

(Not) Knowing and (Not) Caring About Animal Research: An Analysis of Writing from the Mass Observation Project

Renelle McGlacken

*School of Sociology and Social Policy, University of Nottingham, United Kingdom/
renelle.mcglacken@nottingham.ac.uk*

Abstract

Animal research remains a practice marked by controversy and moral dilemma. However, UK science-society dialogues on the issue are increasingly managed via one-way transmissions of information which construct publics as passive and attribute their concerns to a lack of 'correct' knowledge. Challenging such assumptions, this paper questions how and why people actively manage their interactions with animal research through entangled practices of knowing and caring. Based on an analysis of writing from the UK Mass Observation Project, this paper explores difficulties and discomforts associated with animal research which can cause strategic withdrawals from engagements with the topic. In doing so, it extends existing concepts of 'uncomfortable knowledge' (Rayner) and 'strategic ignorance' (McGoey) to develop novel concepts of 'uncomfortable' and 'strategic' care. Finally, in examining desires to respond to animal research, I engage with Haraway's notion of 'response-ability' to introduce the concepts of 'responsive caring' and 'responsive knowing'.

Keywords: animal research, knowing, caring, ignorance, discomfort, Mass Observation Project

Introduction

Dominant modes of examining the views of publics on animal research have tended to concentrate on assessing 'what' publics know about the issue, weighing this against the scientific 'facts', and judging civic contributions as either scientifically congruent or not. Despite the thorough critique levelled at this 'deficit-model' approach to lay understandings of techno-scientific issues (Millar and Wynne, 1988), which, of course, often concern more than just the 'technoscientific', such an approach persists in UK science-society dialogues around animal research. Seeking to address this

situation, this paper instead explores the practices of knowing and not-knowing and caring and not-caring about animal research, asking how knowledge of the topic is perceived and negotiated and what role care plays in interactions with it.

Through the recent emphasis on openness and transparency in animal research, a shift encapsulated in the UK via the 2014 launch of the *Concordat on Openness on Animal Research* (UAR, 2014), societal concerns around the issue are, in part, cast as the result of secrecy in the bioscience sector (McLeod and Hobson-West, 2015; Mills



This work is licensed under
a Creative Commons Attribution 4.0
International License

et al., 2018). Such explanations for the controversy that animal research continues to generate lend to assumptions that publics are ignorant and reinforce the authority of scientific experts in 'correcting' an absence of knowledge on the practice and regulation of biomedical science in the public domain. For instance, Martinez-Sanchez and Leech (2015) claim that a "lack of transparency and openness in many European research centres encourages misconceptions about animal research" (Martinez-Sanchez and Leech, 2015: 1). Hence, they determine that 'without reliable, authoritative communication from the biomedical sector, public understanding can be manipulated through "leaks" and "exposés" that do not accurately reflect either the rationale and need for the research or the ethical standards to which such research is held' (Martinez-Sanchez and Leech, 2015: 1). In seeking to regain control over societal opinion on animal research then, the Concordat encourages bioscience institutions to better communicate with 'the public' about how and why they use animals.

However, in considering not simply *what* individuals know (or do not know) about animal research but *why* this is so, this paper challenges assumptions that increased scientific or regulatory information will alleviate societal concerns around the practice (Festing and Wilkinson, 2007). Rather than judging levels of awareness or the 'correctness' of knowledge held, in analysing writing from the UK Mass Observation Project (MOP), I question how and why people actively manage their interactions with animal research through entangled practices of knowing and caring. In exploring this, I examine difficulties and discomforts associated with the topic, such as the emotional toll of knowing, conflicting care obligations, and civic (in)capacities to bring about change in this area, all of which may encourage or necessitate strategic withdrawals from engagements with animal research. To understand the interrelation of knowing and caring around this issue, the paper draws on concepts from the sociology of ignorance and care ethics. In doing so, it engages with and, in parts, develops conceptualisations of (not) knowing and (not) caring to focus on the themes of uncomfortable knowledge (Rayner, 2012) and uncomfortable care, strategic

ignorance (McGoey, 2012) and strategic care, and finally, responsive knowing and responsive caring.

In contesting deficit-model fixations with public knowledge on animal research and emphasising the interwoven nature of knowing and caring, this paper thus also seeks to address the absence of care lenses in this area. Research on care practices related to animal research has tended to concentrate on the laboratory, with a favouring of ethnographic methods to explore how multispecies care relations emerge in such spaces (Svendsen and Koch, 2013; Giraud and Hollin, 2016; Greenhough and Roe, 2018; Friese and Latimer, 2019), which are often discussed as constitutive of a specific 'culture of care' (Davies et al., 2018). The achievement of a culture of care in bioscience facilities is encouraged by regulatory bodies. In the UK, this includes the government's Animals in Science Regulation Unit (ASRU), which defines a good culture of care as "an environment which is informed by societal expectations of respectful and humane attitudes towards animals used in research" (ASRU, 2015: 4). As notable in this definition, wider societal values around the appropriate treatment of animals are taken as informing care relationships in the laboratory. However, to date there has been little attention given to how publics and representations of publics feature in such care networks. With focus directed inside the physical space of the laboratory in which care is emphasised as the performative product of a situated intersubjectivity, a "common existential corporeal experience" (Svendsen and Koch, 2013: 124), how publics who rarely enter the laboratory space may care about and for those involved appears currently overlooked.

Indeed, concentrating on knowledge, UK animal research advocacy group Understanding Animal Research (UAR) claim that because "much opposition to animal research is based on misinformation" it is "necessary to be open and informative in our public messaging about how animal research is conducted with ethical oversight and regard for the 3Rs" (UAR, 2019: 2). However, in the first instance, such narratives of educating publics on animal research presume that publics actually *want* to know. Yet, as this paper aims to show, relating to the scientific use of animals is not only

a matter of knowing but also of caring, meaning that how we manage our knowledge or ignorance of an issue is always also part of a practice of care. As van Dooren (2014) explains, the “obligation to ‘know more’ emerges as a demand for a kind of deep contextual and critical knowledge about the object of our care, a knowledge that simultaneously places us at stake in the world and demands that we be held accountable” (van Dooren, 2014: 293). In the case of animal research, this paper will argue that it is precisely the responsibility that knowing confers upon publics that poses moral discomfort and, for some, necessitates the act of turning away.

As I will demonstrate in this paper, what might look like detachment from the issue of animal research may instead reflect a negotiation of personal responsibility and (in)capacity for action. Such insights are important for those invested in fostering care for issues with widespread political and ethical ramifications, what some have termed ‘wicked problems’ (Rittel and Webber, 1973), those characterised by a plurality of definitions of what the inherent problem actually is. Given the tangled nature of wicked problems, the ways in which they are produced by and knotted with other problems, generating care towards their resolution can be fraught with feelings of powerlessness and futility. Recognising processes of knowing and caring as enmeshed in broader structures of power that prevent some from feeling *able* to engage in either practice thus unsettles the onus placed on individuals, instead directing attention to existing barriers to knowing and caring.

Method: The Mass Observation Project

Unlike the use of opinion polls which dominate the UK dialogue around animal research (Hobson-West, 2010), this paper draws on a novel resource for rich and reflexive writing, the Mass Observation Project (MOP). Described as a “national life writing project about everyday life in Britain” (Mass Observation, 2015), the MOP maintains a panel of voluntary correspondents from across the UK, referred to as ‘Mass Observers’, who are engaged with through ‘Directives’, a set of questions or prompts on a particular topic. Directives

span a varied range of topics and have been used to investigate a variety of areas, from gardening (Bhatti, 2014) to genetic modification (Haran and O’Riordan, 2018), but can all be brought together under the heading of ‘everyday life’.

