating animal research, as suggested by Varga et al. (2010:500).

The conceptualisation of ethics as ‘hungry’ challenges conventional notions that ethics can be the static application of predefined rules and principles to individual research proposals (i.e. see: Latimer and Puig de la Bellacasa, 2013). Instead, it portrays ethics as an ongoing process of negotiation, continually striving for improvement and ethical advancement. This perspective offers insight into participants' reluctance to establish rigid criteria around their concept of 'ethical science' and underscores the adaptable and dynamic approach in discussing it.

7.3. Storyline C: ‘Ethical’ science is situated and relational

Throughout much of this chapter, participants have been interpreted as emphasising that 'ethical science' is a continuous journey rather than a fixed destination (tied to any fixed criteria). Therefore, the creation of 'ethical science' appears to be inherently linked to the ethical review process itself rather than solely to its outcomes. Building on the previous two, this storyline explores how empathy, relationships, and interconnectedness seemingly play pivotal roles in this journey. It explores how participants expressed their pre-conceived idea that ‘ethics’ is a personal concept, recognising its contextual nature, shaped by historical, political, and social factors. This emphasises the social aspect of 'ethical science', depicting it as deeply embedded in relational and contextual dynamics. Consequently, participants envision 'ethical science' as inseparable from these connections, actively seeking confirmation of these moments in the ethical review process. Participants demonstrate this by

seeking clarity on the individuals tasked with conducting the ethical review, as well as the settings and conditions in which the review takes place, and the resulting impacts on the review process.

7.3.1. Personifying the ethical reflector

In the second part of the focus group sessions, participants were questioned about the possibility of animal research being ethical and were prompted to speculate on what this would entail in practice. Many responses seemed to interpret the question as implying the existence of predefined, objective criteria that were detached from individual moral perspectives. In several instances, participants challenged this assumption, indicating that they perceived 'ethics' as a much more subjective concept. For example, one participant remarked, *'…but, its subjective, isn't it*?' (Focus Group A, participant 4), while others described it as an *'individual thing'* a '*judgement related call'* (Focus Group D, Participant 17), or as a representation of each persons '*moral compass'* (Focus Group E, participant 23). These statements suggest that participants found the concept of 'ethical science' as an attainable goal somewhat 'strange' and did not readily consider it a tangible reality. For example, Participant 21 ponders:

> *'Seeing things as 'ethical' is a very personal… Is there even an objective ethics? I don't know? Is there any way to do ethical science like that? Who comes up with ethical science? Who decides? And is everyone going to agree that it is ethical science? Is that possible?'* (Focus Group E, Participant 21).

Participants seemed more eager to negotiate the concept of ethics as a collection of individual and embodied perspectives and belief systems. An 'objective' ethical standard didn't seem to align with this preconceived conceptualisation, even where it was accepted that there was likely agreed consensus around the highest ethical standards. As such, participants inferred that the existence of the AWERB would likely act as a critical safeguard ensuring that research is only conducted where these standards are met, for example:

> *"Yeah, I mean, I would say. In 99.999% of the cases you know these AWERBs are gonna be doing good work. So and you know ensuring that research is being done in the best possible way."* (Focus Group B, Participant 10)

Most participants were, however, *"pleased that they exist" (*Focus Group B, Participant 10), and found it *"quite reassuring"* (Focus Group C, Participant 23).

Critically, however, a large portion of participants tended to focus their reflections on individual imagined AWERB members rather than the whole AWERB as an objective entity. For example, some participants suggested that they empathise with the imagined committee member, contemplating the challenges and emotional toll of the role:

> *"Obviously, people have to make these decisions, otherwise nothing will ever get done. But I feel like the responsibility would be overwhelming"* (Focus Group F, Participant 26).

Participants also steered the conversation towards the level of care they hoped would be exhibited by AWERB members, again returning to this rather wistful tone that could be read when participants were envisioning a future without animal research (Section 7.2.1.):

> *"Is there anyone there who actually cares? In these committees? You don't know, right?"* (Focus Group 5, Participant 21)

> *"That's it. You just don't know. Do you have… You'd be speculating, but you'd like to think so"* (Focus Group 5, Participant 23)

> *"I doubt it. I'd wish so, it should be that way, but I doubt it."* (Focus Group E, Participant 21)

Equally, towards the end of the focus group sessions, participants were given the opportunity to pose questions to an AWERB if they had the chance. This provided them with a platform to seek clarification on any aspects of the committees they still

felt uncertain about or to address any concerns that arose during the discussion. Once more, participants used the opportunity to reflect on the topic of 'care' within AWERB negotiations, with Participant 21 asking the AWERB:

> *"Do you care about animals? How can you prove to me that you care about animals? Through your own actions in your own life."* (Focus Group E, Participant 21)

In a similar vein, another participant indicated that their question would probably revolve around how AWERB members care for their own pets and how they apply this perspective when considering housing conditions, asking:

> *'would you be happy for them to be in these conditions?'* (Focus Group F, Participant 26)

Some participants were curious about individual regrets that others may have regarding previous committee decisions, asking questions like *"how did that make them feel?"* (Focus Group E, Participant 22). This once more aims to humanise the AWERB member, emphasising their emotions and experiences during specific moments of the review process rather than posing broader questions about the AWERB as a structure as a whole. For example, the concept of caring was negotiated by the following two participants:

> *"I just think it's done in a gentler way - when they say it's more ethical. That's what just brings to my mind automatically without having to think about it. They've done it in a kinder way*." (Focus Group A, Participant 2)

> *"I remember seeing a job advert once and it was for somebody that works in one of the big pharmaceutical companies that test on animals. And it was for, I guess, like a sort of lab person and the way that they marketed the job was, you know, like, 'do you love animals' and like, they were trying to promote it as a job for somebody that did actually like animals. So I would like to think that*

they're sort of well looked after when they're in between whatever it is that they're testing on them." (Focus Group A, Participant 4)

Participants' discussion of "care" encompasses an imagined concern for animals more broadly, as well as the active practice of caring in the laboratory for the animals. Consequently, there is an expectation for AWERB members to exhibit both forms of caring. As such, in negotiating 'good practice' in ethical reviews, they are frequently observed personifying the individual staff involved detailing hopes for how they will deal with situations and calling on their humanity when exploring possibilities for improvement.

7.3.2. Contextualising the ethical reflection

As was discussed in Chapter 5 (which reflects on the *stake* of 'the public'), the six focus group sessions were all held in the wake of the Covid-19 pandemic. The fact that the sessions took place online served as a reminder of all that had changed and the new ways of communicating necessitated by social distancing and lockdowns. While the previous reference to the pandemic (Section 5.3.3.) focused on its impacts on public-governmental (/Home Office) relationships, this subsection examines its lasting effects on the public-science relationship during this monumental time. For some, this period shone a positive spotlight on the capabilities and future possibilities of science. For example, some participants reflected on the rapid development of a vaccine as *'amazingly soon'* (Focus Group C, Participant 13 and Participant 14). Others felt that given the unusual global focus to produce a 'cure', the pandemic may have resulted in a shift of usual ethical standards given the enormity of its impacts. This can be read through the following two examples:

"Sometimes we just really need to try something and it could be the most ground-breaking thing that cures every disease in the world… That's what has happened with the COVID epidemic, where drugs have been tried that wouldn't

have been allowed to be tried before. Simply because we were so desperate." (Focus Group B, Participant 6)

"You know, Covid came upon us. It was such a big surprise. And then we were offered the vaccines pretty soon. I think I'm amazingly soon. If we knew that the Covid vaccine was tested on mice and then we got a quick result and it's going to be offered across the world and save 1,000,000 lives, it... Would it not make any difference? It would make a difference to me." (Focus Group C, Participant 13)

In such examples, there is a subtle inference that what can be regarded as 'ethical' at any one time is heavily dependent on the wider context of the decision-making. This changing nature of what can be considered ethical at any time, space or context was a particularly common theme, specifically referring to historical examples of animal research controversies. Participants reflected on their own feelings of animal research *and* its ethical review processes often by drawing on a series of historical examples that have cemented themselves into the public consciousness of the topic. For example:

"I've also seen… I've also seen pictures of chimpanzees that are strapped in cages who are forced to smoke cigarettes by, you know, Philip Morris and I can't even imagine why they thought that that was worthwhile, but that's something that's, you know, utterly shameful. Uh, it's just hard to imagine why, you know, that kind of suffering was imposed on them." (Focus Group E, Participant 24)

It is assumed that Participant 24 is here referencing (and perhaps confusing) both the 'Smoking Beagles' controversy (1975, UK), and the 'Silver Spring Monkeys' controversy (1981, USA). The importance of these images was also reflected by Participant 27:

"Well, medication and cosmetics I think badly of because we heard about cosmetic issues and then there were the smoking beagles back in… whenever

it was, the 70s? When the tobacco industry was.. well, it was infamous. And then we've seen… we've seen rats having stuff dropped in their eyes because they're quite, quite sensitive" (Focus Group F, Participant 27).

Both incidents pertain to images released by anti-vivisectionist groups in the 1970s and 1980s, aiming to expose the perceived 'evil' in animal research laboratories and rally support for their cause. Numerous authors have discussed these images' enduring impact and persistence in the public imagination, noting their recurrent mention in British animal research debates (Myelnikov, 2019, Brown, 2012). They prompted public scrutiny of the medical benefits of the research projects and the care and compassion with which such procedures are conducted. The continued significance of these debates in public debates demonstrates their impact, but also, as shown here, how they impact public trust in the regulatory systems imagined to have permitted such research to go ahead. For example, a number of participants also drew on the example of Thalidomide as an example of a further time the regulatory system did not produce ethical science:

"Thalidomide in Britain. It was designed to reduce the effects of morning sickness and obviously hadn't been tested fully… I mean, even if you weren't doing animal testing and human testing, you at least try it on some on a small group, you know. You don't just dump it on the whole population like they did. The system failed us" (Focus Group F, Participant 27).

