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Instrumental Love? Laboratory beagles and affective co-productions of knowledge

The Beagle’s excellent disposition and gay personality are two of its greatest assets, because special handling is seldom necessary and a minimum amount of restraint is required for most experimental procedures. (Anderson, 1970: 4)

This striking account of beagles’ value in laboratory science, by researchers in the very first large-scale experimental beagle colony (at the University of California, Davis, 1951-1986), is indicative of the messy fusion of cultural and scientific factors that led to the animals’ consolidation as standard laboratory dogs. The dogs’ affective qualities – their ‘excellent disposition’ and ‘gay personality’ – lie at the core of their experimental value (alongside more mundane concerns such as hair length and size). This characterisation is significant in the context of theory that has stressed the importance of affect both in creating space for animals to signify their needs to researchers (Davies, 2011, 2012; Greenhough and Roe, 2011), and in encouraging researchers to respond to these needs (Despret, 2004; Stengers, 2005; Haraway, 2008). If researchers’ characterisations of beagle-personalities are framed in relation to this body of theory, therefore, then this indicates that the breed has especial potential to shape the research process.

Affect, however, has had an ambivalent role within canine (Lederer, 1992; Dror, 1999; Degeling, 2011) – and specifically beagle – research than this conclusion would suggest. The breed was selected for standardization because they were amenable to forming bonds with researchers (as detailed in Anderson, 1970). Affective beagle-researcher bonds, therefore, do not necessarily open up space for the animals to have a more participatory role in the production of knowledge in the laboratory, because these bonds have historically been manipulated to ensure the animals are easy to handle and unlikely to disrupt experimental procedures. A focus on beagles can thus productively complicate accounts of how
nonhumans can be brought to the table in the production of knowledge, which have stressed the value of affective relations.

**Key themes and materials**

This chapter focuses on two specific obstacles for participatory knowledge production, which emerge when tracing the consolidation of beagles as laboratory dogs. The first of these problems relates to the manipulation of affect within experimental science, and how the deliberate enhancement of animals’ affective capacities (that is central to beagle research) undermines the participatory potential of affect. A further issue is also touched on more briefly, which pertains to tensions identified by Gail Davis (2012, 2013) between, on one hand, the epistemological and ethical need to create experimental spaces where affect can flourish and, on the other hand, the industrial scale of this research and corresponding demand for standardized experimental animals. Both the manipulation of affect and the problems triggered by scale, raise the question of whether the affective production of knowledge within beagle research can ever be realised as a co-production in any meaningful sense. A focus on beagles, in more general terms, suggests caution should be taken when using affect to ground participatory research practices.

Unlike some of the other chapters in this book, which focus on the active process of researching with non-humans, this chapter adopts a more socio-historical perspective to explore the participatory potentials that were created – and undermined – with the consolidation of beagles as standardized laboratory dogs during the mid-20th century. Key Anglo-American examples of canine breed-selection, care-taking developments and colony-maintenance, which contributed to beagles’ eventual standardization, are drawn on to illustrate the ambivalent role of affect in affording non-humans a more participatory role in the research process. Whilst a range of important moments in the breeding of experimental
dogs during the first half of the 20th century are used to establish some general context, in terms of primary materials our focus is on scientific papers and reflections generated by researchers at the first experimental beagle colony at Davis.

**Co-producing knowledge in the laboratory**

Theories of co-production have proven informative in attempts to craft more-than-human ethical engagements (Greenhough, 2014), especially within the laboratory (Haraway, 2008; Greenhough and Roe, 2011). Originating in science studies, co-production evokes the messy, co-constitutive, relationships between science and society (e.g. Jasanoff, 2004; Harbers, 2005). This understanding of science and society as co-produced carries with it a distinct politics, in refusing to treat technoscience as a domain of expertise that is separate from the social and which should only be accountable to its own truths, norms and values; the public(s) whose social worlds are implicated in technoscientific practice should thus have a stake in its development rather than having their lives determined by it (Jasanoff, 2011). In geographic contexts, co-production has provided an ethical framing for everything from the development of GIS systems (Cutts et al, 2011) to nanoscience (Doubleday, 2007). It is this shared concern with developing a more participatory (and genuinely co-produced) approach to technoscientific knowledge-production, which has resonated with more-than-human geographies.