In responding to Directives, the writing of Mass Observers can take myriad forms. As former Mass Observation Director (1990–2008) Dorothy Sheridan (1993) describes, written responses may include “letter-writing, answering questionnaires, being interviewed, keeping a diary, writing a life story” (Sheridan, 1993: 34). With no single genre of writing proving to be the most appropriate, Sheridan (1993: 34) characterises those involved in Mass Observation as engaged in “the process of forging a new genre: the ‘Mass-Observation directive reply’”. Although, of course, MOP writing is a relational product and, as Pollen (2014) indicates, “writing to MO is always solicited and consequently shaped by the nature of the questions asked and the contributors’ conceptualisation of the larger project” (Pollen, 2014: 10).

Given the MOP’s commitment to documenting the ‘ordinary’ and ‘everyday’, Mass Observers may view their role in the Project as one of local historian, documentarian, or citizen journalist (Bloome et al., 1993; Pollen, 2013), situating their views in local and broader contexts and often incorporating those of others. This reflexivity and attention to positionality means that Mass Observers often muse over not only what they know but also what they do *not* (Kramer, 2014). In this way, MOP writing illustrates the plurality of narrative and knowledge, disrupting the privileging of a singular, unified telling. Because of this, analysis of MOP writing calls for approaches which steer away from generalisations and quantifications (Pollen, 2013), instead demanding attention to the particularity of MOP writing and its emergence within the wider project.

Though the writings of Mass Observers will be discussed in this paper as part of wider societal feelings towards animal research, it is pertinent to state that Mass Observers are not intended here to act as a proxy for ‘the public’. Indeed, this notion of the ‘general public’ is not neutral yet is often constructed in animal research dialogues in ways which falsely portray neutrality (Davies et al., 2020). Rather, in offering analysis of MOP writing,

this paper aims to emphasise the necessary situation of Mass Observers in their particular, yet shared, 'everyday' worlds, demonstrating the rich insights that attention to the micro in the macro can generate for studies of how publics relate to science.

This paper is based on an analysis of responses to the 2016 MOP Directive on 'Using animals in research' commissioned by the University of Nottingham, which received a total of 159 responses (72 postal and 87 electronic). All accounts were initially read in their original state (as word-processed responses and hand-written responses which were photographed at the archive and converted into PDFs) and uploaded onto NVivo 12 to provide word search functionality and an easier handling of the large dataset. In analysing the accounts, this study takes a constructionist thematic analytical approach, which, as Braun and Clarke (2006) describe, "examines the ways in which events, realities, meanings, experiences and so on are the effects of a range of discourses operating within society" (Braun and Clarke, 2006: 81). In employing this approach, I followed Braun and Clarke's (2006: 87) six steps of: 1) familiarising yourself with your data; 2) generating initial codes; 3) searching for themes; 4) reviewing themes; 5) defining and naming themes; and 6) producing the report. This allowed me to remain at a meta-analytical level, looking at themes across the MOP responses collectively and focusing on relational processes which structure interactions with animal research, such as knowing and caring.

In exploring the three dualisms which structure this paper, those of uncomfortable knowledge and uncomfortable care; strategic care and strategic ignorance; and responsive caring and responsive knowing, each section will discuss excerpts from the writings of different Mass Observers. Mass Observers will be referred to by the identification numbers they are given by the Project and, in the aim of preserving their style of writing and formatting, when reproducing their writing here I have tried to include grammatical errors, typos, and paragraphing. Only spelling and grammatical errors that might seriously obscure the coherence of the extracts have been amended.

In the first section of this paper, I discuss the ways in which animal research is bound up with caring for the self, other humans, and other animals. To make sense of these dynamics, touching on the tensions that can emerge between them in deciding whose care should come first, I expand on Rayner's notion of 'uncomfortable knowledge' to account for its entanglement with 'uncomfortable care'. In the second section, I build on McGoey's concept of 'strategic ignorance' to introduce the concept of 'strategic care' as a way of exploring how Mass Observers convey ideas of not wanting to know and not wanting to care. In expressing a need to withdraw from knowing or caring about animal research and the uncomfortable knowledge that it presents, I suggest that some Mass Observers appear to employ practices of caring and knowing *strategically*, prioritising some care relations over others or deliberately turning away from the issue. Finally, in the third section, I discuss MOP extracts which demonstrate ways in which the issue of animal research requires some kind of response. This is made sense of via new concepts of 'responsive caring' and 'responsive knowing', as a way of highlighting possible alternatives to the withdrawal of knowing and caring. In doing so, I emphasise the centrality of acknowledging one's responsibility to care and know and draw attention to the need to cultivate the ability to *respond* in such ways.

The problems of attending to animal research

Rayner (2012) describes 'uncomfortable knowledge' as 'disruptive knowledge' (Rayner, 2012: 113), that is, knowledge which is in tension with our simplified ways of understanding the world. Knowing about animal research can be disruptive in that recognition of one's complicity in and benefiting from the practice (i.e. as a patient or medical consumer), whilst knowing of the confinement and killing of animals involved, threatens to disturb self-perceptions built upon care for and about non-human animals. In thinking with Rayner's concept around the topic of animal research, I will introduce the notion of 'uncomfortable care', not as a counterpart to the former, but, rather, as an integral component at the core of uncomfortable knowledge. Indeed, because

knowing and caring are entwined, so too are uncomfortable knowledge and uncomfortable care. It is due to our *caring* about others, both human and non-human, that *knowing* about animal research may be uncomfortable and, as will be discussed in the second section, for some, identified as an area to be avoided.

In acknowledging the role of care in motivating (dis)engagements with animal research, this section will outline three ways in which knowing about the issue may be experienced as uncomfortable. These involve the disturbing impact that knowing about animal research can have on existing care obligations we have for the self, the humans we love, and the other animals we love. In discussing how each of these care relations can make knowing about animal research uncomfortable, the messy entanglement of each in the animal research domain will be illustrated, complicating assumptions about the mobilisation of species boundaries in constructing moral communities and obligations of near and far care.

Caring for the self

In articulating discomfort towards the topic of animal research, some Mass Observers describe their own state of health as preventing them from knowing or caring about the issue. For such Observers, feeling *too close* to animal research, due to dependence on medical treatments produced through the use of animals, acts as an obstacle to caring about the issue. Feeling somewhat dependent on the scientific use of animals in this way meant that the Directive was a challenging topic for some, as the following Observer discusses –

This is such a difficult topic for me! I know that as a cancer patient for the last 11 years my treatments will probably, highly probably, been tested on animals and I love animals and believe that as creatures of the world they have a right to a good and free life.

[...]

My views have changed, perhaps because of my condition and perhaps because my husband wants me to live longer. I try not to think too much about this when I have my chemotherapy. (Mass Observer A4820)

As this Observer (A4820) suggests, animal research may prove a particularly difficult topic to engage with when writing from the position of a current (or future) patient. In sensing a tension between their values towards the treatment of animals and their reliance on medical interventions as a cancer patient, this Observer's quandary highlights how multiple subjects are implicated in caring about animal research. In this case, such care relations involve oneself as a patient, animals involved in medicine production, and loved ones whose welfare and wishes are here entwined with the patient's own. In feeling invested or complicit in animal research through a reliance on medical interventions, knowing and caring about animal research can be distressing and raise tensions between one's care priorities, unsettling hierarchies of whose care should come first.