The core reflection drawing these together (Covid, Silverspring Monkeys, Smoking Beagles, Thalidomide) is how participants essentially reflected on the shifting and changing nature of what can be considered 'ethical science', a view particularly well illustrated by Participant 24:

"Well, it's being able to compromise with what the mood of the culture is, you know. What we would consider ethical science now is not what they would have considered ethical science 50 years ago or 100 years ago. And you also have to consider that mood will change too, with our children and their children's children, so it's constantly shifting." (Focus Group E, Participant 24).

One advantage of the focus group method was that it allowed participants to draw on their entire cultural repertoires during discussions about animal research, framing these conversations on their own terms. This approach enabled them to reflect on various cultural events and experiences, including COVID-19, animal abuse, and medical scandals. It delves into what can be deemed ethical at any given time, revealing imagined substantial changes over the years and the anticipated likelihood of further evolution.

7.3.3. Storyline conclusion: Ethical science is situated and relational

Overall, this storyline suggests that the endeavour to achieve 'ethical science' is deeply intertwined with a complex web of relationships, connections and contexts. Within the focus groups, participants were observed to conduct analyses of 'ethical science' grounded in a conceptualisation of ethics as profoundly subjective and where bringing these subjectivities to a setting such as an AWERB resulted in their negotiation. When prompted to contemplate what could render animal research 'ethical,' participants encountered difficulty assessing the prospect of an abstract and faceless committee. Instead, they took the opportunity to try and situate the AWERB and its members, querying the extent to, and the way in which, they were envisioned to ‘care’. Participants appeared notably more inclined to attribute 'trust' in fostering ethical science, or at least a more ethical approach to science, to the imagined individuals serving on an AWERB, such as researchers or imagined lay members, than they did to the abstract prospect of a committee. In addition to this, participants also sought to contextualise the ethical contemplations they imagined taking place in the AWERB. For instance, by referencing recent events like the Covid-19 pandemic and historical controversies in animal research, participants appeared to employ these frames as a lens to discuss the cultivation of 'ethical science.' This implies that ethical science does not emerge in isolation, but is instead shaped by the broader social and political context in which it exists.

This becomes even more evident when considering other examples of qualitative research on animal research, where participants similarly draw heavily from their

social and cultural backgrounds in making such assessments. For example, McGlacken (2021b) found that her participants made regular references to the UKs 2016 European Union Referendum (or ‘Brexit’), to evaluate other publics’ perceived capacity to act as responsible citizens and, consequently, their trustworthiness. It is interesting to consider whether discussions about ethical science would have been different if the focus groups had not occurred in the wake of Covid-19 and a perceived decline in trust in governmental decision-making (see section 5.3.3). The pandemic equally is said to have ‘pushed’ a number of ethical issues into public debate that had not before been done so powerfully and abruptly, including matters such as ‘the allocation of scarce resources, the infodemic, healthcare workers duty to treat versus personal protection, privacy, and safeguarding minorities’ (Maccaro et al. (2021:1065). However, as McGlacken’s work suggests, any significant social event could have been equally ‘disruptive’, and the very nature of its disruption suggests the vital importance of context.

Interestingly, Schicktanz et al. (2012:130) argue that the proliferation of the 'ethics industry'—comprising institutions, boards, committees, regulations/agendas, guidelines, and soft laws—reflects social trends stemming from the development of ‘high reflexivity’ in late modern, post-traditional, and pluralistic societies (or what Beck (1992) terms the “risk society”). In doing so, they underscore the significance of recognising that ‘the conductors of the review themselves are heavily situated in socio-cultural contexts’, which is not always acknowledged in accounts of an ethical review process. Therefore, the central focus of this storyline lies not solely in the specific contexts participants draw upon but more broadly in the observation that participants actively draw from both historical and contemporary contexts when discussing the production of 'ethical science.' Moreover, they envision the very process of producing 'ethical science' as inherently social, shaped by individuals—individuals whom participants ‘hope’ possess a genuine concern for and commitment to the welfare of animals in research.

7.4. *Imaginaries of ethics*: Ethical science is negotiated

The analysis of focus group data presented in this chapter provides an account of participants who struggled to define 'ethical science'. Equally, they appeared reluctant to advance any objective criteria they would place on a research programme to make it overtly 'ethical'. This chapter has made several attempts at interpreting this reluctance, although more generally, it concludes that the mere presence of an ethical review system (and the abstract assurances inferred by this) does not in itself evoke greater confidence in scientific research involving animals by participants. Participants spoke of feeling relieved, or even impressed, at the existence and purpose of the committee and its make-up highlighted in the definition provided. However, they proceeded to use it as a platform to deconstruct and complicate the status of 'ethical science' altogether.

This discursive practice saw participants create, recreate, and debate the boundaries between what could be considered 'ethical' science and what is 'acceptable'. The analysis suggested that while animal research could not be genuinely *ethical* according to their pre-held understandings of the concept*,* it *could* continuously strive to be *more* ethical (Storyline A). Another perspective advanced was that animal research could, at once, be unethical and still 'acceptable' depending on its context. These 'truths' were depicted as in constant fluctuation suggesting that 'ethical science' exists on a kind of fluid continuum (Storyline A). In some senses, this storyline is reminiscent of the existing imaginary in policy circles of publics as 'conditional acceptors' of animal research (McGlacken, 2021a). However, its point of departure is the assumption that public concerns can be satiated with assurances about the ways that animals are used and often which animal models are used. Storyline B complicates this interpretation by highlighting the hopes that participants placed on the full eventual replacement of animal research and the positive assessment of those initiatives that may help achieve this aim (transparency, varied AWERB membership). This is outlined in the policy and guidance documents through their emphasis on the 3Rs, though it did not emerge as centrally as it did in the focus group discussions. Ethical science here, therefore, is perhaps better conceptualised as a continuous

journey rather than any one destination (Atuk (2021) uses the metaphor of ethics being ‘hungry’). The final storyline (Storyline C) depicts participants as situating the committees in their social context, as well as discursively personifying the imagined AWERB members. These storylines, when read together, reveal a complex web of connections and relationships that shape decision-making, suggesting that "ethical science" results from negotiation. This encompasses not only the process of negotiation, as discussed in the previous chapter, but also emphasises that the negotiation occurred fairly, openly, and honestly, involving situated and embodied actors, without the unfair influence of power dynamics.

7.4.1. Implications of this imaginary: What is it to produce care-full science?

The imaginary of ethical science as ‘negotiated’ becomes especially significant when we consider the implied aspects of these negotiations, such as the value of empathy or the acknowledgement of relationships and context in the continuous pursuit of better. Therefore, negotiation entails not only the presence of deliberation but also a negotiation of the relational dynamics at play. One key implication is that participants did not explicitly see the relevance of establishing ethical science criteria that could be rigidly applied within procedural ethical frameworks. Instead, they described ‘ethical science’ as the favourable outcome of a process rooted in contextual realities (the material conditions, political dynamics, embodied relationships and emotions). The relationality and interconnectedness required in regulatory systems are particularly well addressed in feminist research approaches, which apply a feminist lens to the enterprise of science. These approaches prioritise positionality and emotion over the more traditionally prominent ethical frameworks associated with a ‘masculinist science’, which often emphasises neutrality, objectivity and detachment (Harding, 1998, Ashall, 2022). For instance, concepts like a ‘Feminist Ethics of Care’ (Latimer and Puig de la Bellacasa, 2013), ‘relational ethics’ (Halse and Honey, 2007) or ‘situated ethics’ (Ransom et al 2023) exemplify calls for this shift. This approach is often inspired by Haraway’s concept of situated knowledge, which highlights how relationships and connections shape our thought processes and the perspectives that influence our decision-making (Puig de la Bellacasa, 2012).

In essence, this storyline reflects participants drawing a tacit distinction similar to that proposed by Latimer and Puig de la Bellacasa (2013) between the Ethics (with a capital E) and the “ethical” which involves the negotiation of everyday situations where ethical judgments are made (See section 2.2.1). Participants portrayed ethical science as transcending the formal, abstract, and objective. They emphasised the importance of who was involved in ethical decision-making, their relationships with animals (such as owning pets), and their relationships with each other (such as whether AWERB members were influenced by their ties to each other or the institution more broadly). They also emphasised how AWERB members felt emotionally when engaging in their role (such as whether AWERB members were influenced by their ties to each other or the institution more broadly). Consequently, they depicted ethical science as ideally manifesting in situations where science had been negotiated within a process permeated by care (or, perhaps, ‘care-*full*’), where ethical review and decision-making occurred empathetically and contextually (considering political, social, and relational factors) rather than strictly adhering to pure ethical or scientific reasoning. The AWERB structure essentially conceals the decision-making process, potentially removing the human element (or ‘fuzziness’, see: Latimer and Puig de la Bellacasa (2013)) from the messy negotiations, despite indications that such discussions still occur within institutional ethical review (Stark, 2012).

In social research investigating the lived experiences of those involved in animal research, the concept of ‘care’ and the act of caring are frequently discussed by social science scholars. For instance, scholars have examined how laboratory animal scientists demonstrate care for research animals both during their lives (Greenhough and Roe, 2011, Greenhough and Roe, 2019, Friese and Latimer, 2019) and through death (Roe & Greenhough, 2019; Holmberg, 2011). Additionally, establishing, maintaining, and promoting a ‘culture of care’ in animal research laboratories has gained prominence, with many stakeholder organisations now advocating for this standard (Home Office, 2014, Robinson and Kerton, 2021). However, as McGlacken (2021a) observes, this often focuses primarily on care in the physical space of the laboratory or in the housing space. What seems to be absent from such scholarship is the consideration of care that may extend far beyond the laboratory and manifest

within the AWERB in the ethical review. Yet, the storylines developed in this chapter regarding the production of ‘ethical science’ suggest an interesting relevance of the concept of an ‘ethics of care’ in public *Imaginaries of Ethics*, which merits further investigation in developing a PEwE. The subsequent and final chapter delves into the broader implications of all four empirical chapters, exploring them conceptually, methodologically, and practically within the UK animal research ethical review policy context.