Various mechanisms have (or at least can) be introduced to afford human publics a more active participatory role in the production of scientific knowledge, from consensus-conference models that give publics an opportunity to debate the direction of laboratory science (Haraway, 1997) to the co-management of natural resources (Berkes, 2008). Many of these mechanisms are seen as un-workable when engaging with non-humans, however, due to their inability to participate through these formal processes. Affect has been a pivotal means
of overcoming these problems within more-than-human geographies, due to opening space for alternative, non-linguistic, modes of communication between species (Lorimer, 2007; Greenhough, 2014). This communication has been described as ‘anthropo-zoo-genesis’ (Despret, 2004) or ‘affective attunement’ (Willett, 2014), and is seen to be grounded in compassion that is generated through ‘corporality’ (Acampora, 2006), ‘somatic sensibilities’ (Greenhough and Roe, 2011) and embodied ‘vulnerabilities’ (Pick, 2011). Without eliding important distinctions between these perspectives, what these accounts share is the argument that bodily relations with animals – often those emerging through everyday care-taking practices and interactions – create space for animals to assume a more active role in the production of knowledge. It is this line of argument that is elucidated, and complicated, when examining the emergence of the experimental dog.

**Early canine research partners**

Arguments about the value of affect are helpful in elucidating why the use of dogs in experimental research became so widespread from the late 19th century onwards. Attention to the bodily played a key role in the use of dogs as experimental research subjects within late 19th and early 20th century laboratory research, but dogs also illustrate the ambivalent function of affect in this process. To give a brief overview of the evolution of canine research, by the late 19th century dogs were being used as models for human disease due to a range of physiological, practical and affective factors, with researchers describing how: ‘The dog has long been a favorite animal in medical research, partly because of its size and docility but also because of the availability of large numbers of stray and unwanted dogs at low cost’ (Scott 1970: 723). This emphasis on affect is reiterated within historical analyses of early (and often unsuccessful) experiments with blood transfusion in Britain and North America, in which dogs were not solely used due to their physiological affinities with humans but because of their affective – and hence their communicative – capacities:
canines were often favoured because they were easy to obtain, relatively easy to handle, and through their expressions and postures their behaviour was easily ‘read.’ As many pet owners could confirm, their dogs were able to communicate to humans a sense of their physical and emotional wellbeing. (Degeling, 2008: 25)

Trans-species communication, derived from affective relations, therefore, was seen as critical in enabling care-takers and researchers to interpret animal behaviour and adjust the experiment accordingly. In Otniel Dror’s analysis of physiology in this period (again on both sides of the Atlantic) he, accordingly, argues that attention to well-being was not simply an ethical concern, but an experimental one. Dror contends that animal emotion had to be managed to ensure that results were standardized, as distressed animals produced experimental anomalies: ‘The eradication of pain was not “merely an optional noble gesture” but “aided correct scientific observations”’, ‘Physiological knowledge’, in other words, ‘demanded pain-free animals’ (1999: 210).

By the early 20th century, the role of emotion was again emphasised in Anglo-American physiology, but this time not due to dogs’ capacities to be ‘read’ by experimenters, instead – foreshadowing the ultimate decision to focus on beagles – the emphasis had shifted to the value of dogs’ own affective qualities: ‘The very qualities that endeared dogs to humans made them vulnerable to researchers […] dogs, in light of their tractable nature, were used in the most extreme experiments, which often involved considerable pain’ (Lederer, 1992: 64). This acknowledgement of dogs’ affective qualities had intensified by the 1950s, in relation to psychological experiments, where dogs became the focus of experiments to determine whether environmental factors could have a detrimental psychological impact (Kirk, 2014). The consequence of the uses of dogs in these psychological contexts was that stress did become acknowledged – alongside pain – as factors that needed to be taken into account
when judging the severity of experiments, but (Robert Kirk suggests) this served to further instrumentalize canine emotion:

> By rendering relationships knowable, thus manageable, stress provided a language by which traditionally moral notions such as “well-being” could be reconfigured from political philosophical rhetoric to become objects of scientific and economic knowledge materialized in physical spaces, scientific practices, and legal regulations. (2014: 243)

Dogs thus illustrate the significance of affect to laboratory work, because their capacity to form affective bonds with humans was at the heart of initial decisions to standardize the use of dogs in experimental research. While affect played a pivotal role in facilitating trans-species communication within canine research, however, the instrumental nature of this communication – its role in easing experimental progress, rather than enabling the animals to ‘object’ in the matter advocated by Stengers and Despret – means that dogs trouble the connection between affective-relations and co-production.