Another Mass Observer (H1470) expressed a similar sentiment in writing about their dependence on insulin and the experimentation with dogs involved in its development –

Unfortunately, I am having to take commercial medicines daily to stay alive. I need insulin twice a day besides other medications. I do know the story of how insulin came about. It breaks my heart having to take this medication as I often think as to how many dogs were sacrificed and in severe pain, in order that this medicine be created. (Mass Observer H1470)

Similar to the previous correspondent (A4820), this Observer (H1470) expresses a sense of regret towards their continual use of a treatment developed through the use of animals. Importantly, this Observer's feelings towards their insulin use suggests that the emotional distress caused by the use of animals in developing medicines is not necessarily lessened if said animal use was in the 'past'. Such insights complicate the assumption that transparency around the role of animals in medicine development will boost public support, as has been suggested in the proposal to disclose the use of animals in medicine labelling (Collins, 2011). Rather, past or ongoing use of animals in the research and development of a treatment that one is now reliant on can still be meaningful and morally problematic to those who care about research

animals, with certain species, such as dogs in this case, arguably having particular significance.

Moreover, being reliant on medications at the time of writing might make thinking about animal research not only uncomfortable, but further, unreasonable. In periods of acute or longstanding illness it may be difficult for individuals to consider their relation to the practice beyond an individual need for effective medical treatment. As can be inferred from the following Mass Observer (M5113), in times of ill health, broader thinking around medical consumption and animal research may be impeded –

It is not fair that some diseases get more research funding than others. It is not fair when medicines and treatments exist but people cannot afford to have them because companies want to make a profit as well as support research and development. But it is not a perfect world. All I want when I buy medicine is to feel better. If you want me to think more widely, ask me when I'm not ill! (Mass Observer M5113)

As captured here, broader concerns than simply the need for medical treatment when ill are raised by this Mass Observer (M5113), as they touch on the (un)fairness of funding priorities in biomedical research and access to healthcare. However, such concerns are drawn back to the Observer's principal interest in the role of medicines to make one feel better when unwell. Significant here is the suggested difficulty to care *about* others when one needs to be cared *for* themselves, echoing Smith's (1998) characterisation of disadvantaged groups who might be "too preoccupied with feeling the need for care, or with the difficulty of providing it, to think of much else" (Smith, 1998: 16). Such analysis reveals that investments in one's self-care, represented here in current or future medicine use, can pose an obstacle to caring about the process by which medical treatments are produced.

Caring for the humans we love

As well as representing a way to care for oneself in current or future illness, biomedicine can also signify a way to care for the health of loved ones, with such care obligations, again, making knowing about animal research uncomfortable. In con-

ceding the need for animal research and the role it is said to play in producing and advancing health-care treatments, some Mass Observers articulate a sense of being torn between their values towards the treatment of animals and their stake in (current or future) medical interventions. As the following Mass Observer (D2585) suggests –

Just seeing written, or heard said, the term 'Laboratory Animal Research' makes me feel very sad. Of course I realise over many years cures and treatment for many illnesses, some of which were terminal some years ago, medicines now widely used safely would not have been 'found' without long years of research and experimentation, and probably members of my family, friends and acquaintances have benefited from this research, but the poor animals that have been kept sometimes in poor conditions who cannot speak but have been used to find some of the cures, make me very emotionally upset. (Mass Observer D2585)

This Observer (D2585) opens their response to the Directive by expressing their sadness upon encountering the words 'laboratory animal research'. They go on to acknowledge animal research as a facilitator of medical advances, which have personal significance, yet return to the mistreatment of vulnerable animals ("who cannot speak") and the emotional impact of this. The tension felt here between wanting the expected benefits of animal research, i.e. effective medical treatments, whilst also not wanting animals to be used in such a way means that they find thinking about the practice particularly difficult.

As suggested earlier, caring for one's own and loved ones' health *through* the use of animals in biomedical research is often tied to future imaginaries which may hold illness. In discussing the need for animal research to produce medical interventions which may safeguard against future illnesses, relations involving those whose care is legally obliged, such as children, were significant amongst Mass Observer accounts. As suggested in the following excerpt, the construction of animal research as a way to channel care to others, in current or future illness, can generate moral conflict –

Not an area I have thought about, it is difficult if a loved one or I became very ill and no drug was available or a new one may be being developed then testing would certainly be considered however should animals be tested on, no oh what a dilemma. Feel I am not being useful in this topic. (Mass Observer C4988)

As suggested by this Mass Observer (C4988), ethical relating to animal research can be bound up with hypothetical and future-oriented modes of caring, in which lives are pitted against one another. In caring not only for one's own health and wellbeing but also that of loved ones, it may be that using animals for biomedical research offers a sense of health security for potential futures and thus any resistance to this constitutes a failure to fulfil one's caring responsibilities. In this way, the ethical problem posed by the (mis) treatment of animals in biomedical research is juxtaposed with the (mis)treatment of loved ones by depriving them of potential medical treatments. Using animals in research thus becomes a way to protect oneself and loved ones against the threat of illness.

Therefore, whilst such interpretations of whose care comes first might initially suggest the pre-eminence of human needs over those of non-human animals, this analysis stresses the importance of familial bonds. This suggests that the ways in which we relate to animal research are not merely situated in Ryder's (1989) concept of 'speciesism', i.e. the prioritisation of human interests above those of other species; rather, they are enmeshed within relationships which are interpersonal rather than simply genetic. The assumed partiality to family members before unknown, distant, or indeed, *different* others, features often in the rhetoric of animal research advocacy organisations. In pitting the lives of family members, particularly children, against the lives of research animals, such groups often construct the choice that publics have to make on the matter as one of either/or and life/death. This is captured succinctly in a billboard campaign by US-based biomedical research advocacy organisation The Foundation for Biomedical Research (FBR) which juxtaposed an image of a white rat, symbolic of the laboratory, with that of a young girl and asked its viewers "Who would you rat/her see live?" (see Harrison,

2011). However, as illustrated, the use of animals for primarily human gain does not necessarily sit easy. Furthermore, as the following subsection will examine, the making of family and kin often transcends species boundaries and interspecies relations may hold a special importance.

Caring for the animals we love

With a long history of keeping animals as pets in Britain (Ritvo, 1987), such human-animal relations are often marked by intimate, interpersonal bonds (see Thomas, 1983 [1933]). There is much research documenting the intimacy and legitimacy of relations between humans and their companion species (see Cudworth, 2011; Fudge, 2008), and, as Charles (2014; 2016; 2017) claims, writings from the MOP also confirm the importance of interspecies relationships. The strength and significance of such interspecies relationships suggests that practices of care towards those who are tied up with animal research, from the breeding of animals, the experimental process, to the expected outcome for patients and publics, are not strictly determined by species barriers.

An example of the way in which companion animal relationships may shape how Mass Observers relate to animal research is illustrated in this correspondent's (R4365) deliberation over conversations with friends or family on the topic of animal research. As they write –

For me the subject has never come up. I think this is because we all have animals and to think of them being harmed is too much to think about. I am aware that this is a very ignorant view. (Mass Observer R4365)

For this Observer (R4365), animal research presents a conflict between their views on the treatment of companion animals (the animals that we *care for*) and that of research animals (the animals that *care for us*) making this a challenging issue to contemplate. Implied here is that discussing animal research leads them to imagine their 'own' animals in the position of those used in the biomedical industry, a line of thought which takes an emotional toll, and indeed, is "too much to think about". Empathising with research animals through imagining one's companion animals in

their place thus illustrates the role of care in relating to animal research, with the interpersonal connections shared with those animals we love serving as a way to understand the ways animals are treated in biomedical research.