Chapter Eight: Conclusions and Implications

8.1. Chapter introduction

The empirical chapters of this thesis have explored important themes concerning the relationship between the AWERB, ethics, and wider publics. These themes were initially developed through the document analysis (Chapter 4) and then used to organise the analysis of the focus group transcripts (expounded in turn through Chapters 5, 6 & 7). Broadly, these themes can be categorised as follows:

- The democratisation of science, considering the intricate balance of timing, nature and impact of public involvement ('imagining publics').
- The application of ethical frameworks, highlighting practical tensions between adhering to ethical processes (the means) and achieving ethical outcomes (the ends) ('imagining ethical review').
- The cultivation of 'responsible science', emphasising the delicate balancing of achieving scientific rigour and societal responsiveness ('imagining ethical science').

By dissecting these distinct problem areas, the research enabled a focused and systematic exploration of a complex system, rendering it more practically investigable. Still, the division of conceptual thinking into these topics was somewhat artificial. It is, therefore, crucial to note that their separation into themes, and accordingly chapters, does not imply they should be examined as entirely distinct issues or conversations. Instead, they serve as different lenses through which to explore the initial research questions (outlined below), and which this final concluding chapter seeks to unite to consider the broader implications of the work. The research questions guiding my approach throughout this thesis were as follows:

1. How do UK 'publics' imagine the current system and processes governing institutional ethical review in animal research governance?
2. To what degree do these perceptions correspond with the prevailing 'Imaginaries of Ethics' underpinning AWERB policy and guidance?

3. What are the implications of these reflections for:
    a) Advancing the conceptual field of Public Engagement with Ethics?
    b) Enhancing methodologies for a Public Engagement with Ethics?
    c) Assessing the social legitimacy of animal research in the UK?

The empirical chapters of this thesis (Chapters 5-7) primarily address the first two of these questions by analysing focus group transcripts, building upon methods and themes previously developed with policy and guidance documents (Chapter 4). The next sub-section of this chapter will draw out and summarise these core empirical findings. The remainder of the chapter then addresses each of the above sub-questions posed in the final research question.

The **first** sub-question outlines the theoretical academic contributions of this research project, particularly concerning the development of a conceptual PEwE. It explores the implications of my findings for both STS and PUS communities, especially those interested in a 'participatory turn' within science governance. Notably, this section reflects on the emergence of an 'institutional ethics' as a new form of regulatory expertise, which despite being widely considered a key principle of 'responsible' research, often shows limited engagement with diverse public perspectives. Therefore, it advocates for increased attention within these fields towards this aspect of regulatory governance.

The **second** sub-question details the methodological contributions of this thesis for the continued study of PEwE. It addresses practical challenges identified through the literature review (particularly Section 2.3.), for example, *which* publics are invited to participate (and in what capacity), how 'ethics' is framed, and how to empirically investigate situated social phenomena taking account of social context. As such, the development of 'Imaginaries of Ethics' emerges as a central outcome of this thesis, and its application in policy/guidance document analysis and focus group discussions is critically examined.

The **final** sub-question, focusing on the implications for the 'social legitimacy' of UK animal research, speaks directly to stakeholders involved in animal research policy

and regulatory practice (or the academic study of these). Here, I contend that the UK's regulatory framework for animal research has yet to fully embrace the 'participatory turn', suggesting a conservative approach towards traditional scientific paradigms that prioritise expert authority while regarding public engagement as contentious. Assuming, therefore, that UK animal research policy is *not* currently socially legitimate, I detail a number of routes forward for addressing this issue.

8.2. Summary of empirical findings

In investigating the research questions outlined, the empirical chapters of this thesis have focused on three primary key themes: imagining 'the public', imagining ethical review, and imagining ethical science. Chapter 4 examined all of these themes within the policy context, while subsequent Chapters (5-7) shifted the focus to lay participants, where each theme was explored in its own dedicated chapter. Despite the empirical differences in the two kinds of 'data', all four chapters employed a consistent analysis process, using 'storylines' to conceptualise the *Imaginaries of Ethics* underlying each theme's development. Imaginaries functioned as a conceptual tool, serving as a heuristic device to aid my interpretation of a much more nuanced story, rather than asserting absolute truth claims about the policy context or public perceptions. Furthermore, there is no intention to directly or formally 'compare' the two sets of data (on this point see Section 3.4.5.). Instead, they serve as distinct platforms for exploring the topic of animal research, which is brought together in this implications chapter.

The first theme explored, both in the analysis of documents and focus groups, centred on the involvement of "the public" in institutional ethical review concerning animal research. In the document analysis, I interpreted a portrayal of animal research as a "public good", which contrasts markedly with the outputs of the focus group analysis, which framed animal research as a realm for legitimate political engagement. The documents depicted publics as mere consumers of animal research outputs, implicitly disregarding their roles as citizens or stakeholders. This omission consequently

implied that the AWERB has little obligation to actively engage diverse public perspectives. Conversely, focus group participants envisioned an ideal scenario where the reasonable public could engage in institutional ethical deliberations, depicting this as a fundamental right, albeit through existing democratic channels and forums. Still, participants did not advocate for direct involvement in AWERB decision-making processes, citing potential overwhelm (emotionally, and time-wise) and lack of expertise. Yet, equally, they did not seem to imply they were solely passive consumers of research outputs and, as such, implicitly rejected their positioning as legitimately sitting on the periphery of institutional ethical review. This distinction suggests a discrepancy between publics' stake in an 'ethical review' more generally and of participating in current AWERB specifically, given the professionalised nature of institutional ethics and the expertise-driven approach. While they may imagine publics to have a higher stake in the former, their engagement in the latter is influenced by the conditions of the arena in which they are invited to participate.

The second theme revolves around the imagined process of institutional ethical review, emphasising the practical or routine aspects of conducting such a review. Policy and guidance documents suggest a preference for achieving expert consensus and ensuring consistency in committee decisions. This aligns with prior observations that research ethics committees can often prioritise technical and methodological issues, where consensus is feasible, over value-based social concerns (See Section 2.2.3.). However, focus group participants consistently emphasised the significance of a 'just' deliberative procedure and the establishment of principles to uphold 'fairness'. Such principles surrounded the provision of opportunity to present diverse expert evidence, ensuring impartiality (especially in the role of a chair), and fostering a trustworthy decision-making process. Participants emphasised the importance of ensuring that society could trust a research proposal had undergone thorough review, following a fair deliberative process, without having to be physically present to make such assurances (for example, in a criminal trial process). Consequently, I interpreted that participants assigned greater legitimacy to the means of an ethical review process, rather than the outcome itself. This becomes a particularly relevant production given that institutional ethical review remains a 'black-box' to many, and

prompts a re-evaluation of the assumption the very existence of ethical review bodies can enhance public trust.

The final theme explored the idealistic notion of producing ethical science through a robust ethical review process, representing the most abstract of the three themes discussed. Within this exploration, it was observed that policy and guidance documents often centre on the principles of 'traditional' ethical frameworks. These documents frequently equated 'ethical' science with 'good' science and, in doing so, accentuated fundamental tenets of a 'normal' science paradigm, such as refinement, reproducibility, and translatability. However, this conceptualisation of ethics, while indeed still present in focus group conversations, played a comparatively minor role. Participants conveyed their struggle in pinpointing what would make science truly 'ethical', and their explorations were interpreted to imagine 'ethics' as an ongoing process of social negotiation that cannot be fully encapsulated by pre-existing abstract principles. Accordingly, participants placed significant emphasis on the lived experiences and perspectives of individuals engaging in ethical deliberations, including their personal relationships with animals and with each other, as well as the emotional labour involved in such engagements. These dimensions of ethics are characterised as resembling an 'ethics of care' (see section 7.4), and despite their importance, these relational and emotional aspects of ethical review are often considered extraneous to the core pursuit of institutional ethical review. However, this analysis suggests that they may hold greater value to the social legitimacy of such systems than the current system permits.

In essence, this analysis suggests a disparity between the expert-driven, closed-door scientific rationality ostensibly guiding AWERB protocols and the more political, justice-driven and contextually negotiated ethics envisioned by lay participants. This misalignment suggests differing conceptualisations of what constitutes a successful ethical review process and, consequently, the legitimate role of 'ethical review' within responsible research governance and frameworks. Additionally, it emphasises the value of exploring public *Imaginaries of Ethics* within social research, an area that has largely been overlooked in STS, especially in the context of animal research. The implications of these insights are further explored in the remainder of this chapter.

8.3. What are the implications of this thesis for the development of a conceptual Public Engagement with Ethics?

This project has critically examined a significant yet overlooked shift in the regulation of scientific research – a shift marked by an ostensible transition in the regulatory expertise guiding 'responsible' research practice. Referred to throughout this thesis as "institutional ethics", these regulatory processes embody a comparatively new form of expert legitimisation within specific professional contexts, such as the laboratory or the ethical review committee, and often take place without ethical experts at all. In the literature review, particularly Section 2.2.2, I illustrate how many professionals who interact with such systems view 'ethics' within them as routine, proceduralised, or 'settled" (Wainwright et al., 2006, Hobson-West, 2012, Frith et al., 2011, Stephens, 2013, Job, 2014). However, qualitative social science research has prompted professionals to reflect from a more situated and visceral standpoint and to recount the personal and intricate negotiations they experience when encountering ethics in their everyday (Greenhough and Roe, 2011, Latimer and Puig de la Bellacasa, 2013, Friese and Latimer, 2019, Ashall, 2022). This, alongside other work on the rhetorical process of 'ethical boundary work', serves as a compelling reminder that the classification of something as 'ethical' (through its interaction with an ethical review process) is not an inherent or fixed category, but rather the outcome of a deeply social process (Wainwright et al., 2006).

Despite the increasing emphasis on participatory governance in both science policy, and its academic study, the social legitimacy of ethical expertise remains an underexplored territory for STS scholars. This is peculiarly striking given the frequent conflation of 'ethics' and 'public engagement' in responsible and accountable research agendas. Within this thesis, I argue that if the process of "institutional ethics" represents a negotiation shaped by social, cultural, and professional dynamics, STS scholars have a compelling interest in exploring the social dimensions of ethical expertise and the platforms through which it manifests (i.e. ethical review bodies). Of

particular importance here, I argue, is how wider publics assert legitimacy (or otherwise) to such systems that often purport to operate in their name. Drawing on existing literature that highlights the value of this inquiry (Kelly, 2003, Moore, 2010b, Schweda and Schicktanz, 2010, Schicktanz et al., 2012), I have further utilised concepts from the field of STS such as ethical boundary work and Socio-technical Imaginaries, to strengthen the argument for increased scholarship in this area. Consequently, this project not only provides a stronger normative justification for such a field but also underscores the practical feasibility of this work.

