

# Foucault and Animals

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## The Birth of the Laboratory Animal: Biopolitics, Animal Experimentation, and Animal Wellbeing

*Robert G. W. Kirk*

“The congenital weakness of the sociology of science”, Bruno Latour famously claimed in 1983, “is its propensity to look for obvious stated political motives and interests in one of the only places, the laboratories, where sources of fresh politics as yet unrecognised as such are emerging”.<sup>1</sup> From the 1980s through to the 1990s the ‘laboratory’ became a privileged space within studies of science, medicine, and technology, a trend some thought indicative of an emerging subfield of “laboratory studies”.<sup>2</sup> However, this was not to be. By the first decade of this century the laboratory had become a “neglected subject” despite various promising models of analysis having been “around for a decade or two and . . . much cited”.<sup>3</sup> This essay seeks to take seriously Latour’s portrayal of the laboratory as a locus of new and unrecognised politics by exploring the ways in which the nonhuman animal has contributed to the constitution of *a certain type* of laboratory alongside *a certain type* of politics.

If, as Latour claimed, within modern society it is “inside the laboratories where the future reservoirs of political power are in the making”, then we might reasonably expect *this* institutional space to be the originary site within which nonhuman animals were included within biopolitical forms of power or ‘biopower’.<sup>4</sup> Ultimately, nonhuman animals were drawn into the laboratory to promote human health. In this sense, the meaning of biopower is consistent with that articulated by Foucault, being “what brought life and its mechanisms into the realm of explicit calculations and made knowledge-power an

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- 1 Bruno Latour, “Give Me a Laboratory and I Will Raise the World,” in *Science Observed*, ed. Karin D. Knorr-Cetina and Michael Mulkay (London: Sage, 1983), 141–170 (157).
  - 2 Karin D. Knorr-Cetina, “Laboratory Studies: The Cultural Approach to the Study of Science,” in *Handbook of Science and Technology Studies*, ed. Sheila Jasanoff et al. (Beverly Hills: Sage, 1995), 140–166.
  - 3 Robert E. Kohler, “Lab History Reflections,” *Isis* 99 (2008): 761–768.
  - 4 Latour, “Give Me a Laboratory and I Will Raise the World,” 157.

agent of the transformation of human life”.<sup>5</sup> Yet, when one looks to the material culture of the laboratory, it becomes obvious that biopower is not limited to the transformation of *human* life. Even if this *end* remains the focus of study the material *means* of transforming *human* life requires the transformation of *nonhuman* life. Whilst it might appear that nonhuman animals were excluded when Foucault wrote of the “threshold of modernity” being “when the life of the species is wagered on its own political strategies” as nonhumans lack an obvious politics with which to place their lives at stake, this may not in fact be the case. When “modern man” placed his life at stake through his politics it was not just his life that was wagered.<sup>6</sup>

The “disappearance of the sick man” from medical cosmology between 1770 and 1870 was accompanied by the appearance of the nonhuman animal within medical knowledge and practice.<sup>7</sup> An example is that of hygiene, which, as Foucault noted, emerged as a means of regulative control of populations in late eighteenth century France focussed as much upon epizootic as epidemic phenomena.<sup>8</sup> Nowhere was the transformation of medicine via a dialogue between the nonhuman and human more evident than in the laboratory based practices of scientific medicine. When Pasteur mobilised the microbe, itself a form of nonhuman life, he weaved together human and nonhuman health whilst simultaneously remaking nonhuman animals as tools in the production and testing of vaccines.<sup>9</sup> The development and success of vaccination, of course, relied upon the formation of the sciences of statistics, hygiene, and public health, and in this way can be read as an example of biopower transforming the human population. However, attention to the practices of

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5 Michel Foucault, *The Will to Knowledge: The History of Sexuality 1*, trans. Robert Hurley (Harmondsworth: Penguin, 1998), 143.

6 One might also ask the question: who spoke for the human species? Many human beings were and are excluded from ‘high’ politics yet Foucault almost certainly had in mind the ‘low’ politics which nonhuman animals might equally be said to play a role through their participation within everyday power relations.