Yet, attached to this, identifying as an animal 'owner' or 'lover' also means that confronting one's complicity in animal research, despite how problematic and constrained such complicity might be, is uncomfortable and can threaten self-identity. As Engdahl and Lidskog (2012) observe, "citizens evaluate the social meanings of an issue and the extent to which it threatens or supports their social identities" (Engdahl and Lidskog, 2012: 707). Drawing back to ways of mitigating such discomfort, perhaps it is not surprising, then, that Rayner identifies four 'tacit information management strategies' to mediate one's exposure to uncomfortable knowledge all of which revolve around different forms of not-knowing: "denial, dismissal, diversion (or decoy) and displacement" (Rayner, 2012: 113).

In this case, writing from the MOP reveals that some would rather turn away from information on animal research which may unsettle existing care obligations we have for the self, the humans we love, and the other animals we love. The use of animals to produce new biomedical knowledge, a goal often treated as a universal good (Harris, 2005; and, for critique, see Callahan, 2003), is therefore disruptive in Rayner's sense in that it troubles such simplified understandings of ourselves. That is, how can we love animals whilst also causing them to suffer? In perceiving a lack of options to resolve the discomfort generated by the topic of animal research, as will be discussed in the following section, strategic ignorance of the issue becomes understandable and perhaps required.

Strategic care and strategic ignorance

In responding to the uncomfortable knowledge that animal research presents, some Mass Observers appear to employ practices of caring and knowing strategically, erecting care boundaries in which animal research is excluded or turning away from the issue. In exploring how caring and know-

ing are practiced around animal research, it is crucial to also attend to the ways in which they are *not*. In doing so, this section will begin with what I will call *strategic care*, that is, practices of caring that are based in strategically drawn boundaries, allowing one to justify channelling care in some directions over others. This concept is my response to McGoey's (2012) notion of 'strategic ignorance', which is described as being used to preserve one's internal harmony through "practices of obfuscation and deliberate insulation from unsettling information" (McGoey, 2012:555) and which will be explored in the second subsection through Mass Observer practices of not-knowing. Given the entanglement of knowing and caring, strategic care is used here to illustrate how practices of ignorance and denial are bound up with caring. Indeed, it is *because* we care that we may feel the need to turn away in situations where we feel powerless to act. Viewing McGoey's concept through the lens of care and analysing this through relations with animal research therefore reveals how caring practices can also be practiced strategically, being employed in ways which promote some care relations over others.

Strategic care

Before examining how Mass Observers negotiate their 'care-full' (van Dooren, 2014) engagement with the topic of animal research, it is first important to note that, for some, animal research was considered a low priority issue. In acknowledging disinterest or indifference towards the problem of animal research, its situation amongst many other socio-political issues that demand consideration becomes evident and, alongside which, some Mass Observers deem it as of lesser importance. Such practices may reflect a *strategic care*, through which boundaries are drawn to preserve some care relations over others. This boundary formation around which issues warrant care is articulated by the following Mass Observers –

I am afraid that on the scale of issues, this is a low priority one for me. I am involved in so many issues to do with justice and human rights for people that I feel to be too preoccupied with this would be a kind of luxury when human tragedy is all around [sic] us. Having said that, however, I do believe

that a society which is civilised in its treatment of animals is also more likely to be civilised in its treatment of people, so I am aware that these things are not separate entirely. (Mass Observer S4743)

~

At the end of the day I do feel for any animals that suffer in the service of humanity, but there are a lot of issues in the world that I think are more pressing. And let's face it, we didn't get to be top dog on this planet by being nice to other species (or our own) – nor are animals, as a rule, nice to each other. I just hope our scientific understanding and control over the natural world can advance to a point where survival does not demand that we make moral compromises. (Mass Observer T5672)

For both Mass Observers, caring about animal research is situated amongst other issues that demand care, and for the first Observer (S4743), animal research is 'a low priority' compared to what are deemed as exclusively "human tragedies" [sic]. When located within such a landscape, in which one's care is needed in a plethora of directions, this Observer (S4743) regards attention spent on animal research as "a kind of luxury". Yet, this separation between humans and other animals is then unsettled in the connection made between the way a society treats both. For the second Observer (T5672), the exceptionality of humans is regarded as having been achieved through the struggle for survival that all animals engage in, with the biomedical use of animals reflective of a natural, evolutionary fight for dominance. When taken as representative of this species struggle for survival, animal research is therefore implicated as a low priority matter, with "a lot of issues in the world" considered "more pressing". However, as suggested in the hope that scientific endeavours for human survival do not entail "moral compromise" [sic], there are ethical limits to species survival.

That for these Mass Observers species presents a boundary to care demonstrates that caring is not neutral or unproblematic. Rather, care is a limited resource and one cannot care about everything. To direct one's care-full attention in a particular direction must mean there are sites and subjects left unattended to as a consequence. As Puig de la Bellacasa (2012) puts it, "where there

is relation there has to be care, but our cares also perform disconnection" (Puig de la Bellacasa, 2012: 204). This means that care is strategically enacted to support certain relationships at the expense of others. Given the necessary confines of care, using species boundaries to guide normative decisions about who and what we should care about reflects wider sociocultural values around who *deserves* our care. In the case of caring about animal research, then, anthropocentric discourses which shape many areas of our social worlds and, indeed, are foundational to the biomedical use of animals, may make one's caring attention towards laboratory animals questionable when such effort could instead be directed towards humans.

In this way, although animal research involves and impacts bodies across species boundaries, caring about issues which are often defined as chiefly 'animal' within anthropocentric contexts may be subject to particular scrutiny. Furthermore, that grief over animal suffering and death is still often felt as taboo, being historically 'disenfranchised' (Stewart et al., 1989) and remaining acutely so in relation to particular animals (e.g. 'livestock') (Pallotta, 2016), may also contribute to the de-prioritisation of the issue. As to care about animal research in the face of human suffering may be to affectively disturb the cultural hegemony of anthropocentrism. Although a lack of interest or care towards animal research was expressed only by a minority of Mass Observers, such disconnections with the issue are important to acknowledge as they reveal how the practice is culturally situated amongst other socio-political issues which call for attention.

Strategic ignorance

As was more common in the Directive responses, if those implicated in the practice are recognised as deserving of care, pressure to learn more about the situation may be felt in order to better attend to it. However, knowledge of animal research practices might be uncomfortable and, with a lack of routes to act on such knowledge (Hobson-West, 2010; Pound and Blaug, 2016), perceived as ultimately futile. In these situations, ignorance may appear beneficial through the shelter it offers from disturbing information. McGoey (2012) defines this type of not-knowing as 'strategic

ignorance', which is "distinguishable from deception or the suppression of data by virtue of the fact that unsettling knowledge is thwarted from emerging in the first place" (McGoey, 2012: 559). Using the language of denial rather than ignorance, Cohen (2001) also discusses how we manage unsettling information. For Cohen, there are multiple types of denial however most useful to consider here is his concept of 'implicatory denial' – denial of the *implications* of knowledge. As Cohen states, "unlike literal or interpretive denial, knowledge itself is not at issue, but doing the 'right' thing with this knowledge" (Cohen, 2001: 9). In this case, Cohen writes that "we turn away from our insights and hide their implications. We half-know, but don't want to discover the other half" (Cohen, 2001: 34).