Acknowledging the methodological challenges in researching the plethora of expectations/understandings surrounding complex ethical review systems, I developed the conceptual framework of 'Imaginaries of Ethics'. Drawing from the literature on sociotechnical imaginaries and other anticipatory concepts in STS, I have sought to emphasise the inherent 'futuring' involved in the process of institutional ethical review, where idealisations and prioritisations can be interpreted through policy and guidance. While several scholars have applied Sociotechnical Imaginaries to explore public perceptions of science policy (See section 2.3.3.), none have explicitly applied it to ethics or ethical review systems. Equally, there is a dearth of literature that develops imaginaries into a practicable research/analysis framework (section 3.1.). Therefore, inspired by Hajer's use of 'storylines' to identify reflective conceptualisations of complex social phenomena (2005), I have developed an approach that seeks to identify these reflective storylines, interpreting them into idealised projections of ethical possibilities. This conceptual framework has proven invaluable in understanding and conceptualising the collectively constructed imaginaries of institutional ethical review in guidance documents and focus group conversations, thus addressing this gap in the literature. Furthermore, it prompts meaningful reflection for those intrigued by the field of PEwE, highlighting how certain 'imaginaries' of institutional ethics can drive innovation, shape policy trajectories, and affect public confidence in research and policy communities. Importantly, this approach does not imply determinism of future ethical review systems based on such imaginaries, but does emphasise the substantial influence these idealised ethical futures can wield over ethical decision-making in everyday contexts. By placing

‘Imaginaries of Ethics’ as this thesis’ focus, I have developed an approach to investigating and potentially renegotiating the shared visions or collective understandings of institutional ethics, rendering them subject to empirical inquiry.

As the imperative for establishing a field of PEwE becomes increasingly evident, a pivotal question arises, serving as a foundational consideration in shaping the field trajectory: *to what extent and in what capacity should various segments of the public be engaged?* Schweda and Schicktanz (2010), key scholars for laying the normative justifications for PEwE, underscore this by positing the significant question of who within society qualifies as an ‘affected’ individual in a specific bioethical issue, thus warranting their status as legitimate stakeholders. This raises the overarching dilemma of whether engaged publics must be directly, indirectly, potentially or prospectively affected by an issue for their perspectives to carry weight in an ethical review process. This holds profound implications for the evolution of PEwE, as the perceived ‘stake’ of “the public” influences considerations regarding the involvement of lay individuals in institutional ethical review – whether as active ‘agents’ with valued voice/perspectives, or as ‘informants’ whose interests are best represented by expert ethicists or appointed lay members. This issue becomes especially pertinent in the context of animal research, where the lack of a direct ‘voice’ for the affected entities (the animals themselves) intersects with publics’ indirect connection to research outcomes. For example, rather than being considered fellow patients or research participants, their interest often takes more of a removed role, as concerned members of a democratic society with an interest in how science is undertaken and how animals are treated.

In addressing this pivotal question, this project offers insights into how various publics conceptualise their own stake, which in turn, can inform this conceptual dilemma. Interestingly, focus group participants largely rejected the notion of continuous engagement in routine institutional ethical deliberations as active stakeholders, citing constraints such as time, resources, emotional capacity, and scientific expertise. This reluctance was further compounded by the fact that AWERBs are situated within vast research institutions, among experts, and are brought into research design at a late stage. Consequently, institutional commitments are already established and the role

of public dialogue in decision-making remains ambiguous. However, participants did not entirely disclaim the stake of “the public” in ethical review, carving out a more political role for rational and interested publics, and calling for greater context about the situated and embodied perspectives of AWERB members.

Regarding the wider issue of engaging publics in complex regulatory frameworks (although not on the topic of ethical review), Macnaghten and Chilvers (2014) reflect on various ‘roles’ that “the public” can undertake, drawing from Pielke (2007). These roles span from the “issue advocate”, where individuals champion specific positions based on existing values, to the “upstream model” of engagement. Here, publics are invited to engage in early-stage dialogue, exploring possible future worlds, as well as the concerns, hopes, and possibilities associated with them. Empirical findings from this project suggest a reluctance among participants to adopt a role in institutional ethical review akin to an “issue advocate” (Section 5.1.), yet exert perceptible enthusiasm for engaging in exploratory conversations resembling the “upstream” model (5.2.). However, presently, ethical review in the AWERB is very much “downstream”, taking place at the end of research design, with members representing fixed pre-defined roles (i.e., veterinarian, statistician, lay member), and focusing on scientific and welfare risks within a structured timeframe. This disparity highlights how the downstream forum of the AWERB, as it stands, might not be a suitable forum for public imaginaries owing to its more procedural function driven by scientific rationality.

At its core, this thesis makes a significant conceptual contribution by drawing on broader STS literature, to make a more structured case for the normative value of exploring PEwE within STS communities. Introducing the innovative conceptual framework of “Imaginaries of Ethics”, I identify an emerging form of expertise influencing scientific research, which I term “institutional ethics”, shaped by science ideologies, knowledge hierarchies, and social/professional interactions. I, therefore, make the argument that lay expertise can offer a pertinent contribution to such negotiations. By applying this conceptual framework to the complex landscape of animal research, I illustrate that publics need not be considered ‘directly’ impacted by a bioethical issue to engage with them through the lens of ‘ethics’ valuably. This opens

avenues for similar exploration in other scientific and technological domains, such as Artificial intelligence or Genetic Engineering.

This thesis has demonstrated that public reflections on institutional processes can and should inform future innovations in the development of institutional ethical systems, co-creating more inclusive, transparent, and socially responsive frameworks in line with RRI agendas. As well as understanding publics relationship with ethics, the more practical goal of PEwE as a field of academic inquiry should, therefore, be to explore how this can be achieved in practice. This could include the valuable exploration of feasible possibilities of engaging lay publics “upstream” in the very development of ethical protocols (frameworks, guidance, culture) before ethical commitments are consolidated, as this thesis has championed through its empirical findings. Such work can draw substantially from existing scholarship surrounding early-stage public engagement, drawing on concepts of inclusivity, transparency, co-creation and co-production (Irwin, 2006, Stilgoe et al., 2013, Stilgoe et al., 2014, Owen et al., 2012). In such approaches, lay perspectives are not seen as passive feedback but integral to the shaping of research, policy-making and decision-making processes. Potential methods that could be explored within future applied PEwE scholarship could be the use of deliberative workshops, citizen juries, consensus conferences, and co-produced researchtabl projects. These activities exemplify the wave of upstream public engagement transforming academic and policy spheres, where the role of publics is dynamic, seeking to shape future policies rather than merely reacting to finalised decisions.

8.4. What are the implications of this thesis for developing methodologies to explore PEwE?

In addressing the need to strengthen the scholarly foundation for a PEwE, a primary focus of this thesis has been the development of methodological insights for exploring the social legitimacy of institutional ethical review. Given the complex cultural significance and the profound ethical implications of using animals in scientific

research, I have emphasised the necessity of obtaining diverse and contextual accounts of public/policy expectations regarding this crucial regulatory process. Currently, such research is lacking. Therefore, this section outlines several key challenges encountered in this endeavour. These include the empirical development of Imaginaries within dense or 'dry' documents, as well as effectively and inclusively framing discussions on animal research ethical review with diverse lay publics. In this section, therefore, I address the second sub-question of the final research question ('3b'). Firstly, I outline the evolution of 'Imaginaries of Ethics' and then reflect on its application, examining both document analyses and focus groups. I discuss several methodological approaches that were employed in practice. These include reflection on the use of 'Prolific' as a recruitment agency and the technique of object elicitation as an entry point into discussions surrounding animal research ethical review.

8.4.1. Reflecting on the operationalisation of imaginaries

The conceptual framework of Imaginaries of Ethics emerged from a desire to draw upon existing STS scholarship concerning the publics engagement with science and apply it to the realm of institutional ethics expertise. This additional conceptual framing was deemed necessary to recontextualise "public opinion" within its social and cultural milieu, thereby empowering public voices to become a valuable resource in ethical discussions around contentious science. Traditional methods such as opinion polling, almost exclusively used in discourse around publics and animal research, offers only a limited glimpse into the conditions of the 'social contract' often implied to justify its use (Section 1.4). I argue that qualitative methods are essential for capturing the diverse and nuanced perspectives of publics, and other important stakeholders, on this topic to truly deliberate on the social legitimacy of animal research. Yet, introducing the additional framing of 'ethics' to lay discussions around animal research further complicates things, as ethical inquiry is typically entrenched in tacit intellectual hierarchies between 'lay' and 'expert'. While scarce, existing research with lay publics on the concept of ethical review demonstrates that when research is carefully designed around them, publics can be meaningfully engaged (2.3.2). Drawing from STS, the concept of Socio-technical imaginaries offers a conceptualisation of

collective and situated visions of desirable research futures associated with idealised scientific research that I have argued are integral in shaping, driving and reinforcing ethical review practices. This allows the empirical object not to be what is their prior knowledge of complex regulatory processes, but based on the more abstract concept of 'Imaginaries of Ethics'.

Committing to the employment of this analytical framework early in the research project was therefore vital in crafting the research methods employed, demonstrating that Imaginaries are not something that can be developed in the literature review and not picked up again until the analysis but rather need to be carried right through the research project. It produced a valuable way of exploring public and policy expectations of the AWERB, which otherwise would sit on very different conceptual levels – one being regulatory/instructive, and the other being exploratory. Doing this also demonstrated the value of the lens with multiple methods and its potential applicability beyond this context. In the following subsections, I offer specific reflections on its application in each of these cases.