**An affective rationale for standardization**

The troubling role of affect is elucidated by the rationale behind the first large-scale beagle colony, the Radiobiology Laboratory at UC-D, which was funded through the Manhattan Project in order to study the long-term effects of exposure to various forms of radiation. As is noted by Davis researcher Douglas McKelvie and colleagues, these experimental demands ensured that a very particular type of animal was required:

> …an animal with a prolonged life-span was necessary. This requirement eliminated such animals as the mouse, rat, and guinea pig. In addition, the physiological and anatomical features of these animals are not closely related to
those of man. The natural choice, some species of nonhuman primate, was ruled out by high cost and difficulties in procurement. The final decision was to use the dog, since it was readily available, easy to handle, adapted to laboratory environment, and was especially responsive to human care. (McKelvie et al. 1971: 263)

In this extract we can see that six reasons are offered to justify the use of the dog; (i) dogs have a long life span; (ii) dogs are closely related to man (sic); (iii) dogs are readily available (and cheap); (iv) dogs are well suited to the laboratory environment; (v) dogs are easy to handle; and finally (vi) dogs are responsive to human care. The first two reasons reflect the local demands of this particular experiment at UC-D; the final four features are more general. It is, however, immediately noticeable how affect and economics are treated more-or-less synonymously, as factors to be considered and controlled. Again blurring the distinction between the economic and the affective, the fact that dogs are cheap and the fact that they are responsive to human care are both taken into consideration and are believed to make the dog a valuable tool for scientific research.¹ The affective qualities of dogs, moreover, were touched on by all of the key researchers at Davis, who stress their ‘social relationship with man’ and ‘docility’ (Scott, 1970: 723), and in broader research literatures which suggest these qualities make dogs less intimidating to handle than other research animals (Zinn 1968: 1884-1885).

Already, therefore, a focus on dogs begins to complicate the role of affect within co-production. Because dogs were selected due – in part – to their amenability for entering into affective relations, this means that affective, co-shaping, relationships do not necessarily translate into a more participatory co-production of knowledge. To frame this in Matei Candea’s terms,² the difficulty in fostering more participatory research with animals –
especially in the context of laboratory science – is that it is difficult to create space for animals to ‘object’ to the ‘impositions of experimental obligations’ and ‘resist the authority of science’ (2013: 109). Beagle research compounds this difficulty, by undermining the affective relations that both Stengers and Despret suggest can overcome this problem; in the context of beagle research affect becomes a barrier to the participatory co-production of knowledge, because the animals’ amenability makes them unlikely to ‘object’ to what is happening to them even if – technically speaking – space is provided for them to do so.

There is a danger, moreover, that a lack of substantive ‘objection’ could be used as evidence of the lack of coercion involved in experimental contexts – or signifying some form of non-verbal consent – in a manner that elides any need to reflect further on experimental ethics. This danger has been present throughout the contemporary history of canine experimentation; in the first decade of the 20th century, for instance, researchers’ and care-takers’ affective work in ensuring animal ‘happiness’ was used to deflect anti-vivisectionist criticism, and drawn on as evidence for the animals’ well-being:

Cannon’s [1909] code of regulations governing laboratory procedures involving animals, for example, was written explicitly with the antivivisectionists in mind […] Like many of his contemporaries, he adopted the approach of the late nineteenth-century physiologists who repeatedly emphasized their humanitarian concerns and their use of anaesthetics when confronted by antivivisectionists’ charges, downplaying the physiological rationale behind their particular concerns with suffering. (Dror, 1999: 235)

This logic continued into the mid-20th century, as illustrated by guided tours occurring at Davis itself in order to illustrate the dogs’ well-being to the public, with the Veterinary School’s annual report describing how ‘several hundred people visit the colony annually and
lecturing on kennel activities continue. An open-door policy has averted public criticism by those opposed to the use of dogs for research’ (School of Veterinary Medicine, 1961: i). In pointing to the level of care given to animals, researchers were able to mask the ultimately instrumental function of affect in ensuring animal distress did not disrupt the experiment. Affective relations, therefore, were not just pivotal to the selection and on-going care of dogs, in ways that ensured smooth experimental progress, but were used to diffuse criticism from anti-vivisectionists for whom dogs had been a potent weapon in gaining public sympathy since the 19th century (again in campaigns within both British and North American contexts and US, see French, 1975; Elston, 1987; Lederer, 1987). The problematization of co-production in the laboratory is brought into still sharper focus, when examining the consolidation of beagles more specifically.