7 N. K. Jewson, “Disappearance of the Sick-man from Medical Cosmologies, 1770–1870,” *Sociology* 10 (1976): 225–244.

8 Michel Foucault, *The Birth of the Clinic*, trans. A. M. Sheridan Smith (London: Routledge, 1997), 26–36. See also Michel Foucault, “The crisis of medicine or the crisis of antimedicine?” *Foucault Studies* 1 (2004): 5–19, where Foucault reminds us that it “was the catastrophic loss of life of herds of cattle in the south of France that contributed to the origin of the Royal Society of Medicine. The Academy of Medicine in France was born from an epizootic, not from an epidemic, which demonstrates that economic problems were what motivated the beginning of the organization of this medicine” (16).

9 Bruno Latour, *The Pasteurization of France* (Cambridge, MA: Harvard University Press, 1988).

producing vaccines reveals the inescapable presence of nonhuman animals at the core of the biopolitics of modern medicine.<sup>10</sup> Nonhuman species as diverse as mice, guinea-pigs, rabbits, chickens, and horses, obtained new roles in the wake of the late nineteenth-century “laboratory revolution”.<sup>11</sup> This transformation not only made nonhuman animals essential to the later work of the biomedical sciences and pharmaceutical industry but, as we shall see, gave them a central role in the governing of global health by the mid-twentieth century.

If “biopower” is that which “brought life and its mechanisms into the realm of explicit calculations and made knowledge-power an agent of the transformation of human life” then its *process* if not its *aim* was to fundamentally transform human-nonhuman relationships. This is nowhere more explicit than in the laboratory, which itself was brought into being and continues to operate through a biopolitical dialogue between the human and nonhuman animal structured about complex power relationships. Several questions follow. In what ways, we might ask, have nonhuman animals been constituted as objects of biopower? How have humans been constituted as subjects of biopower in relation to the nonhuman? How have nonhuman animals shaped the ways in which humans have internalised biopower to constitute their selves? Each of these questions engages with the nonhuman animal at a different level, yet all probe the extent to which nonhuman animals are enmeshed within biopower even when the biopolitical aim is ultimately the transformation of human life. Whilst this contribution attempts to answer some of these questions through the laboratory the answers found have wider societal significance.

But first, we will begin by examining the experimental animal from the perspective of Giorgio Agamben’s rethinking of Foucault’s articulation of biopolitics through the figure of *homo sacer*. We do so in order to establish the usefulness of Agamben’s articulation of modern biopolitics for understanding the role of the nonhuman animal within the biomedical sciences and to distinguish its utility from that of Foucault.

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10 One might also turn to the use of vaccines within veterinary medicine as a means to locate nonhuman animals within biopolitics. However, in doing so it should be noted that controlled slaughter is a viable alternative when maintaining the health of nonhuman populations in a way that is not conventionally acceptable in human populations.

11 Andrew Cunningham, “Transforming Plague: The Laboratory and the Identity of Infectious Disease,” in *The Laboratory Revolution in Medicine*, ed. Andrew Cunningham and Perry Williams (Cambridge: Cambridge University Press, 1992), 209–247.

## 1 The Nonhuman Animal and the Birth of the Laboratory

Historical studies have revelled in asserting the difficulty of determining *what* a laboratory might be and *where* it might be found.<sup>12</sup> And, despite appropriating a Latourian agenda to overcome commonplace assumptions of “inside” and “outside”, these studies are in the main focussed about how “objects” and “knowledge” travel from within the laboratory to the world without. Where nonhuman animals have featured in such histories they are framed about the question of how living beings have moved from nature to the laboratory and subsequently become essential ‘tools’ of knowledge production within the biomedical sciences.<sup>13</sup> From a biopolitical perspective, however, the nonhuman animal is much more than a material that passes into and out of the laboratory space. Rather, following Giorgio Agamben whose work prioritises the originary moment in determining the meanings and importance of concepts, the nonhuman animal can be said to have been constitutive of the laboratory as a physical and biopolitical space. In Britain, the passing of the Cruelty to Animals Act (1876) was the originary point at which, on the one hand, a new form of life—the experimental animal—was brought into being. And, on the other, the laboratory was established as a new biopolitical space.<sup>14</sup> In other words, in the late nineteenth century the experimental animal and the biomedical laboratory co-emerged so as to create a new biopolitical space within which human as much as nonhuman life was to be creatively transformed.

The Cruelty to Animals Act (1876) instituted a complex bureaucratic system which at once banned any animal experiment “calculated to give pain” whilst simultaneously empowering the Secretary of State to exempt individuals from this provision via an elaborate licensing system. In practice, anybody

12 E.g. Robert E. Kohler, *Landscapes and Labscapes: Exploring the Lab-Field Border in Biology* (Chicago: University of Chicago Press, 2002); Graeme Gooday, “Placing or Replacing the Laboratory in the History of Science?” *Isis* 99 (2008): 783–795.