8.4.2. Reflecting on the use of document analysis

Developing a conceptual framework through which I could explore public *Imaginaries of Ethics*, required a better understanding of the imaginaries that currently drove ethical review practice - research that did not previously exist. This led me to also apply this conceptual lens to the key policy and guidance documents that guide the AWERB. Although the prospect of exploring these documents through the theoretical lens of imaginaries was, in itself, a precarious choice, that was not guaranteed to be productive. Despite assurances from key imaginaries scholars such as Jasanoff and Kim (2015:27) that policy documents can be 'mined for insights into the framing of desirable futures' as verbal tropes, it became clear this was comparatively harder because of the rigidity and density of guidance literature. Thus, I drew considerable inspiration from Hajer's (2005) concept of 'storylines' as an intermediary step in the analytic process. This proved to be a crucial methodological innovation for interpreting the idealised *Imaginaries of Ethics* throughout this thesis. These imaginaries were not

inherently evident in the data but often understood to be inferred from both explicit statements and, more importantly, what was omitted or implied in the more reflective storylines. An example of this is found in chapter 4, where I identified the storylines portraying publics as primarily patients and an audience to science. Notably, the omission of categories such as citizen or stakeholder led me to interpret an imaginary of publics as consumers. The incorporation of this analytical step was not only beneficial for my own interpretative process but was also envisioned to aid you, the reader, in understanding my analytical approach – even if you yourself would have made different interpretations. This is something that, in my opinion, much existing work using imaginaries has obscured.

A key insight gleaned from using *Imaginaries of Ethics* to analyse a policy context through its policy documents is the importance of recognising that this approach provides just one interpretation of documents in their context. This was highlighted during presentations of this project at conferences, where representatives of the authoring organisations were present (full list of dissemination of research findings on Page 4). On one specific occasion, such a representative expressed that my interpretations of imaginaries within the overall policy context might not directly align with their institutions' approach to animal research practice. It is crucial, therefore, to convey when disseminating findings that these interpretations are co-produced deductions, not direct criticisms of individual institutions involved in the policy context. Moreover, since the imaginaries emerged from analysing all documents collectively, they may not necessarily apply to each individual document or authoring institution outside of this context. To address this, it was highly beneficial to ‘map’ the policy landscape by identifying different ‘streams’ (See section 3.1.1. & appendix A & B) and familiarising myself with the ethos and intentions of each organisation to at least acknowledge its complexity when undertaking the analysis. Although time-consuming, placing these documents in their wider context by actively engaging in platforms where stakeholders would be present (such as conferences and workshops) was instrumental in not oversimplifying the policy context. While this engagement might not have been formally considered ‘data’, it provided an invaluable firsthand insight into

the organisations' perspectives, and relationships with one another, informing my analytical approach.

8.4.3. Reflecting on the use of focus groups

Focus groups were inherently well-suited to the concept of imaginaries, which delves into collectively held and shared visions of society-science relationships. Focus groups capture the richness of social dynamics by facilitating the negotiation and exploration of shared beliefs and cultural narratives. Participants were encountered actively engaging with each other's viewpoints, drawing heavily from their lived and shared experiences when doing so. This made focus groups a valuable tool for investigating the intricate relationships between publics, science, society, and institutional ethical review.

One key common criticism of the focus group method is the tendency for participants to engage in 'group think', especially in discussions of unfamiliar or contentious topics, where participants may favour harmony and conformity (MacDougall & Baum, 1997). This phenomenon was indeed observed during the focus group sessions, as some participants expressed surprise that they all shared similar views. While it is important to remain mindful of this tendency when drawing conclusions, it becomes less of a concern when employing the conceptual lens of imaginaries. Here, the focus shifts from the consensus itself to the deliberative journey leading to it. In most cases, despite apparent consensus, there was a wide range of viewpoints and positions expressed, even if the natural endpoint of the negotiation appeared 'settled'. Therefore, one crucial methodological recommendation is for focus group moderators to consistently encourage diverse perspectives and foster an environment that values diversity of thought. It is also pertinent to consider such conflicts in the analysis process, as imaginaries are inherently dynamic and evolving. Neglecting to fully consider this dynamic nature limits the depth of understanding of imaginaries. Additionally, in response to the methodological concerns raised by scholars advocating for a more sustained PEwE inquiry, I devised a method of 'object elicitation' to serve as both a framing device and ice-breaker for the focus group sessions. My

reflections on this approach for future work with publics are detailed in Section 8.4.4., thought the following section reflects on the use of a recruitment agency.

8.4.4. Reflections on the use of 'Prolific' for recruitment

The use of the recruitment agency Prolific proved to be a valuable and efficient approach for engaging a diverse pool of participants (See section 3.2.1.). Most valuable was its ability to recruit participants who might not have initially signed up for the research owing to a lack of knowledge or direct interest. While the platform's interface is primarily tailored to short surveys, its potential for focus group recruitment was relatively uncharted territory at the time (Prolific have since published step-by-step instructions on this, see: Prolific, 2023). As a result, there were some experimental aspects to its implementation, leading to a few technical challenges during set up. Recruitment for the study, which had a very broad sampling criteria (anyone not engaged in animal research), proceeded much faster than anticipated. However, due to a set-up error with the consent form that limited access, approximately 251 participants were 'stuck' trying to access the study. Concurrently, a system glitch prevented emails from being sent to recruiters regarding the progress of their studies, meaning I was not alerted to this problem for a few hours. This resulted in frustrations among participants who, it appears, had expected immediate access to the focus group session, and were concerned about 'missing out'. Despite these setbacks, I made the decision to accommodate the first 30 respondents, filling six focus group sessions with five participants each, while offering my apologies to the remaining 221. Most of these participants attended their scheduled sessions over the next 3 months, with only 2 no-shows. Despite the technical challenges, which are typical when employing innovative methods, Prolific proved highly effective in swiftly recruiting enthusiastic and engaged participants. However, its productivity in meeting narrower and more specific recruitment criteria remains less certain. The use of a recruitment agency to engage a broad range of participants willing to negotiate their positions without imposing criteria on who/which viewpoints are invited to take part proved to be of great value in empirical work within PEwE, whether this be through the use of Prolific or otherwise.

8.4.4. Reflections on the use of an object elicitation task

In preparation for the focus group sessions, I asked participants to bring an object to the session that they believed had been involved in a process of animal research. This approach aimed to empower participants to frame the topic of animal research ethics in their own terms and within their own lived experiences (Section 3.2.2.). This strategy proved effective in sparking engaging and free-flowing conversation, despite the unconventional setting of online focus groups with unfamiliar participants and a relatively unfamiliar topic. However, it is crucial to acknowledge potential biases and framing effects that may arise from the choice of stimuli. For instance, by prompting participants to reflect on animal research through everyday household objects, the focus may inadvertently prioritise consideration of physical outputs/productions of animal research. To mitigate this as far as possible, focus group moderators using this method should guide participants towards considering the imagined regulatory process, rather than solely focusing on the legitimacy or acceptability of their chosen objects. Additionally, when discussions became too concentrated on a single category of object (i.e. cosmetics) I used initiative in the moment to raise alternative examples that may have broadened the scope of discussion, future use of this method may benefit from having a variety of physical objects to direct focus group conversation.

While the intention behind the object activity was to allow participants to shape the conversation in their own terms and through their own contexts, asking to draw from items in their homes may have inadvertently narrowed their focus to a specific type of animal research. Although focus groups inherently influence the direction of discussion in all cases, future research using object elicitation to frame scientific research should consider the balance between tapping into participants' everyday lives and potentially limiting the scope of discussion. Partly due to the success of the object-elicitation task as an icebreaker and the more open-ended nature of the first half of the focus group sessions (See Section 3.2.2.), conversation flowed easily with high engagement. During the second half of the focus groups, comparatively denser topics like ethical science and ethical review were broached, using a definition of the AWERB as an entry point (also Section 3.2.2.). Here, an observable shift occurred, and participants'

responses became (while still incredibly fruitful) comparatively more cautious, as they appeared to lack the same level of enthusiasm. On reflection, perhaps a more creative method could have enhanced the latter portion of the focus group sessions, as the definition was perhaps a daunting entry point into the discussion. Future research could explore creative methods to introduce this topic to diverse publics, for example, card games (i.e.: Urquhart and Craigon, 2021), or through role-play (i.e.: Schrier, 2015), aiming to reinforce the safe and trusted space that this research aimed to establish.

8.5. What are the implications of this thesis for the social legitimacy of animal research?

Throughout this research project, my aim was to enrich and inspire STS scholarship concerning publics, ethics, and regulatory systems, with a specific focus on the realm of laboratory animal research in the UK. Central to this endeavour has been the exploration of how current systems of institutional ethical review can be regarded as 'socially legitimate' (per, sub-question '3c'). An essential aspect of this inquiry involved scrutinising how publics access, understand, and engage with these committees, and the extent to which diverse social perspectives are able to permeate these institutional processes. The contention that publics hold a substantial stake in knowledge production processes has been commonly asserted in the context of animal research, despite being a historically tense relationship (See section 2.1.). This assertion stems from the intimate and interconnected social dynamics between humans and animals, coupled with the reality that animal research often occurs in their name and is funded by public resources (Peggs, 2013, Varga, 2013, Ormandy and Schuppli, 2014). In the introductory chapter, I argued that this perspective holds particular significance to the framework of ethical review within the AWERB, given the claim that the existence of an ERB bolsters 'public trust' in animal research science (as detailed by Rose, 2012). However, there is a notable lack of research examining public understandings and expectations of such bodies, which are important reflections to uphold the social contract around the use of animals in research.

The empirical portion of this thesis (Chapters 4-7) maintains that policy and guidance documents advising the UK AWERB can be read as inferring that “the public” are mere consumers of the outputs of animal research. These documents largely overlook wider societies' cultural or democratic interests in the ethical use of animals in science. From this, I have interpreted that while publics ‘trust’ in the system is indeed considered crucial, their active ‘voice’ and perspectives are not considered integral to an effective ethical review. In contrast, lay participants in focus groups endorsed the idea of engaging with such systems through conventional civic political avenues associated with modern democracies (such as voting, petitioning, protesting, boycotting, and public consultation). While participants did occasionally identify themselves from a consumer standpoint (through their use of medications or cosmetics), they also actively reflected through the lens of pet owners, meat eaters, individuals with an interest in science, as care givers, and indeed politically engaged individuals. Consequently, animal research ethical review was perceived as a political arena ripe for engagement. However, participants did not envision themselves directly entering the highly complex expert realm of the ethical review committee that the AWERB offers.