**Standardizing beagles**

Given that, for a variety of reasons, so few breeds met the requirements of the laboratory (Andersen 1970: 3-4), in the mid-20th century serious consideration was given to developing a new breed of dog specifically for research purposes (Zinn 1968: 1886). Indeed, attempts to develop such a dog appear to have been made in Oregon (McKelvie et al. 1971: 281). Nonetheless, the beagle quickly became established as the standardised laboratory dog for it had a vast number of characteristics it had in its favour (to expand on the opening quotation):

The most desirable qualities of the Beagle as an experimental dog are its medium size, moderate length of hair coat in two or more colors, even temperament, adaptability to living in groups, representative conformation of the dog, and the lack of need for cosmetic surgery. The Beagle’s excellent disposition and gay personality are two its greatest assets, because special handling is seldom necessary and a minimum amount of restraint is required for
most experimental procedures. Its excellent disposition is the result of culling ill-tempered dogs throughout the history of the breed. Although a wide range of behavior traits can be identified in the Beagle, they rarely show aggressiveness, timidity, or shyness. (Andersen 1970: 4)

In this extract it can be seen quite clearly that the beagle’s affective qualities muddy the division between affect and economy; because ‘special handling’ is rarely needed with the beagle and because they do not need to be ‘restrained’ (and pictures of the veterinarians at work at UC-D (e.g. McKelvie & Andersen 1966: 32) show work being conducted without as much as a lead); the beagle’s gay personality actually makes the experiment cheaper to run and makes the already-articulated goals of the experiment easier to achieve. Once again, it is worth noting that this is not a one-off claim. The same desirable characteristics of the beagle are stressed repeatedly both by researchers from both UC-D (e.g. Andersen & Goldman 1960: 129; Solarz 1970: 453) and elsewhere, who stress their ‘temperament’ (Zinn 1968: 1885) and ‘extreme degree of nonaggressiveness’ (Scott 1970: 723). In all of these instances affect has no special qualities; it is something to be manipulated for experimental gain.

As made explicit in Anderson’s characterisation of beagles’ ‘gay personality’, the breed was specifically selected because the animals’ temperament made them less likely to resist experimental procedures and disrupt the experiment. This temperament, moreover, was actively constructed through culling ‘ill tempered’ animals; what results, therefore, is an animal who is conducive to laboratory work. The barriers to giving beagles greater agency in the research project, therefore, are historical and easily be resolved through creating the space to learn how the animals signify distress.

This is not to say that affective relations with beagles give no scope for animals to shape the production of knowledge; as we discuss elsewhere (Giraud and Hollin, forthcoming), for
instance, at UC-D the spatial environment of the colony was shaped through knowledge gained via affective relations. This knowledge led to the development of new cage-designs and care-taking practices (Anderson and Goldman, 1950; Anderson and Hart, 1955; Anderson, 1964; Solarz, 1965), which were designed to maximise animal happiness. Even though cage design was – seemingly – co-produced, however, the ultimate aim of these re-designs was to ensure the dogs’ on-going compliance in the experiments; this research, therefore, was decisively ‘un-cosmpolitical’ in Stengers’s sense (2005; 2010; 2011), because a pre-determined experimental goal had already been decided and – though knowledge gained from affective relations shaped the way this goal was achieved – it did not shape the end outcome of the experiments. Beagles again, therefore, illuminate barriers to using affect as the grounds for participatory research, as – in this instance – breed histories and knowledge gleaned from affective relations, actively discourage any forms of behaviour that do not signify ‘consent’.

The difficulties of co-production with standardized animals

Beagle research also elucidates difficulties in relation to the problem of enabling animals to participate in the production of scientific knowledge when faced with what Davies (2012) describes as a ‘multitude’ of standardized animals. Davies argues, for instance, that if researchers have an ‘openness to biological becoming’ by paying close attention to unusual animal behaviour, and learning from it rather than trying to eliminate behavioural anomalies to fit the predetermined needs of the experiment, then this can give rise to new forms of knowledge (2013: 133). Davies suggests, however, that the scale of laboratories and internationalisation of standards means that unusual behaviour is only valued if it has direct utility for humans.
The standardization of beagles extends and complicates these claims; caring for dogs as individuals was seen to be of experimental importance (and thus as having direct utility for researchers as Davies describes). Unlike mice, however, where standardization makes it difficult to individuate animals, one of the imperatives for beagle standardization was to improve the quality of affective relations that could be forged with individual dogs. In the years following the Second World War there appears to have been increasing discontent with the use of ‘random source’ dogs (Zinn, 1968: 1883). The intermingling of ethical and epistemic complaints against the random source dog is made particularly clear in the following editorial which explicitly compares the care and attention devoted to medical students with that given to experimental animals:

The ‘normal’ [i.e. ‘available’] dog could be severely anemic, infested with fleas, lice, ticks, and intestinal parasites such as amoebae. He could have struggled to survive in a state of malnutrition in a poor neighbourhood, without the care and attention necessary for normal growth and development. He may be influenced by an extreme sense of insecurity and anxiety, if such psychic states exist in dogs – who knows? Even more, consider the possible psychologic trauma produced by his captivity, transportation to the laboratory, neglect, and nonsympathetic care during his imprisonment. His sole visitor was the disinterested caretaker who handled the dog roughly in response to the call of the investigator for a ‘normal dog’ for today’s ‘crucial’ experiment... Normalcy should be supported by criteria of care and health in dogs as well as in man regardless of the demands of effort and funds. Treat not the dog like a dog but more like a man, or the experimental results will ‘go to the dogs’.

(Burch 1959: 805-806)
In the exceptionally emotive language of this extract we can see that ‘random-source’ dogs introduce a degree of uncertainty into experimental protocols which may adversely affect experimental findings; treat the dog not ‘like a dog but more like a man’ if your experiment is to go to plan (see also; Zinn 1968: 1883).

The standardization of beagles was thus due to the demand for a steady supply of animals who were amenable to engaging in affective relations with researchers, in order to ensure temperamental (and hence experimental) parity between results. Beagles were, as discussed earlier in the chapter, specifically selected because of this capacity to form bonds with researchers, in order to ease the research process; with beagle standardization what was created, therefore, was not an undifferentiated multitude of what Haraway would refer to as ‘killable’ animals (2008: 80), but an affective multitude. Whilst a growing body of research explores how individuation and affective relations can open up new forms of becoming, what beagle research illustrates is that these relations do not always create space for more participatory forms of knowledge production and can actively underpin the biopolitical management of laboratory animals.

**Conclusion**

The consolidation of beagles as laboratory animals contributes to existing debates about the role of affect, in enabling laboratory animals to participate in the production of scientific knowledge. Affective researcher-animal relations have, in a number of instances, been seen as a productive site for fostering ethical accountability, which enables animals to have a more active role in the research process and – echoing Stengers and Despret – allows them to ‘object’ to experimental obligations. Beagles, however, complicate the relationship between
affect and co-production, in ways that has implications for future explorations of how non-humans can participate in the production of knowledge.

Central to the rationale of using dogs for research was their amenable temperament and capacity to form bonds with researchers. Beagles, more specifically, were selected due to their enhanced receptiveness to these bonds, something that was enhanced through selective breeding. The capacity for beagles to bond with researchers and care-takers, therefore, is not just a part of everyday care-practices, which can provide new ways of ‘becoming-with’ animals (to put it in Davies’s terms (2013)), but an engineered component of laboratory practice. The large-scale standardization of beagles, moreover, was predicated on this engineered capacity to form affective bonds.

Beagles, therefore, raise several questions for co-productions of knowledge with nonhumans: Firstly, they foreground the ambivalent role of affect and illustrate how it can be manipulated in ways that encourage certain forms of ‘becoming’ (such as contented animal-researcher relations) and discourage others (such as resistance on the part of the animals). This, in turn, complicates the role of affect in opening space for ethical accountability, and foregrounds the need to consider the socio-historical histories of human-animal relations when exploring the ethical significance of somatic relations. Attention to the ambivalent role of affect, and how this has been actively shaped by socio-historical forces, in other words, is vital when exploring the barriers to realising the social justice agenda that is – or at least should be – bound up with the co-production of knowledge with nonhumans.
It should be noted that these arguments are not specific to the research at UC-D; all of these arguments in favour of the dog are deployed elsewhere within the scientific literature at around the same time (see, e.g., Scott 1970; Zinn 1968).

Candea here is referring specifically to the ‘Stengers-Despret shibboleth’ – as coined by Bruno Latour – which suggests that ethical science is predicated on the possibility for objects of study to ‘object’ to the obligations imposed on them by researchers (2013: 109).

The most famous example of this being the ‘Brown Dog Affair’ in 1907, when a statue of a little brown dog (that had been at the centre of contemporary anti-vivisection campaigns) was erected in Battersea with the inscription: ‘In memory of the brown terrier dog done to death in the laboratories of University College in February 1903, after having endured vivisection extending over more than two months and having been handed over from one vivisector to another till death came to his release. Also in memory of the 232 dogs vivisected at the same place during the year 1902. Men and women of England, how long shall these things be?’ (cited in Mason, 1997: 23). The statue gained infamy after triggering riots in when medical students from University College London came to remove it, and the working class population of Battersea took objection at their actions.

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