13 Adele E. Clarke and Joan H. Fujimura, *The Right Tools for the Job: At Work in the Twentieth-Century Life Sciences* (Princeton: Princeton University Press, 1992); Robert E. Kohler, *Lords of the Fly: Drosophila Genetics and the Experimental Life* (Chicago: University of Chicago Press, 1994); and Karen Rader, *Making Mice: Standardizing Animals for American Biomedical Research, 1900–1955* (Princeton: Princeton University Press, 2004). Whether laboratory animals can be meaningfully approached less as tools and more as laborers is addressed by Jonathan L. Clark, “Labourers or lab tools? Rethinking the role of lab animals in clinical trials,” in *The Rise of Critical Animal Studies*, ed. Nik Taylor and Richard Twine (New York: Routledge, 2014), 139–164.

14 For the historical context of this act see R. D. French, *Antivivisection and Medical Science in Victorian Society* (Princeton: Princeton University Press, 1975).

intending to conduct an experiment on living animals had to obtain various licences from the Secretary of State to do so. A personal license was required covering the experimenter as an individual, an example of how practices of regulating and conducting animal experimentation contributed to the construction of the scientific identity. In addition, the spatial location of experiment itself required a license. Thus, as well as formally instantiating a new statutory form of nonhuman animal, the 'experimental' animal, the Cruelty to Animals Act (1876) spatially constituted the physical site of the biomedical laboratory. Furthermore, it did so through reference to the material practice of manipulating biological life with the intent of making life more productive. As such, the Cruelty to Animals Act (1876) established the biomedical laboratory as a new biopolitical site.

This system allowed experiments to be conducted on animals providing the intent was "the advancement by new discovery of physiological knowledge or of knowledge which will be useful for saving or prolonging life or alleviating suffering". It is notable that the Act did not stipulate that the knowledge so produced, the life saved (and/or prolonged), nor the suffering to be alleviated, was to be restricted to human life alone. On the contrary, the scientific medicine was organised about the promotion of life regardless of species. Finally, the Cruelty to Animals Act (1876) required that experimental animals be placed "under the influence of some anaesthetic of sufficient power to prevent the animal feeling pain".<sup>15</sup> Though exemptions could be obtained in the form of a range of additional certificates when "insensibility [to pain] cannot be produced without necessarily frustrating the object of such experiments" the general spirit of the Act was to curtail the likelihood of experimental animals experiencing physiological pain.<sup>16</sup> As such, cruelty was firmly grounded within the material biology of life and physiological pain was established as the moral currency at stake.

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15 "Cruelty to Animals Act, 1876" (39 & 40 Vict. C. 77) s. 3.

16 Some species, including dogs, cats, horses, asses and mules, also required additional dispensation in the form of specific certificates due to their cultural and social value within late nineteenth century Britain. Thus, Certificate A was required to dispense with anaesthetic; Certificate B to allow an animal to recover without an anaesthetic; Certificate C allowed experiments to be conducted not for the advancement of knowledge per se but for illustrative purposes (e.g. lectures) and Certificate D allowed the testing and confirmation of earlier work; for the use of dogs or cats without anaesthetic Certificate E was required or EE if the animal was to be allowed to recover without anaesthetic; finally Certificate F was needed to use horses, asses, or mules, combined as necessary. See *Final Report of the Royal Commission on Vivisection cd. 614* (London: HMSO, 1912), 4.



All of this, importantly, was achieved through a peculiar form of inclusive exclusion comparable to that which Giorgio Agamben has identified as marking the “hidden point of intersection between the juridico-institutional and the biopolitical models of power”.<sup>17</sup> Invoking the Aristotelian distinction between *zoé* (the fact of living common to all forms of life) and *bios* (a form of living appropriate to an individual or group), Agamben offered a “correction” or “completion” of Foucault’s biopolitical thesis in which he argued that “the production of a biopolitical body is the originary activity of sovereign power”.<sup>18</sup> For Agamben “what characterises modern politics is not so much the inclusion of *zoé* in the *polis*” (which in itself is “absolutely ancient”) but rather the process by which:

bare life—which is originally situated at the margins of political order—begins to coincide with the political order, and exclusion and inclusion, outside and inside, *bios* and *zoé*, right and fact, enter into a zone of irreducible indistinction.<sup>19</sup>