Equally, through my exploration of the *Imaginaries of Ethics* of the *process* of ethical review (Chapter 6), and the goal of ‘ethical science’ (Chapter 7), this research reveals a notable disparity between the expert-driven scientific rationality guiding AWERB protocols and the more holistic, contextual ethics envisioned by lay participants. My interpretation is that ethical review within the AWERB is guided by an ideology that both perpetuates and is shaped by traditional scientific paradigms, which prioritise objectivity and expertise, while systematically disregarding emotion or ‘messy’ human negotiation, as exemplified in the application of a HBA analysis (Ideland, 2009, Varga, 2013, Röcklinsberg et al., 2014, Tjärnström et al., 2018). As a result, scientific principles predominantly shape the review process, portraying animal research as a “public good” owing to its significant importance for (bio)medical inquiry, thereby fostering a protective impulse towards the practice. Consequently, in AWERB guidance, public desires or preferences are often eclipsed by the perceived overall well-being of humanity. This perspective is vividly illustrated in the ethical imaginaries

developed within this thesis, where publics are sidelined in ethical review, expert moral consensus takes precedence, and the pursuit of “good” science prioritises a technical approach to ethics subservient to pure rationality.

I contend that the AWERB ethical review framework, as informed by a variety of policy and guidance documents, falls short of accommodating the more emotive, deliberative, and holistic contributions envisioned by a public imaginary of ethics. In these imaginaries, animal research is deliberated as a political sphere where the fairness of the process and embodied care relations are valued. To effectively represent broader societal concerns, institutional ethical review of animal research must be able to integrate and respond to alternative *Imaginaries of Ethics*, even if direct public participation is not desirable. Consequently, I posit that animal research ethical review falls short of achieving social legitimacy. In light of a participatory turn in science governance, it becomes imperative to scrutinise practices that perpetuate the normative inclination to uphold animal research as the quintessential standard of scientific empiricism (Russell, 2012, Olsson et al., 2019). I therefore also suggest that this shift justifies the critical significance of PEwE scholarship for unpacking and advancing this objective over the long term and examining the requisite cultural and ideological shifts necessary to promote the use of non-animal methods (Ankeny and Davies, 2023). This would allow alternative frameworks and perspectives, developed with and informed by diverse publics, to gain persuasive influence.

8.5.1. Implications for the AWERB

The conclusion mentioned above is valuable for social science academic discourse on legitimacy in research policy. This project also provides some more practical insights for individuals involved in the ethical review itself. For instance, by inferring that the ethical consideration of animal research protocols should be considered a political process rather than solely the exclusive deliberation of experts behind closed doors, then “good practice” within the AWERB potentially shifts. Focus group participants strongly emphasised the importance of ‘caring’ in and through ethical deliberations (see Chapter 7). They expected committee members to recognise their

own emotions and interpersonal relationships, both with each other and animals more broadly. However, these aspects are currently absent from policy imaginaries, which tend to prioritise abstract, normative, and non-emotional decision-making frameworks. This calls for a fundamental reassessment of how publics can be more effectively engaged “upstream” in shaping institutional ethical review agendas (as argued in section 8.3.). However, in the interim, I also advocate for the implementation of several more immediate “downstream” mechanisms within the existing AWERB structure.

One key suggestion is that AWERB members should be empowered to extend and draw attention to the fluid, messy and poignant discursive processes inherent in institutional ethical review negotiations. Interestingly, this notion parallels existing scholarship developing a ‘Culture of Care’ (COC) inside the animal research laboratory (Davies, 2012, Friese et al., 2019, Williams, 2021, Kirk and Myelnikov, 2022). As noted in the introductory chapter, a COC encourages researchers and animal care staff to consistently strive to minimise pain and distress. Additionally, it promotes transparency, accountability, and continuous improvement in animal research practices (Home Office, 2014). While the AWERB has the task of developing a COC within the wider institution, it is not required to develop one internally in its approach to ethics (Robinson and Kerton, 2021). Social science scholars in the field have previously argued to extend the concept beyond the laboratory environment to encompass care for patients and animals in clinical settings (Gorman and Davies, 2020). Yet, the concept is apparently missing from the ethical imaginaries within the physical, intellectual, and emotional space carved out for ethical reflection.

To foster a COC within the AWERB, it is crucial to nurture emotional and situational reflection skills among its members. This would likely entail engaging in self-reflection, exploring personal feelings, and encouraging members to openly scrutinise internal and institutional biases. Thus entering into a series of ‘extra’ exploratory discussions aimed at continually reflecting on and improving ethical practice and scrutinising their own ‘committee culture’ (Ideland, 2009). Based on the public *Imaginaries of Ethics* explored in this thesis, these initiatives have the potential to enhance the legitimacy of ethical review within the AWERB from a public perspective. Moreover, implementing

these practices would not necessarily represent a significant shift. Firstly, it can be achieved by leveraging the existing tools and language familiar to those involved in animal research around ‘care’. Moreover, implementing these practices would not necessarily represent a significant departure for animal research professionals, as a breadth of emerging social science qualitative research indicates they *already* engage in emotive and situational reasoning within their professional decision-making (Greenhough and Roe, 2011, Davies, 2012, Greenhough and Roe, 2018, Friese et al., 2019, Greenhough and Roe, 2019, Williams, 2021, Kirk and Myelnikov, 2022, Ashall, 2022, Roe and Greenhough, 2023). However, these aspects are often concealed from wider society due to the opaque nature of ethical review processes. This infers that these ‘experts’ may not embody the traditional scientific frameworks but instead temper their own decision-making schema for AWERB reports and decisions. It indicates that such ‘caring’ already occurs in the well-run AWERB, and further developing and highlighting this for public scrutiny could enhance the legitimacy of AWERBs.

However, implementing these changes faces a key hurdle. There is mounting pressure on AWERBs to expand their regulatory activities beyond those mandated by the Animals (Scientific Procedures) Act (ASPA), known as non-ASPA (NASPA) research, and to give greater consideration to retrospective review (Barnabe, 2023). AWERB members have long expressed significant strain, grappling with limitations of time, funding, resources and recognition (Hawkins and Hobson-West, 2017). Asking them to engage in more exploratory reflection would necessitate corresponding support to accommodate the additional emotional and practical workload to create room for these ‘extra’ exploratory conversations.

8.6. Concluding thoughts

This project has highlighted the importance of engaging in social science research, leveraging tools from STS, in examining institutional ethical review committees such

as the UK AWERB. In doing so, I have argued that scrutinising these aspects through the perspectives of institutional discourse (interpreted through policy and guidance documents) and societal discourse (through focus group conversations) has been particularly valuable for such explorations. Animal research has proved a particularly insightful lens for understanding the interplay between ethics and public engagement, given the complex and historically volatile stake publics hold in its practice, as well as an outdated reliance on reductive opinion polling in establishing 'trust'. In this concluding section, my aim is to summarise the key contributions of this thesis, encompassing conceptual, methodological, and practical aspects.

I have argued that the social legitimacy of ethical systems and the expertise that guides them has been underexplored in the social sciences, and as such, I join several scholars in advocating for the expansion of Public Engagement with *Science* discourse to include institutional ethics ('PEwE'). My key contribution to PEwE has been the development of 'Imaginaries of Ethics' as a conceptual framework in which to frame, design and analyse research. By drawing from the STS concept of Socio-technical Imaginaries, this thesis has facilitated a nuanced exploration of public expectations for ethical review processes, rendering 'institutional ethics' an area open to investigation and practical negotiation. An empirical finding in this regard with great potential implications for PEwE discourse is that while institutional ethics may 'sideline' public involvement in the AWERB, focus group participants constructed a more complex role. While they did not see a space for themselves physically entering the AWERB, they did indicate a desire to engage in exploratory conversations around ethical possibilities, intimating a preference for 'upstream' engagement. Developing systems for diverse publics to influence ethical processes (as has been done with scientific ones) could be a promising direction for future PEwE initiatives.

Accordingly, developing a 'socially legitimate' regulatory system entails not only recognising the diversity of non-expert perspectives in decision-making but also ensuring systems allow these perspectives to influence and enact change. Social scientists can facilitate this process by surfacing counter-imaginaries, making them conceivable. A second core contribution of this thesis, therefore, is the need to

methodologically facilitate meaningful engagement, built with and around situated and diverse publics. The *Imaginaries of Ethics* framework, therefore, recontextualises "public opinion" within its social and cultural context, empowering public voices in ethical discourse. Imaginaries proved most fruitfully employed when a commitment was made to this lens from the project's outset and where it influenced research design, for example, the use of object elicitation in focus groups. This 'icebreaker' allowed participants to frame (and negotiate) their own relationships with the practice of animal research, situated in their daily lives. Though, as discussed in section 8.4.4. above, future research could valuably explore further creative methods for engaging publics with ethics, particularly the more complex aspects of ethical review procedures where my own participants were observably more reserved. Nevertheless, it remains crucial to establish a 'safe space' where participants feel there are no right or wrong answers, particularly to mitigate the inherent intellectual hierarchies and power dynamics in the topic of 'ethics'.

This project was partly shaped by a crucial observation, highlighted in section (1.3.), that stakeholders initially believed that 'the very existence of ethics committees… would engender public confidence in decisions about the ethical acceptability of scientific work involving animals' (quoted in Rose (2012:283)). Consequently, this thesis aimed to address this gap regarding the social legitimacy of the AWERB. Ultimately, the analysis presented in this thesis suggests a gap between expert-driven scientific rationality guiding AWERB protocols and the more ambitious and relational 'ethics' depicted by lay focus group participants. Consequently, it is my contention that animal research ethical review falls short of achieving *social* legitimacy. Addressing this gap would require a significant restructuring of ethical systems and the ethical frameworks that guide them, necessitating substantial culture change, likely a long-term goal of PEwE discourse. In the short term, I propose that AWERBs could be empowered to further develop a 'Culture of Care' *within* the committee. This would involve developing emotional and situational reflection among members encouraging self-examination, exploration of personal emotions, and scrutiny of internal biases. Such work would require considerable support in terms of time, funding, and resources.