As both ways of conceptualising practices of not-knowing suggest, individuals are not entirely absent of knowledge about issues they strategically ignore or deny. Rather, what one knows about a subject may fuel a desire to not know any more about it. This half-knowing and half-not-wanting-to-know is demonstrated in the following Mass Observer's (B3227) writing on the proposal of increased openness around animal research, in which they consider –

If we were asked flat out, Do you approve of secrecy? Are you in favour of greater openness?, we would say no and yes, but the truth is that some of us, and some part of all of us, are essentially happy to be kept in the dark about unpleasant things.
(Mass Observer B3227)

This Mass Observer (B3227) acknowledges a cultural valorisation of openness and consequent disapproval of secrecy, yet, in an almost confessional tone, claims that such support for openness exists alongside a willingness to remain unaware of "unpleasant" knowledge. In these circumstances, openness is presented as harmful and secrecy becomes an act of public protection. Such theorising reframes ignorance and denial as ordinary, everyday practices, which, rather than being inherently negative, can be personally and culturally beneficial. Challenging the notion that ignorance is something to be eradicated through the gaining of knowledge, an epistemology underpinning the classical enlightenment spirit of science

(Bogner, 2015), such understandings of ignorance highlight both its social and psychological utility. When confronted with an opportunity in which one may come to know something about animal research and the topic is already associated with uncomfortable knowledge, the refusal to know more or engage with the implications of any knowledge acquired can thus be seen as a coping mechanism. Hence supporting Cohen's claim that "what looks like denial is an accommodation to cognitive threat. The attack on your life assumptions is blunted, and threatening information is cut down to tolerable doses" (Cohen, 2001: 49).

A key component in Mass Observer withdrawals from learning about or discussing animal research is a reported sense of being unable to alter their relation to the practice, and, more specifically, their perceived complicity in it as a patient or medical consumer. Not only are there limited opportunities to act upon knowledge gained if it is found to be troubling, given the proclaimed necessity of animal models to biomedical progress (Barré-Sinoussi and Montagutelli, 2015) 'care-full' relating with laboratory animals can be emotionally immobilising. Such fundamental discomfort around the prospect of benefiting from harming animals therefore troubles assumptions that awareness of regulation or the value of animal models will alleviate societal concerns. Hence, rather than encouraging an appreciation of animal research, as bioscience communications which aim to draw public attention to the use of animals in medicine development intend (UAR, 2016), this conflicting investment in the promises of animal research may make it all the more crucial to turn away.

As touched on in the introduction, there remains a strong leaning towards deficit-model approaches to publics in the animal research domain. Indeed, previous arguments made on the subject of openness around animal research have claimed that publics wish to remain wilfully ignorant and thus providing more information on the practice has at times been discouraged (Aziz et al., 2011:459). However, such characterisation of an 'ignorance is bliss' attitude of publics simplifies the ambivalence felt towards animal research. As this analysis of MOP writing shows, due to their caring about those implicated in the

practice, some individuals feel guilt and shame over knowing and thinking about animal research and also *not* knowing or thinking about it. This is demonstrated in the MOP excerpt below –

As regards buying and taking medicines, I don't think I have ever given the scientific research involving millions of animals a second thought which I suppose is rather shameful. It's just something I block out I suppose – back to my feeling of not being able to do anything about it (Mass Observer F890)

The sense of shame or hypocrisy expressed by this Mass Observer (F890) reflects how avoiding information on animal research might help to minimise any discomfort the issue causes, yet knowledge of the practice itself cannot be entirely eroded. Therefore, at times, one is aware of turning away and sheltering from unsettling information, a practice which may raise further feelings of guilt or shame. That such feelings accompany the avoidance of information on animal research illustrate that partial ignorance does not provide absolute shelter from moral trouble. Indeed, shame is intimately tied to our sense of morality, acting, in Scheff's (2003) words, as "our moral gyroscope" (Scheff, 2003: 254).

However, implicit to such practices of ignorance is the power, or lack of, that one possesses to act upon what they come to know. In order to combat silence and denial around animal suffering, Wicks (2011) suggests that "cultural channels should visibly be in place [sic] to validate the sense that something *can* be done, inform you *what* this something is and enable you to do it" (Wicks, 2011: 196, emphasis in original). However, with a lack of routes to affect change in the animal research domain, ignorance around animal research appears to offer protection from the uncomfortable knowledge the topic poses. Without autonomy in this area, individuals may feel that ignoring the issue is in their best interests.

Nevertheless, as the MOP excerpt above shows, self-protection from such information is not unproblematic. Rather, feelings of guilt or shame may accompany the acknowledgment of an active ignorance towards animal research and the suffering associated with the practice. Such guilt induced by turning away from animal

research may also be attached to a perceived civic duty to engage with issues of social justice. Given the mounting attention placed on individuals to take responsibility for global challenges such as climate change (see Whitmarsh et al., 2011), for some Mass Observers, animal research may reflect yet another political or ethical issue that citizens feel obligated to engage with, yet also disempowered by.

Therefore, as this analysis of MOP writings on animal research suggests, practices of not-knowing do not necessarily indicate not caring. Indeed, active ignorance towards unsettling topics may be explicitly driven by care. Rather, turning away from the issue of animal research is here shown to be functional, protecting oneself from the negative emotional impact that knowing about animal research is expected to generate, particularly when individuals feel unable to act upon such information.

Responsive knowing and responsive caring

Although, as indicated by the previous section, knowing and caring about those implicated in animal research can be internally and interpersonally disturbing, some Mass Observers suggested that knowledge about the practice can be a useful resource for themselves and 'the public' at large. As well as being supportive of openness on animal research, some correspondents described ethical futures which were dependent on individual accountability for those involved and discussed current acts of beneficence which acknowledge and attempt to remedy the non-human vulnerabilities that human action can generate. In interpreting such writing, I introduce the concepts 'responsive knowing' and 'responsive caring'. In describing these practices as 'responsive', I draw explicitly on Haraway's (2016) notion of 'responsibility', describing an ethical awareness which primes us to be continually open to responding to and with others, "a praxis of care and response—response-ability—in ongoing multispecies worlding on a wounded terra" (Haraway, 2016: 105).

In doing so, I hope to emphasise how such forms of caring and knowing are practiced through an acknowledgment of one's responsi-

bility to care and know and also draw attention to the need to cultivate the ability to *respond* in such ways. To be response-able, knowing and caring *responsively*, is therefore more than a personal ethical stance or sensitivity, it requires attention to power structures which empower and disempower us in varying ways. As Martin et al. (2015) put it, ‘the capacity to respond is itself unevenly distributed and enmeshed within complex configurations and logics of power’, a fact which means that ‘an ethic of response-ability, and thus an ethic of care, cannot be institutionalized or standardized’ (Martin et al., 2015: 635). Therefore, in the animal research domain, it is my contention that in order for individuals to *responsively care*, opportunities to *responsively know* must be available, and so it is with the latter that this section begins.

Responsive knowing

In responding to the Directive, not all Mass Observers expressed an aversion to knowing more about animal research. Indeed, some expressed support for proposals of increased openness on the issue. Key to many of the accounts in which Observers were enthusiastic about more openness around animal research was the capacity for openness to bring about action. As the following Mass Observers indicate –

I have heard animal rights protesters say there are other ways of testing medicines + doing research. This is perhaps a taboo subject that should be brought into the open more. What are the other alternatives? Would they be as effective? The case was well made against animal testing for cosmetics so the debate should be moved onto health research more. (Mass Observer W3730)

~

I feel that it would be useful for the general public to know more animal research to help them decide what is acceptable. (Mass Observer H5741)

~

I think their ought to be more openness about animal research. At least not just to say who does it but to be able to legitimately justify it. If the same trials & tests can be done without animals but it costs more then I think so be it. Profit should not come before animal welfare. (Mass Observer G4296)

For these Observers, proposals to increase openness around animal research should enable publics to act in some way. This can be seen in how the first Observer (W3730) links openness around alternatives to fostering debate on the topic, the second (H5741) calls for information which will enable publics to make informed decisions on which kinds of research are “acceptable”, and the third Observer (G4296) emphasises the importance of openness strategies which *justify* the scientific use of animals. In each of these excerpts the availability of such information in and of itself is not the key focus, rather, significance is placed on what agency such information could bestow upon publics in this domain. Information that enables publics to draw boundaries between necessary and unnecessary, humane or inhumane, and acceptable or unacceptable biomedical uses of animals is important in that it permits publics to be active co-constructors, rather than passive consumers, of scientific knowledge. In this way, such knowing becomes *responsive* in that it allows one to actively *respond to* the issue and be *responsible for* what one comes to know. Consequently, in providing routes for publics to intervene in animal research, such forms of knowing can be seen as facilitating ways to care *for* laboratory animals. In other words, responsive knowing enables responsive caring.