Through the figure of *homo sacer*, Agamben described ‘bare life’ as *zoé* included within sovereign power through its very exclusion. As a result, “traditional political distinctions (such as those between Right and Left, liberalism and totalitarianism, private and public) lose their clarity and intelligibility and enter into a zone of indistinction”.<sup>20</sup> We might add to this the erasure of distinction between human and animal, which Agamben illustrated through his identification of, amongst others, the wolf man and *Muselmann* with *homo sacer*.<sup>21</sup> Agamben presents *homo sacer* as a figure that can navigate the otherwise unintelligible zones of indistinction inhabited by bare life. Here, it will be argued, that the experimental animal can similarly be understood as a form of bare life, or *homo sacer*, where the border between human and nonhuman is unstable and constantly in need of being remade.<sup>22</sup> Or, perhaps better, *animalia sacer*.

17 Giorgio Agamben, *Homo Sacer: Sovereign Power and Bare Life* (Stanford: Stanford University Press, 1998), 6.

18 Ibid. Emphasis in original.

19 Ibid., 9.

20 Ibid., 122.

21 For the wolf man or werewolf see Agamben, *Homo Sacer*, 104–111 and for *Muselmann* see Giorgio Agamben, *Remnants of Auschwitz: The Witness and the Archive* (New York: Zone Books, 2002).

22 See Giorgio Agamben, *The Open: Man and Animal* (Stanford: Stanford University Press, 2004).

In the late nineteenth century, then, the experimental animal was brought into being by the Cruelty to Animals Act (1876) which simultaneously constituted the biomedical laboratory as a unique biopolitical space. In a double move, the Act established a ban on animal experimentation whilst simultaneously providing for individuals to be exempted from this provision by the Secretary of State allowing human and nonhuman to enter into a physical and juridical space of exemption. At the same time, a new form of life, the experimental animal, was created by its inclusion within law through the very act of its exclusion. In this sense, the experimental animal is a new and specific form of bare life, co-developing with new and specific forms of power-knowledge, both of which were inseparable from emerging biopolitical models of power. Like *homo sacer*, the experimental animal was created as a biopolitical body that could be killed without consequence.<sup>23</sup> Like *homo sacer*, the experimental animal existed within a space where the categories of human and nonhuman entered into a zone of indistinction. The experimental animal, for example, could only fulfil its obligations by being simultaneously similar enough to humans so as to suffer in their stead yet different enough for humanity to allow them to do so.

The nonhuman animal was not alone in being placed into a peculiar relationship to the law when entering the animal research laboratory. In 1971, the novelist Brigid Brophy, speaking at a symposium on the subject of animal experimentation, not only highlighted the indistinct position of the experimental animal but also revealed how the identity of the knowing scientist was shaped by the Cruelty to Animals Act (1876) having been constituted within law through their exclusion from the same:

If a researcher who was experimenting on a chimpanzee were asked, by a child . . . to explain the purpose, he would very likely say he was doing it in the rational expectation of discovering something relevant to the relief of illness in humans . . . if the child said Fine, he was going straight home to acquire a chimpanzee and start imitating the researcher, the researcher would have, in fairness to the child, to warn him that it would be unlawful for the child, or indeed the child's parents to do any such thing. Then the researcher would have to explain that the citizens give him, the researcher, exemption from the ordinary laws. And if the child asks why the citizens exempt him, the researcher would have to say it is because the citizens

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23 This claim I think holds despite the scientific propensity to employ a secularized version of the term sacrifice when killing an experimental animal. See Michael E. Lynch, "Sacrifice and the Transformation of the Animal Body into a Scientific Object: Laboratory Culture and Ritual Practice in the Neurosciences," *Social Studies of Science* 18 (1988): 265–289.

are so impressed by his claim that he has a rational expectation of discovering something toward the alleviation of human suffering.<sup>24</sup>

Over the intervening century modern democracies had come to rely on biopolitical models of power enabled by scientific medicine in order to govern not just national populations but global health. Put another way, global health had come to rely on the experimental animal as a form of bare life. What Brophy identifies as contradictory, almost unintelligible, in the biomedical scientist's claim to be serving society when their practices appear to break society's conventions, becomes explicable in the light of *homo sacer*. From this position, we can begin to make intellectual sense of the complexities and apparent contradictions deriving from animal research. Moreover, we can see how the laboratory might operate as a unique site where fresh politics as yet unrecognised as such are emerging. But in practice, how does this help? What action does it lead to next? At this point, Agamben's otherwise provoking and productive analytic elision of biopolitical with sovereign power reaches an apparent pragmatic impasse.