Ultimately, in developing a framework to scrutinise public and institutional *Imaginaries of Ethics*, this project reveals that the UK's approach to animal research regulation has not fully embraced the 'participatory turn' in science governance. Instead, it reflects a conservative preference for traditional scientific paradigms prioritising expert authority. This stance sees animal research as a 'public good' requiring protection from an unruly public for the greater good. However, I argue that the conventional closed-door, expert-driven ethical review model lacks justification in light of contemporary 'responsible' research agendas. This suggests the crucial future role of comprehensive PEwE scholarship. In my view, however, its repercussions are even more profound, raising fundamental questions about what can be claimed of 'ethical review' systems and the weight behind a favourable ethical opinion. This is especially troubling for animal research, where public acceptability has been precarious for decades. Nevertheless, its implications are pertinent for all kinds of research ethics committees (including human and non-scientific research reviews) that fail to integrate the will of the public they claim to work to protect.

Appendices

Appendix A: Table of Stakeholder Organisations

Organisation	Context
European Commission	European Commission published Directive 2010/63 which required that member states amend their animal research regulation – this was, therefore, the impetus for the 2013 amendment of ASPA.
UK Government	
ASRU (Animals in Science Research Unit)	This Unit within the Home Office is responsible for implementing, regulating and enforcing ASPA (through inspection, licensing and policymaking).
IAT (Institute of Animal Technology)*	A professional body representing animal technologists (who are responsible for the care and husbandry of animals) – seeks to provide information on developments in the field, award professional status and set professional standards.
LASA (Laboratory Animal Science Association)*	A professional body representing scientists – seeks to advance scientific understanding of the use of lab animals
LAVA (Laboratory Animal Veterinary Association)*	An autonomous specialist division of the British Veterinary Association – supports and advises veterinary surgeons/students working in the care/use of animals in biomedical research
RSPCA (The Royal Society for the Prevention of Cruelty to Animals)*	Largest animal welfare organisation in the UK, its primary goal is to promote the replacement of animal experiments with humane alternatives and until this is achieved liaising with regulators/users of animal research – often deemed less radical than other welfare charities
NC3Rs (National Centre for the 3Rs)	A scientific research organisation (established by the Medical Research Council). Interested in the discovery/application of new technologies/approaches for replacing, refining and reducing the use of animals in scientific research – also funds research to this aim. One document published by NC3Rs was done so on behalf of (and in conjunction with) the major research councils and funding bodies including BBSRC, Defra,

	EPSRC, MRC, NC3Rs, NERV, Wellcome Trust and AMRC so is also explored in the context of funders.
Norecopa	Norway's 3R centre which places a key focus on the better planning of scientific research to improve its reproducibility, the centre works closely with experts from the UK.
UKRIO (UK Research Integrity Office)	An independent charity that provides advice to ensure 'good practice' and 'research integrity' in academia.
UAR (Understanding Animal Research)	A not-for-profit British membership organisation that seeks to disseminate information publics/media/policy-makers on why animals are used in research/it's benefits Created the Concordat for Openness (currently signed by 124 organisations) as a commitment to fostering more transparency in the field

Appendix B: List of Documents Used (organised by stakeholder stream)

Government Sector Stream:

No.	*Publisher*	*Title*	*Year*	*Author (if available)*	*URL*
1.	European Commission	*Caring for Animals: Aiming for Better Science: Animal Welfare Bodies and National Committees*	(2014)		https://op.europa.eu/en/publication-detail/-/publication/fca9ae7f-2554-11e9-8d04-01aa75ed71a1
2.	UK Gov	*Consolidated Version of Animals (Scientific Procedures) Act, 1986*	(2014 [2013])		https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/619140/ConsolidatedASPA1Jan2013.pdf
3.	Home Office	*Guidance on the Operation of Animals (Scientific Procedures) Act, 1986*	(2014)		https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/662364/Guidance_on_the_Operation_of_ASPA.pdf
4.	ASRU	*Code of Practice for the Housing and Care of Animals Bred, Supplied or Used for Scientific Purposes*	(2014)		https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/388535/CoPanimalsWeb.pdf
5.	ASRU	*The Harm-Benefit Analysis Process: New Project License Applications*	(2015)		https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/660238/Harm_Benefit_Analysis__2_.pdf

Professional/Learned Societies & Animal Welfare Charity Streams:

No.	*Publisher*	*Title*	*Year*	*Author (if available)*	*URL*
6.	LASA, LAVA & IAT	*Guiding Principles for Named Training and Competency Officers, Named Information Officers and Home Office Liaison Contacts Working Under ASPA*	(2016)		https://www.lasa.co.uk/wp-content/uploads/2018/05/Guiding-Principles-for-Named-Persons-2016.pdf
7.	LASA & RSPCA (2017)	*Developing Induction Materials for AWERB Members*	(2017)	Jennings, M., Smith, J., Hawkins, P., Lilley, E., Berdoy, M., Farmer, A-M., Kerton, A., Law, B., Stanford, C., Sinnett-Smith, P., Whitfield, L. and Anderson, D.	https://www.lasa.co.uk/wp-content/uploads/2018/05/AWERB-IP-Final.pdf
8.	LASA & RSPCA	*Guiding principles to help deliver the ethics learning outcomes of module 2 for personal licensees*	(2020)	Jennings, M. & Berdoy, M.	https://www.lasa.co.uk/wp-content/uploads/2021/01/LASA-RSPCA_Guiding_principles_ethics_LOs_module2.pdf
9.	LASA & RSPCA	*Guiding Principles on Good Practice for Animal Welfare and Ethical Review Bodies*	(2015)	Jennings, M., Berdoy, M., Hawkins, P., Kerton, A., Law, B., Lilley, E., Reed, C., Standford, C., Sinnett-Smith, P., Smith, D., Whitfield, L. and Farmer, A-M.	https://www.lasa.co.uk/PDF/AWERB_Guiding_Principles_2015_final.pdf
10.	RSPCA, ESRC, UoN, LASA, IAT & LAVA	*Delivering an Effective Ethical Review: The AWERB as a 'Forum for Discussion'*	(2017)	Hawkins, P. and Hobson-West, P.	https://science.rspca.org.uk/documents/1494935/9042554/AWERB+forum+for+discussion+booklet.pdf/36fdb4db-8819-cbd3-89ec-c9a7e67bf07c?t=1583938525299

11.	RSPCA	*Resource Book for Lay Members of Ethical Review and Similar Bodies World Wide (3rd Ed.)*	(2015)	Jennings, M. and Smith, J.A.	https://science.rspca.org.uk/documents/1494935/9042554/A+resource+book+for+lay+members+of+ethical+review+and+similar+bodies+worldwide+-+third+edition+%282015%29+%28PDF+6.58MB%29.pdf/2007deb5-5095-13fe-add2-87dd4eba0fd2?t=1552913461515

Research Sector Stream:

No.	***Publisher***	***Title***	***Year***	***Author (if available)***	***URL***
12.	NC3Rs	*Reporting Animal Research: Explanation and Elaboration for the Arrive Guidelines 2.0*	(2020)	Percie du Sert, N. *et al.*	https://journals.plos.org/plosbiology/article?id=10.1371/journal.pbio.3000410
13.	Norecopa	*PREPARE: Guidelines for Planning Animal Research and Testing*	(2017)	Smith, A.J., Clutton, R.E., Lilley, E., Hansen, K.E.A. & Brattelid, T.	https://journals.sagepub.com/doi/pdf/10.1177/0023677217724823
14.	UKRIO	*A Primer on Research Involving Animals*	(2019)	Osborne, N. and Woodhams, J.	https://ukrio.org/wp-content/uploads/UKRIO-Research-Integrity-a-primer-on-research-involving-animals-V1.0-Feb-2019.pdf

Funder sector stream:

No.	Publisher	Title	Year	Author (if available)	URL
19.	NC3Rs (Funded by: BBSRC, Defra, EPSRC, MRC, NC3Rs, NERV, Wellcome & other charities)	*Responsibility in the Use of Animals in Bioscience Research: Expectations of the Major Research Council and Charitable Funding Bodies*	(2014)		https://nc3rs.org.uk/sites/default/files/documents/Guidelines/Responsibility%20in%20the%20use%20of%20animals%20in%20bioscience%20research%202019.pdf

Appendix C: Focus Group Schedule

University of Nottingham
UK | CHINA | MALAYSIA

Focus Group Schedule
April 2022

Project title: Ensuring the Social Legitimacy of Animal Research: Comparing Public and Policy Expectations for Ethical Review

Researcher: Kathleen Salter

Section 1: Discussing an object

We asked you to bring along an object from your home that you believe to have been subject to a process that has involved animal research. This activity was designed to help us explore our relationship with animal research in a more personal and concrete way.

Q1 - What object have you brought, and why did you choose this object?

Q2 - When you think about the process of its development who/what do you imagine were involved in its production (including other humans, which animals)?

Q3 - How did you feel doing this activity? Had you ever thought about animal research when using your object before doing this activity?

Section 2: Defining ethical science

Quite often stakeholders who are involved in the animal research issue talk about 'ethics' or 'ethical science', I want to take a minute to unpack this a little with you. These are ongoing debates in science an academia, so I should stress that is no right answer to this.

Q1: I'm interested in the question 'can animal research ever be ethical?' What would that look like?

Q2 Is a piece of animal research 'more' ethical if the animals are cared for before, during and after the procedure? E.g. well fed and watered, kept in appropriate environmental conditions, pain minimised

Q3. Thinking about the objects we all discussed earlier, what would make their production, manufacture or marketing 'ethical'? Does it matter who benefits? Does it matter who decides it should go ahead?