Yet, making certain data available as a way of appeasing a public characterisation of the sector as secretive without also providing ways for publics to act upon such information falls short of this. As Moore (2017) summarises in another context, “for governance to be ‘adequately justified’, the state must take an active role in explaining, evidencing and defending decisions and actions” (Moore, 2017: 425). Although there is value for science communication in making scientific and regulatory information on animal research publicly accessible, relying predominantly on this approach and treating one-way enactments of openness as ends in themselves potentially undermines the Concordat’s aim to “build open dialogue with the public on the reality of the use of animals in research” (Williams and Hobson, 2019: 8).

A key element of enacting meaningful openness around animal research then appears

to be that such strategies work towards fostering reciprocal science-society dialogues around the practice. In doing so, openness becomes a mechanism which can enable publics to engage with the issue in productive ways, rather than as an end-in-itself. As the following Mass Observer (T1843) reflects, openness is not only about transparency from the sector which can then be witnessed by public spectators, openness also signifies that an issue is open to public *involvement* –

I think there should be total openness about the issue, just as there should be around abattoirs in fact. We should not flinch from knowing how we get from a to b: we become too protected from the truth about how we conduct ourselves in society in order to have what we supposedly want. As it's an ethical issue, everyone should be involved in it, particularly when it comes to medical research. (Mass Observer T1843)

This Mass Observer's (T1843) conception of openness seems imbedded in a sense of societal duty, with awareness of the steps in our consumption chains (i.e. 'abattoirs') being constructed as almost a civic responsibility. Similar to the writings on not wanting to know discussed in the previous section, this Observer regards ignorance around animal research as a form of protection – being "protected from the truth". However, in characterising animal research as an ethical issue, they determine that everyone has an obligation to know about and act within it. This links back to the feelings of guilt and shame discussed earlier, with some Observers' self-confessed practices of ignorance towards animal research perhaps felt as a shirking of the obligation to get involved that the above Observer highlights. Yet, as this section reinforces, in implementing beneficial openness strategies around animal research, such ways of knowing must be considered for how they might empower or disempower.

Responsive caring

In considering how responsive knowing is entangled with responsive caring, we will now turn to examples where Mass Observers articulated ways of caring about animals used in research. Although the Observers mentioned in this section

may describe a current withdrawal from knowing about animal research, they can also be read as expressing a desire to respond to the issue through new, potentially subversive, modes of care. Though perhaps based in idealised visions of the future, such care relations centre on a transformation of human relations with laboratory animals and non-human animals more broadly, promoting an ethics of care obligated not only by the individual, but by humans as a species.

An example of this type of responsive caring is demonstrated in the focus of some Observers on a vulnerability that all sentient beings share (in different forms), that of the ability to suffer. In discussing the relations between laboratory animals and humans, Haraway (2008) writes of 'shared suffering', not attempting to mimic or subsume the suffering of others, what she calls a 'heroic masochistic fantasy', but doing "the work of paying attention and making sure that the suffering is minimal, necessary, and consequential" (Haraway, 2008: 82). Such considerations require us to continually critically assess what comes from the suffering of laboratory animals, to prevent such suffering from becoming taken-for-granted. Relevant here is one Mass Observer's (J5734) contemplation of a utopian future which is marked by its lack of suffering –

[...] if we're imagining a future world, we're imagining it without suffering, and so we stop the suffering we are causing. And if I am working towards a world in which there is no suffering, I need to stop allowing things to suffer on my behalf, and give up the pills. (Mass Observer J5734)

In envisioning a future "without suffering", this Observer (J5734) identifies their consumption of medicines as an area in which they can take individual responsibility for the suffering caused through animal research. Such reflection on how the management of one's vulnerabilities are entangled with the vulnerabilities of other species can be seen as leading this Observer to consider the responsibilities that we, as individuals and as a species, might bear towards other animals. Considering their accountability for the suffering of other animals in pursuit of human health advancements, the Observer concludes that they "need to stop allowing things to suffer on my

behalf, and give up the pills”, an act that requires not only recognition but also acceptance of one’s own vulnerability.

Whether put into practice or not, such visions of the future reflect Puig de la Bellacasa’s (2011) contention that “the commitment to care can be a speculative effort to think how things could be different” (Puig de la Bellacasa, 2011: 100). The ethical importance placed on individual responsibility here is central to Tronto’s (2012) notion of ‘relational responsibility’, “where the fact of being alive and the nature of human vulnerability places one in relationships [...] that produce responsibilities” (Tronto, 2012: 308). Such corporeal vulnerabilities are vital in thinking about animal research. Indeed, that animals are so often used as models for human bodies (Ericsson et al., 2013), viscerally illustrates the way in which vulnerabilities are shared across species. In the animal research context, caring about such animals is intimately entwined with caring for ourselves.

In articulating ways in which research animals and non-human animals more broadly may be cared for and about, some Mass Observers directly challenged normative obligations to care first and foremost for humans. Such Observers were critical of the prioritisation of human needs as represented through the biomedical use of animals. For some, in enacting beneficent care, such as charitable giving, who they care about might be structured in explicit contestation of the obligations expected towards humankind, as the following Observer’s (R5682) charitable practices suggest –

I don’t like the idea of any animal suffering and if I support/give to any charity it is always animal / environment related. Makes me sound horrible but I would never give to a charity related to humans. We’re too selfish and have caused most of the problems in today’s world! (Mass Observer R5682)

That this Observer (R5682) justifies their aversion to donating to charities “related to humans” by deeming the human species at fault for “most of the problems in today’s world” suggests the invoking of notions of deservingness in enacting care boundaries. Such musings on the activities of humans as a homogenous collective are problematic, neglecting cultures which do not practice ontological separations between humans and

animals (Salmón, 2000) and disregarding how the category of the ‘human’ is infused with unequal power distributions (Wolfe, 1998: 43). However, given current emphases on the negative impact of humans as ‘a force of nature in the geological sense’ (Chakrabarty, 2009: 207), such articulations of care perhaps reflect shifting relationships and priorities of care in the Anthropocene, a cultural epoch in which human exceptionalism may, for some, begin to lose salience.

Overall, this analysis suggests that some Mass Observers want to know more about animal research and to care better for those implicated in its practice, actively *responding* to the issue in some way. In such writing, Observers speculate on ways to resolve the moral discomfort that the scientific use of animals causes, suggesting a desire for ways of knowing about the practice which enable intervention into it and modes of caring which may radically improve the lives of non-human animals, in science and elsewhere. As well as this, some Mass Observers relate to their membership of the human species, revealing how caring about animals involved in practices such as scientific research can play out on a macro scale and lead to demand for change to the ways that ‘we’, collectively, enact care.