A problem with biopower, and arguably the reason why Foucault failed to develop the concept, is that it occupies an uncertain position between Foucault's iconic analysis of power (through the techniques by which it is exercised) and the more traditional approach of examining juridico-political representations of sovereign power.<sup>25</sup> By following Agamben and conducting an analysis that privileges the consistency of ordinary meanings as much as representations of sovereign power, we find ourselves with only one pragmatic option. We require a revolutionary conceptual change toward "a politics no longer founded on the *exception* of bare life".<sup>26</sup> Put another way, and borrowing the words of Matthew Calarco, the political work becomes that of "jamming" the processes that distinguish (and thereby define) human from nonhuman.<sup>27</sup> These processes, which Agamben has labelled the "Anthropological Machine", sustain the material cultures of the laboratory and the knowledge that

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24 Brigid Brophy, "The ethical argument against the use of animals in biomedical research," in *The Rational Use of Living Systems in Biomedical Research UFAW Symposium 7th–8th October 1971*, ed. William Lane-Petter (London: UFAW, 1972), 51–57 (51).

25 Paul Patton, "Agamben and Foucault on Biopower and Biopolitics," in *Giorgio Agamben: Sovereignty and Life*, ed. Matthew Calarco and Steven DeCaroli (Stanford: Stanford University Press, 2007), 203–218.

26 Agamben, *Homo Sacer*, 11.

27 Matthew Calarco, "Jamming the Anthropological Machine," in *Giorgio Agamben: Sovereignty and Life*, ed. Matthew Calarco and Steven DeCaroli (Stanford: Stanford University Press, 2007), 161–179.

emanates from such sites.<sup>28</sup> For this reason, such a course of action would be attractive to those, such as Gary Francione, who have argued for a complete separation of human and nonhuman animal and an end to all instrumental and economic relationships between the two.<sup>29</sup> They would find common ground in the claim *everything* must change. Yet, epochal moments are rare outside the realm of thought. Furthermore, one might query the extent to which it is appropriate to approach the “question of the animal” as a process of “rethinking” sovereign (or any other form) of power. As long as nonhuman cognitive worlds remain closed to us any project styled as thought would appear to privilege the human. Consequently, nonhuman animals are rendered passive and incapable of contributing to or resisting political change. This is the limit of the utility of Agamben’s philosophy for animal studies. With Foucault, however, we might travel further.

For Foucault, power was to be understood as relational, simultaneously exercised and experienced by individuals, whilst individuals themselves were seen to be products and processes of such power—becoming “subjects” in the dual sense of the word. To the extent to which power is understood as how individuals act upon one another, how they conduct others and themselves, as well as the changes in such processes, there appears no good reason why nonhuman animals may not be located within such relations as active if unequal participants.<sup>30</sup> However, whilst nonhuman animals can meet Foucault’s first sense of ‘subject’, being “subject to someone else by control or dependence”, their capacity to participate in the second, being “tied to his own identity by a conscience or self-knowledge”, is less obvious (particularly to those who think twice about recognising animal consciousness or self-knowledge).<sup>31</sup> Yet the issue may, perhaps, more profitably be avoided—albeit temporally—by recalling that Foucault did not orientate his understanding of power about consciousness per se. On the 14th January 1976 Foucault explained that his concern was not with “conscious intention or decision” but rather the “study of power at the point where its intention, if it has one, is completely invested in its real and effective practices”.<sup>32</sup> When, on March 17th of the same year,

28 Agamben, *The Open*, 33–38.

29 Gary L. Francione and Robert Garner, *The Animal Rights Debate: Abolition Or Regulation?* (New York: Columbia University Press, 2010).

30 Cf. Claire Palmer, “Taming the Wild Profusion of Existing Things? A Study of Foucault, Power, and Human/Animal Relationships,” *Environmental Ethics* 23:4 (2001): 339–358.

31 Michel Foucault, “The Subject and Power,” in *Power: Essential Works of Foucault 1954–1984*, ed. James D. Faubion (Harmondsworth: Penguin, 1994), 326–348 (331).