Section 3: Discussion of AWERBs

One aspect that I am particularly interested in for my research are committees called Animal Welfare and Ethical Review Bodies, sometimes shortened to AWERBs. I will now share a definition in the chat.

AWERBs are committees that are required by law in all establishments (such as universities or private companies) that use, breed or supply research animals. The AWERB reviews each proposed research project that uses animals and advises whether the establishment should support the project. Its role includes considering whether the researchers have effectively searched for alternative methods that avoid the use of animals and whether they have done all they can to reduce suffering of the animal and improve animal welfare.

Q1 - Who do you think sits on these committees, and who should (with what expertise and interests)?

Q2 – How do you think these committees should work? How do you imagine them 'doing ethics'?

Q3 – Some of these committees appoint 'lay members' – non-scientific members, should have no vested interest in the research – would you do this role? What issues can you imagine they face?

Q4 - If you had the opportunity to ask a question to these committees, what would you want to know?

Section 4: Concluding

I am particularly interested to hear how you felt participating in this session today

Q1 *Was there anything that surprised you?*

Q2 Is there anything you expected to be asked that you were not? Or anything you think is relevant that we haven't covered?

Q3 Any final comments?

- **Give them the completion code from Prolific – ask them to manually submit it on their Prolific account. Let them know they will be paid shortly.**
- **Thank participants for their time, remind them to get in touch if they have any questions or concerns – I will regularly check my Prolific account.**
-

Appendix D: Participant Information Sheet

Please note: *Because this project used the online recruitment agency Prolific this participant information was provided through the Prolific interface and therefore was not formally provided in this form. All the below information was provided to potential participants through the website, however, and participants provided their consent through a MS Forms survey. Time was taken at the start of focus groups to ensure all participants had access to this information.*

Participant Information Sheet & GDPR Privacy Notice

Section 1 - Participant Information Sheet

Date: **01/02/2022**

Title of Study: **Ensuring the Social Legitimacy of Animal Research: Comparing Public and Policy Expectations for Ethical Review**

Name of Researcher(s): **Kathleen Salter**

What is the purpose of the study?

This study involves a series of online focus groups (using Microsoft Teams) and will explore expectations for the 'ethical review' process surrounding medical and scientific laboratory animal research. For this reason, should you currently work with research animals (or in the ethics thereof) in a professional capacity, you unfortunately will not be able to take part.

In the UK, animal models are used in research for a number of reasons. While public attitudes around animal research have previously been explored by social scientists, there is little research so far into publics' expectations of the "ethical review process" that takes place.

For this reason, you will be asked to engage in a group conversation about your expectations of *ethics*, *ethical review* and the role of an *ethical review body*, including what you imagine the process entails. You are <u>not</u> required to have any previous knowledge of the regulatory system surrounding animal research to take part, nor are you required to have a fully formed position on the topic that you will be asked to defend to others. Instead, the purpose of this research is to understand the *relationship* between the public, ethical review, and laboratory animal research in the UK, and the conversation will centre on this.

As an icebreaker for the session, you are also asked to bring along **one object** from your home that you believe to have been subject to a process that has involved animal research. This will act as a prompt to begin the discussion, and can be anything, there is no right or wrong answer here.

Why have I been invited?
You are being invited to take part because of your involvement with 'Prolific' and have indicated an interest in taking part in online group interviews. We are inviting 20-30 participants like you.

Do I have to take part?
It is up to you to decide whether or not to take part. Even after indicating your interest/consent, you have the continued right to withdraw yourself from the study at any point before the focus group session, and up to 2 weeks after the interview has taken place by contacting me (you may however need to keep a note of your Prolific ID in order for me to identify your contributions in focus group transcripts). This wold not affect your legal rights.

What will happen to me if I take part?
If you decide to take part, you will be invited to join me (Kathleen: https://www.nottingham.ac.uk/Sociology/People/kathleen.salter) and approximately 4 other participants in an online focus group using Microsoft Teams. The actual focus group will take around 2 hours (with a short comfort break mid-way). You are also requested to **bring along an object from your homes that you believe to have been subject to a process that has involved animal research,** a group discussion of these objects will act as a session icebreaker.

Once you have had the chance to read this information and wish to take part, you should select the below URL which will take you to a Microsoft Form where you will be able to indicate your expression of consent, and will be asked to indicate your availability to take part. Before checking 'yes' to the consent questions, you are very welcome to ask me any questions via prolific. I will then contact you with further information about date of your session, and with a Microsoft Teams meeting link, along with some detailed instructions on how to log onto Microsoft Teams anonymously so other participants do not have access to your name or email address. This does not require you to have downloaded Teams software, or to have a Teams account, you can log in online.

To participate you will need to have access to a **computer or laptop**, a stable **internet connectio**n, a working **camera**, and either a **headset or a working speaker** and **microphone** set. You will also need a quiet place to take part where you feel comfortable and safe to speak freely. You are not required to have any knowledge of animal research practice in the UK, nor are you required to have an in-depth knowledge of the regulatory process. I will provide conversation starters and prompts throughout.

At the end of the session I will provide you with a 'completion code' to copy and paste manually when you leave the session and return to Prolific.

Expenses and payments
Participants will be provided a financial inducement of 10GBP p/h (a total of

£20 for the two hour focus group session) and will be paid to you by Prolific shortly after completion of the focus group.

What are the possible disadvantages and risks of taking part?
While we will work with you to ensure you log on anonymously from other participants, you may have some concerns about the issues of undertaking research online and potential additional security concerns. While your email address will be obscured please be aware that your confidentiality cannot be absolutely guaranteed in a group setting such as this. Therefore, we kindly ask that participants please respect one another's privacy by not recording any part of the meeting or discussing who attended this meeting.

What are the possible benefits of taking part?
We cannot promise the study will help you personally (beyond receiving £20 as compensation for your time) but the information we get from this study may help to inform academic and policy understandings of the relationship between the public, laboratory animal research, and 'ethical review'. Research such as this is currently lacking despite its potential significance to the area.

What if there is a problem?
If you have a concern about any aspect of this study, you should ask to speak to the researchers who will do their best to answer your questions. If you remain unhappy and wish to complain formally, you can do this by contacting the School Research Ethics Officer. All contact details are given at the end of this information sheet.

Will my taking part in the study be kept confidential?
We will follow ethical and legal practice and all information about you will be handled in confidence, and according to Prolific guidelines.

If you join the study, the data collected for the study will be looked at by authorised persons from the University of Nottingham who are organising the research. They may also be looked at by authorised people to check that the study is being carried out correctly. All will have a duty of confidentiality to you as a research participant and we will do our best to meet this duty.

Your personal identifying data (beyond basic demographic information you have provided to prolific) will not be collected in this study (per Prolific guidelines) and so identifiable research data such as name, or email address will not be stored. Anonymised data may also be stored in data archives for future researchers interested in this area.

Although what you say in the interview is confidential, should you disclose anything to us which we feel puts you or anyone else at any risk, we may feel it necessary to report this to the appropriate persons.

What will happen if I don't want to carry on with the study?
Your participation is **voluntary** and you are free to withdraw at any time during the focus group session and up to **2 weeks after** the session, without giving any reason, and without your legal rights being affected. If you withdraw then the information collected so far may not be possible to extract and erase after **2 weeks** and this information may still be used in the project analysis.

What will happen to the results of the research study?
The results of this study will be analysed and written up as part of a doctoral thesis in pursuit of a postgraduate research qualification, for which the final submission date is in September 2024. You should also be aware that there is also a possibility that the research *may* result in further publications that may be further quoted in publications, reports, web pages and other research outputs such as conference presentations. The PhD thesis will also be submitted to the University's online thesis archive and will be made publicly accessible (either immediately or occasionally after an embargo period). All identifiable information will be removed, and you will not be identified in any report or publication.

Who is organising and funding the research?
This research is being organised by the University of Nottingham (in the department of Sociology and Social Policy) and is being funded by the Economic and Social Research Council (ESRC). Aspects of the project design have also benefitted from mentorship from senior staff at the Royal Society for the Prevention of Cruelty to Animals (RSPCA).

Who has reviewed the study?
All research in the University of Nottingham is looked at by a group of people, called a Research Ethics Committee (REC), to protect your interests. This study has received a Favourable Ethical Opinion by the School of Sociology and Social Policy Research Ethics Committee.

Further information and contact details

Researcher: Post Graduate Research Student, School of Sociology and Social Policy. Email: Kathleen.salter@nottingham.ac.uk

Supervisor/PI: Prof. Pru Hobson-West, School of Sociology and Social Policy. Pru.Hobson-west@nottingham.ac.uk

Dr Melanie Jordan, Research Ethics & Integrity Officer, REC Chair & Associate Professor in Criminology. email: melanie.jordan@nottingham.ac.uk, +44 (0)115 74 87284/ 95 15410

Section 2 - Privacy information for Research Participants

For information about the University's obligations with respect to your data, who you can get in touch with and your rights as a data subject, please visit: https://www.nottingham.ac.uk/utilities/privacy.aspx.

Why we collect your personal data
We collect personal data under the terms of the University's Royal Charter in our capacity as a teaching and research body to advance education and learning. Specific purposes for data collection on this occasion are to understand more about public expectations for ethical review of animal research in the UK. The data will be gathered and analysed in pursuit of PhD study, doctoral thesis and associated outputs

Legal basis for processing your personal data under GDPR
The legal basis for processing your personal data on this occasion is Article 6(1a) consent of the data subject.

How long we keep your data
The University may store your identifiable research data for a minimum period of 7 years after the research project finishes. The researchers who gathered or processed the data may also store the data indefinitely and reuse it in future research. Measures to safeguard your stored data include storing recordings of focus group audio and completed consent forms on One Drive per the University security policy and Restricted Data Handling Policy. All audio recordings will be deleted once they have been transcribed (at which point participants will have been assigned an anonymised 'ID' in place of names), ensuring all identifying information is removed from these transcripts and not used or quoted in the research.

Who we share your data with
Your data may also move with the researcher who collected your data to another institution in the future. Extracts of the focus group may be anonymised (using an 'participant ID' in place of your name(, and then used in published works that are posted online for use by the scientific community.

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