Conclusion

This paper has argued that relating to animal research is a process of both knowing and caring. In demonstrating this entanglement, I have introduced the novel concepts of uncomfortable care, strategic care, and responsive knowing and caring. In the first section, the concept of ‘uncomfortable care’ was used to discuss why animal research can be an acutely uncomfortable topic, touching on the competing tensions it raises between different care relations. This expanded on Rayner’s ‘uncomfortable knowledge’ to more precisely account for why such knowledge is uncomfortable in the first place. Looking at how the uncomfortable topic of animal research is mediated in the everyday, the second section looked at Mass Observers who do not want to care or know about the issue. Here, McGoey’s notion of ‘strategic knowledge’ was used to interpret discussions of turning away from the topic. Accounting for strategic practices

of caring, McGoey's concept was extended with the notion of 'strategic care', drawing attention to how some care relations are deliberately prioritised over others. The final section attended to Mass Observers who want to respond to animal research through modes of what I have called 'responsive knowing and 'responsive caring'. Following Haraway's notion of 'response-ability', these concepts suggest that knowing becomes *responsive* when it allows one to actively *respond* to the issue and be *responsible for* what one comes to know. In this way, responsive knowing should lead to responsive caring.

Overall, this analysis suggests that the controversy of animal research is irresolvable by increasing the availability of information alone. Indeed, as Bauer and Falade (2014) write, "if Francis Bacon's late sixteenth-century notion of 'knowledge is power' holds, any attempt to share knowledge without simultaneous empowerment will alienate rather than bring the public closer to science" (Bauer and Falade, 2014: 148). For animal research and other technoscientific controversies, consideration of the varying capacities that publics have to act on what they come to know is crucial. Without this, those who care about an issue yet feel unable to act on the moral and emotional trouble it evokes may feel it necessary to turn away altogether.

In their discussion of the local ethical review process regulating animal research, Hobson-West and Davies (2017) show that the regulation of biomedical animal use is informed by societal concerns. Their work demonstrates that, in considering the impact a particular experiment may have, the ethical review process considers potential 'harms' to the human community outside of the laboratory as well as the non-human animal subjects who are directly involved. One might therefore argue that how future science-society dialogues around animal research are enacted should also be subject to similar consideration. Specifically, communication must be built upon care for how publics can make meaningful use of opportunities to know.

Furthermore, in considering the ethical and methodological implications of the analyses offered here, attention must also be turned back onto the origins of this research, the commis-

sioning of the MOP Directive on 'Using animals in research'. Although methods like the MOP offer anonymity and generous amounts of space, time, and formatting freedom, the prevalence of discomfort in Observers' writing on animal research raises questions of whether such methods themselves evoke heightened levels of discomfort towards controversial topics and leave correspondents 'alone' at home to deal with this (Hobson-West et al., 2019). Such considerations reflect that studies of societal relations with animal research are themselves forms of engagements which ask individuals to confront the ethical trouble that the issue may generate.

To end, Limoges' (1993) point is pertinent to bear in mind for future work in this area. This is that when dealing with controversy, "the actors are not an audience, nor are they 'students' to be taught'; controversies are instead 'learning processes'" for all those involved (Limoges, 1993: 422-423). Acknowledging this whilst mindful of the unequal distribution of capacities to affect change in this area means that *how* the question of animal research is raised in dialogical processes is of ethical as well as methodological significance. Thus, in going forward, it is hoped that attention to the diverse positionality of publics and their varying (in)capacities to respond to complex issues might help to promote communications, engagements, and participatory processes which empower actors to contribute in meaningful ways.

Acknowledgments

I would like to thank all those involved in providing access to the MOP writing analysed here and, of course, the Mass Observers themselves. I am also grateful to Professor Pru Hobson-West for helpful feedback on this paper. The commissioning of the MOP Directive discussed in this paper was funded via a Leverhulme Trust grant (grant number RP2011-SP-013). The analysis presented here is supported by the Wellcome Trust (205393/B/16/Z).

The Author declares that there is no conflict of interest.

References

- Animals in Science Regulation Unit (2015) Identification and Management of Patterns of Low-level Concerns at Licensed Establishments. London, UK: Home Office.
- Aziz T, Stein J and Yogeshwar R (2011) Animal testing: TV or not TV? *Nature* 470: 457.
- Barré-Sinoussi F and Montagutelli X (2015) Animal models are essential to biological research: issues and perspectives. *Future Science OA* 1: 1-3.
- Bauer MW and Falade BA (2014) Public understanding of science: Survey research around the world. *Routledge Handbook of Public Communication of Science and Technology*. London: Routledge, pp.140-159.
- Bhatti M (2014) Garden Stories: Auto/biography, Gender and Gardening. *Sociological Research Online* 19(3): 1-8.
- Bloome D, Sheridan D and Street BV (1993) Reading Mass-Observation writing: Theoretical and methodological issues in researching the mass-observation archive. In: Sheridan D and Street BV (eds) *Occasional Papers*. <http://www.massobs.org.uk/occasional-papers>: University of Sussex, pp. 1-22.
- Bogner A (2015) Decision-making under the condition of uncertainty and non-knowledge: The deliberative turn in genetic counselling. In: Gross M and McGoey L (eds) *Routledge international handbook of ignorance studies*. London: Routledge, pp.199-205.
- Braun V and Clarke V (2006) Using thematic analysis in psychology. *Qualitative Research in Psychology* 3(2): 77-101.
- Callahan D (2003) *What Price Better Health?: Hazards of the Research Imperative*. Berkeley: University of California Press.
- Chakrabarty D (2009) The Climate of History: Four Theses. *Critical Inquiry* 35(2): 197-222.
- Charles N (2014) 'Animals Just Love You as You Are': Experiencing Kinship across the Species Barrier. *Sociology* 48(4): 715-730.
- Charles N (2016) Post-Human Families? Dog-Human Relations in the Domestic Sphere. *Sociological Research Online* 21(3): 1-12.
- Charles N (2017) Written and spoken words: representations of animals and intimacy. *The Sociological Review* 65(1): 117-133.
- Cohen S (2001) *States of Denial: Knowing about Atrocities and Suffering*. Cambridge: Polity Press.
- Collins N (2011) Drugs 'should carry animal testing labels'. *The Telegraph* 31.10.2011. Available at: <https://www.telegraph.co.uk/news/science/science-news/8858219/Drugs-should-carry-animal-testing-labels.html> (accessed 10 September 2020).
- Cudworth E (2011) *Social Lives with Other Animals: Tales of Sex, Death and Love*. New York: Palgrave Macmillan.
- Davies G, Gorman R, Greenhough B, et al (2020) Animal research nexus: a new approach to the connections between science, health and animal welfare. *Medical Humanities* 46(4): 499-511.
- Doka KJ (1989) *Disenfranchised grief: recognizing hidden sorrow*. Lexington: Lexington Books.
- Engdahl E and Lidskog R (2012) Risk, communication and trust: Towards an emotional understanding of trust. *Public Understanding of Science* 23(6): 703-717.
- Ericsson A, Crim M and Franklin C (2013) A Brief History of Animal Modeling. *Missouri medicine* 110: 201-205.
- Festing S and Wilkinson R (2007) The ethics of animal research. Talking Point on the use of animals in scientific research. *EMBO Rep* 8(6): 526-530.
- Friese C and Latimer J (2019) Entanglements in Health and Well-being: Working with Model Organisms in Biomedicine and Bioscience. *Medical Anthropology Quarterly* 33(1): 120-137.