32 Michel Foucault, “Two Lectures,” in *Power/Knowledge: Selected Interviews and Other Writings 1972–1977*, ed. Colin Gordon (New York: Pantheon, 1980), 78–108 (97).

Foucault gave his most detailed description of biopower we may legitimately suppose his former agenda applies equally to his description of the effective practices of biopolitical models of power.

Moreover, we might also note that when describing biopolitical models of power he emphasised their capacity to “make live”.<sup>33</sup> This, again, is consistent with Foucault’s general emphasis on the *creative* potential of power, generating truth, knowledge, societies and the living beings that populate them outside of the question of self-knowledge. This emphasis on creativity also serves to sharply differentiate Foucault from Agamben. The latter’s emphasis on the exposure of bare life to death, at times, effectively abandons the creativity inherent to biopolitics in favour of a destructive thanatopolitics.<sup>34</sup> Whilst it might be argued that the invention of the experimental animal was a creative act, such an argument would be restricted to the ways in which representations of juridical-political power constituted the animal. Put another way, Agamben is useful in revealing how the experimental animal came into being. The experimental animal could only exist within the new biopolitical space of the laboratory as the two were constituted by the same originary moment of sovereign power exercised in the Cruelty to Animals Act (1876). In contrast, a Foucaultian emphasis on the exercise of power might reveal that in a material and biological sense the experimental animal was not created by biopower, merely subjected to biopolitical models of power within the new space of the laboratory. Only in the twentieth century did biopower create entirely new forms of life, which were utilised as a means toward the transformation of human but also nonhuman life. For analytic clarity we might distinguish this latter form of life, this *animalia sacer*, by naming it the laboratory animal. Nonhuman animals created by and caught within specific forms of biopower which sought not only to make them live but to make them live biologically productive lives.

## 2 The Birth of the Laboratory Animal

Foucault associated biopower with the formation of the great instruments through which the state took on responsibility for the administration of public

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33 Michel Foucault, *“Society Must Be Defended”: Lectures at the Collège de France 1975–76*, ed. Mauro Bertani and Alessandro Fontana, trans. David Macey (Harmondsworth: Allan Lane, 2003), 241.

34 On Agamben and thanatopolitics see Paul Rabinow and Nikolas Rose, “Biopower Today,” *Biosocieties* 1 (2006): 195–217 (200–1).

health and the protection of the social body. As already suggested, these historical processes were consonant with the emergence of laboratory science and the remaking of medicine between the mid-nineteenth and mid-twentieth century. Prior to the intrusion of the state into the health of citizens, medicine had been structured about a system of individual patronage wherein disease was highly individualised and illness a personalized condition treated through the unique experience and individual skill of the physician. In the first half of the twentieth century, this was fundamentally transformed as the advent of mass health care reconfigured medical practice about a biopolitical logic that focussed upon a national population and emphasised depersonalized administrative efficiency. The principles and practices of laboratory medicine, for example, could mediate productively between the individual and population whilst operating with a scientific competence and administrative efficiency that met the economic needs of mass health care.<sup>35</sup> From this perspective, the 1948 founding of the National Health Service might be seen as a moment where biopower was writ large. However, this was not, and could never have been, a process wherein human life alone was the singular biopolitical object.

At a time when Britain was struggling to finance the burgeoning cost of the newly established welfare state, there was an economic need to align the new system of mass health care about an economic logic which grounded the material practices of administration, and national welfare within the principle of scientific efficiency. One approach was to emphasise the importance of non-human animals as guarantors of the national health. “The cost of laboratory animals, the cost of medical research, and the cost of maintaining the health of the population are in steeply ascending order of magnitude”, wrote William Lane-Petter in 1959. “Wise policy begins at the beginning”, he continued, “which is also the cheapest end of the scale”.<sup>36</sup> Lane-Petter was the leading spokesperson for a new field of expertise seeking to establish the “laboratory animal” at the economic base of the health of the nation. This strategy simultaneously aimed to establish the importance and credibility of a new field of expert knowledge: “laboratory animal science”. The laboratory animal as a scientific object co-emerged with the expertise of its making and care, much like the experimental animal and the biomedical laboratory in the late nineteenth century. Unlike the experimental animal, however, the laboratory animal was in many ways a biologically new form of life created for, within, and by

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35 Steve Sturdy and Roger Cooter, “Science, Scientific Management, and the Transformation of Medicine, 1870–1950,” *History of Science* 36 (1998): 421–466.

36 William Lane-Petter, “The Place of Laboratory Animals in the Scientific Life of a Country,” *Impact of Science on Society* 9 (1959): 178–196 (194).

scientific medicine. Both were deeply embedded within the biopolitical project of transforming human life. But where the experimental animal gained its identity by entering the biopolitical space of the laboratory from elsewhere, the laboratory animal was created and sustained by new forms of biopower within medical science. In other words, where the experimental animal was a means to a biopolitical end, the laboratory animal was both a means and an end in itself.

In 1940s Britain, a commercial laboratory animal ‘industry’ as we would recognise it today was yet to form. The needs of medical science were poorly understood by animal breeders, who showed little interest in cultivating biomedicine as a valued customer. Instead, laboratories became dumping grounds for animals that had hitherto no commercial value, commonly referred to as “wasters” within the then small animal trade. Scientific demand for animals so outweighed supply that researchers had little ability to determine “quality” and as a result “[t]raffic in animals had become in many cases indistinguishable from a racket”.<sup>37</sup> By 1947, the situation was so acute that the Medical Research Council (MRC) was forced to respond to unprecedented pressure placed on the government by the scientific community who demanded a state guaranteed national supply of standard experimental animals.<sup>38</sup> A new institute was established which, though initially to be called the Experimental Animal Bureau was hastily renamed the Laboratory Animal Bureau for two reasons. First, not all animals utilised by science were used experimentally. Many served as diagnostic tools to measure the potency of drugs or within various medical tests.<sup>39</sup> Second, there was a deliberate intention to break with past practices wherein any available animal could be brought into the laboratory. Consequently, the term “laboratory animal” was preferred as it emphasised that the imagined animals were to be new forms of life created for and of the laboratory.

The ideal of a “standard” laboratory animal placed the individual in a specific relationship to the population. One related to the other in a form of rationality that silently assumed a given biological population not only had a norm

37 Progress Report 1949–1950 Laboratory Animals Bureau, 1st May 1950, p. 3, FD1/378, Medical Research Council Archive, National Archives Kew, UK (hereafter NA).

38 Robert G. W. Kirk, “Wanted—Standard Guinea Pigs: Standardization and the experimental animal market in Britain c.1919–1947,” *Studies in History and Philosophy of Biological and Biomedical Sciences* 39 (2008): 280–291.

39 In a comparable sense to the way not all animals utilized by science are model organisms; cf. R. A. Ankeny and S. Leonelli, “What is so special about model organisms?” *Studies in the History and the Philosophy of Science* 42 (2011): 313–323. The language of the ‘animal model’ though present at the time was yet to establish itself as the dominant discourse of animal research.

but that that norm was both uniform and healthy. Put crudely, a healthy population of animals was assumed to be physiologically uniform which in turn made for a reliable laboratory tool as physiological uniformity was equated with consistent biological responses. In this way a 'standard' laboratory animal was constructed that was thought to respond with the same results to the same experimental scenario regardless of location or user.<sup>40</sup> The *raison d'être* of the Laboratory Animal Bureau was, therefore, fundamentally biopolitical. It was tasked with bringing into existence and normalizing new populations of nonhuman life. The means of achieving this involved the adaptation of long established biopolitical models of power developed for human populations and their deployment upon nonhuman populations.

The work of creating, regulating, and sustaining a national supply of laboratory animals was led by William Lane-Petter, director of the MRC's Laboratory Animal Bureau. At the time there was next to no systematic knowledge of the present needs of the biomedical sciences and little was known as to where animals were currently obtained from or what kind of species were most used and why. Accordingly, current practices were surveyed and the information gathered proved to be the first step in constituting a "population" of laboratory animals by means of an animal census. As a state institution the Laboratory Animal Bureau was uniquely positioned to take on this work. On the one hand, the bureau could use the Home Office records of the Cruelty to Animals Act (1876) to access all sites where animal experimentation took place. On the other, and only possible by the unique social circumstances consequent to the Second World War, the Bureau acquired through the Ministry of Agriculture the details of all persons claiming animal feed for the breeding of "experimental animals". By drawing together this information a population of experimental animal users and producers was constituted that was surveyed via a detailed questionnaire. In this way, a national laboratory animal population was brought into being.<sup>41</sup> Importantly, the Bureau's census operated not only as an exercise in quantification but to constitute that which was