- Fudge E (2008) *Pets: art of living*. Stocksfield: Acumen Press.
- Giraud E and Hollin G (2016) Care, Laboratory Beagles and Affective Utopia. *Theory, Culture & Society* 33(4): 27-49.
- Greenhough B and Roe E (2018) Attuning to laboratory animals and telling stories: Learning animal geography research skills from animal technologists. *Environment and Planning D: Society and Space* 37(2): 367-384.
- Haran J and O’Riordan K (2018) Public knowledge-making and the media: Genes, genetics, cloning and Mass Observation. *European Journal of Cultural Studies* 21(6): 687-706.
- Haraway DJ (2008) *When species meet*. Minneapolis: University of Minnesota Press.
- Haraway DJ (2016) *Staying with the Trouble: Making Kin in the Chthulucene*. Durham: Duke University Press.
- Harris J (2005) Scientific research is a moral duty. *Journal of Medical Ethics* 31(4): 242.
- Harrison J (2011) Animal Research Promoted by Controversial Billboards. *ABC News*, 11.04.2011. Available at: <https://abcnews.go.com/Health/controversial-billboards-promote-animal-research/story?id=13350118> (accessed 12th October 2020).
- Hobson-West P (2010) The role of ‘public opinion’ in the UK animal research debate. *Journal of Medical Ethics* 36(1): 46.
- Hobson-West P and Davies A (2017) Societal Sentience: Constructions of the Public in Animal Research Policy and Practice. *Science, Technology, & Human Values* 43(4): 671-693.
- Hobson-West P, McGlacken R, Brownlie J, et al. (2019) Mass Observation: Emotions, Relations and Temporality. Workshop report.: Animal Research Nexus, 1-9. Available at: <https://animalresearchnexus.org/publications/mass-observation-emotions-relations-and-temporality> (accessed 4th September 2020).
- Knight J (2000) *Natural Enemies: People-wildlife Conflicts in Anthropological Perspective*. London: Routledge.
- Kramer A-M (2014) The Observers and the Observed: The ‘dual Vision’ of the Mass Observation Project. *Sociological Research Online* 19(3): 1-11.
- Limoges C (1993) Expert knowledge and decision-making in controversy contexts. *Public Understanding of Science* 2(4): 417-426.
- Martin A, Myers N and Viseu A (2015) The politics of care in technoscience. *Social Studies of Science* 45(5): 625-641.
- Martinez-Sanchez E and Leech K (2015) The Challenging Road towards a Unified Animal Research Network in Europe. *PLoS Biol* 13(5): 1-6.
- Mass Observation (2015) *Mass Observation Project* Available at: <http://www.massobs.org.uk/about/mass-observation-project> (accessed 16 October 2020).
- McGoey L (2012) Strategic unknowns: towards a sociology of ignorance. *Economy and Society* 41(1): 1-16.
- McLeod C and Hobson-West P (2015) Opening up animal research and science–society relations? A thematic analysis of transparency discourses in the United Kingdom. *Public Understanding of Science* 25(7): 791-806.
- Millar R and Wynne B (1988) Public understanding of science: from contents to processes. *International Journal of Science Education* 10(4): 388-398.
- Mills KE, Han Z, Robbins J, et al. (2018) Institutional transparency improves public perception of lab animal technicians and support for animal research. *PLoS One* 13(2): 1-13.
- Moore S (2017) Towards a Sociology of Institutional Transparency: Openness, Deception and the Problem of Public Trust. *Sociology* 52(2): 416-430.

- Pallotta NR (2016) You're My Sanctuary: Grief, Vulnerability, and Unexpected Secondary Losses for Animal Advocates Mourning a Companion Animal. In: DeMello M (ed) *Mourning Animals*. East Lansing: Michigan State University Press, pp. 179-186.
- Pollen A (2013) Research Methodology in Mass Observation Past and Present: 'Scientifically, about as valuable as a chimpanzee's tea party at the zoo?' *History Workshop Journal* 75(1): 213-235.
- Pollen A (2014) Shared Ownership and Mutual Imaginaries: Researching Research in Mass Observation. *Sociological Research Online* 19(3): 1-12.
- Pound P and Blaug R (2016) Transparency and public involvement in animal research. *Alternatives to Laboratory Animals* 44(2): 167-173.
- Puig de la Bellacasa M (2011) Matters of care in technoscience: Assembling neglected things. *Social Studies of Science* 41(1): 85-106.
- Puig de la Bellacasa M (2012) 'Nothing Comes Without Its World': Thinking with Care. *The Sociological Review* 60(2): 197-216.
- Rayner S (2012) Uncomfortable knowledge: the social construction of ignorance in science and environmental policy discourses. *Economy and Society* 41(1): 107-125.
- Rittel HWJ and Webber MM (1973) Dilemmas in a general theory of planning. *Policy Sciences* 4(2): 155-169.
- Ritvo H (1987) The Emergence of Modern Pet-Keeping. *Anthrozoös* 1(3): 158-165.
- Ryder RD (1989) *Animal Revolution: Changing Attitudes Towards Speciesism*. Cambridge: Blackwell.
- Salmón E (2000) Kincentric Ecology: Indigenous Perceptions of the human–nature Relationship. *Ecological Applications* 10(5): 1327-1332.
- Scheff TJ (2003) Shame in self and society. *Symbolic Interaction* 26(2): 239-262.
- Sheridan D (1993) Writing to the Archive: Mass-Observation as Autobiography. *Sociology* 27(1): 27-40.
- Smith DM (1998) How far should we care? On the spatial scope of beneficence. *Progress in Human Geography* 22(1): 15-38.
- Stewart CS, Thrush JC and Paulus G (1989) Disenfranchised bereavement and loss of a companion animal: Implications for caring communities. In Doka KJ (ed) *Disenfranchised grief: Recognizing hidden sorrow*. Lexington: Lexington Books.
- Svendsen M and Koch L (2013) Potentializing the Research Piglet in Experimental Neonatal Research. *Current Anthropology* 54: 118-128.
- Thomas K (1983 [1933]) *Man and the natural world: changing attitudes in England 1500-1800*. London: Allen Lane.
- Tronto JC (2012) Partiality Based on Relational Responsibilities: Another Approach to Global Ethics. *Ethics and Social Welfare* 6(3): 303-316.
- Understanding Animal Research (2014) Concordat on Openness on Animal Research in the UK. Available at <https://concordatopenness.org.uk/about-the-concordat-on-openness> (accessed 2nd May 2020).
- Understanding Animal Research (2016) Where do medicines come from?: Understanding Animal Research. Available at: http://www.understandinganimalresearch.org.uk/files/2114/6417/7961/Where_do_medicines_come_from.pdf (accessed 5th June 2020).
- Understanding Animal Research (2019) Quarterly Update. Published for member organisations: Understanding Animal Research, 1-4.
- van Dooren T (2014) Care (Living Lexicon for the Environmental Humanities). *Environmental Humanities* 5: 291-294.

- Wehling P (2006) Im Schatten des Wissens? Perspektiven der Soziologie des Nichtwissens. *Österreichische Zeitschrift für Soziologie* 33: 108-112.
- Whitmarsh L, Lorenzoni I and O'Neill S (2011) *Engaging the Public with Climate Change: Behaviour Change and Communication*. London: Routledge.
- Wicks D (2011) Silence and Denial in Everyday Life—The Case of Animal Suffering. *Animals* 1(1): 186-199.
- Williams AJ and Hobson H (2019) Concordat on Openness on Animal Research in the UK Annual Report 2019. Available at <https://concordatopenness.org.uk/resources> (accessed 10th May 2020).
- Wolfe C (1998) *Critical Environments: Postmodern Theory and the Pragmatics of the "Outside"*. Minneapolis: University of Minnesota Press.