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40 See for example B. Clause, "The Wistar Rat as a Right Choice: Establishing Mammalian Standards and the Ideal of a Standardized Mammal," *Journal of the History of Biology* 26 (1993): 329–349. For standardization in science generally see Geoffrey C. Bowker and Susan Leigh Star, *Sorting Things Out: Classification and its Consequences* (Cambridge, MA: MIT Press, 2000); Martha Lapland, *Standards and their Stories: How Quantifying, Classifying, and Formalizing Practices Shape Everyday Life* (Ithaca: Cornell University Press, 2009).

41 Lane-Petter, W., A. B. Barber, and H. J. King, "Survey of Laboratory Animals in Great Britain," *British Veterinary Journal* 3 (1955): 282–299.



quantified.<sup>42</sup> Moreover, this new surveillance technology operated across the human and nonhuman, simultaneously creating the nonhuman “laboratory animal” as well as its human producers and users. Each was co-constituted in relation to the other as objects subject to subtle techniques of governance within a biopolitical landscape that invited intervention.<sup>43</sup>

The survey and census positioned the Laboratory Animal Bureau as the only institution capable of interacting with the newly formed national population of laboratory animals as an object of knowledge. For example, as early as 1948 the Bureau was acting as a central point of contact placing users and producers of small animals in touch with one another. This was a deliberate strategy to create a regulated free market and eliminate local ‘dealers’ who had profited richly by preventing direct trade between laboratory and breeders. Eliminating middlemen established a viable market in laboratory animals and allowed animal producers to increase their profitability. Guaranteed custom, improved profitability and a stabilised market were valuable enticements which Lane-Petter subsequently used to encourage breeders to “submit to some sort of discipline” by joining a “voluntary” scheme to improve animal “quality”.<sup>44</sup> Membership of what became the Laboratory Animal Bureau Accreditation Scheme required adherence to “standards of housing, caging, feeding and general management of hygiene . . . compatible with the production of first class animals”.<sup>45</sup> It encouraged breeders to specialise in producing purpose bred animals for scientific use whilst initiating a process by which the animals themselves became increasingly specialised at the level of their biology.

The Accreditation Scheme formed part of a biopolitical strategy to relocate the problem of animal infection from the site of use (the laboratory) to the site of production (the breeder). Hitherto, latent infection had been a problem of the laboratory for several reasons. For one, breeders had a closer more intuitive understanding of their animals than laboratory users or the middlemen

42 For the cultural authority of census as a means to constitute “governmental objects” see M. G. Hannah, *Governmentality and the Mastery of Territory in Nineteenth-Century America* (Cambridge: Cambridge University Press, 2000). See also Michel Foucault, “Governmentality,” in *Power: Essential Works of Foucault 1954–1984*, ed. James D. Faubion (Harmondsworth: Penguin, 2002), 201–222.

43 See Ian Hacking, “Biopower and the avalanche of numbers,” *Humanities in Society* 5 (1982): 279–295; Ian Hacking, “Making up people,” in *Historical Ontology* (Harvard University Press, 2004), 99–114.

44 Advisory Committee on the Supply of Laboratory Animals Minutes of 5th Meeting, 23rd November 1949, p. 4, NA FD1/383.

45 Outline of a scheme for the accreditation of commercial breeders of guinea pigs, rabbits and mice destined for laboratory use, NA MAF189/676.

dealers. Breeders were therefore able to quickly identify signs of infection and immediately sell such animals on (a process made all the easier by the scientific demand for animals which led concerns over quantity to trump quality). A second reason was that the unregulated ad-hoc system of animal procurement meant populations of animals of different backgrounds were frequently mixed together at each stage of life by breeders, dealers and in the animal house and laboratory. As different populations had different pathogenic backgrounds, what one could tolerate another might not—particularly when individuals were stressed by encounters with new and likely unhygienic environments as they travelled. Put simply, the ad-hoc process of animal procurement at a social, economic, material and biological level appeared to encourage the spread of infection and the outbreak of disease. In contrast, regulation through the Accreditation Scheme required breeders to produce animals predominantly, if not entirely, for laboratory use. Stock had to be self-contained, purchasing animals for resale was strictly prohibited and the introduction of new breeding stock required the permission of the Bureau. Within the scheme, animals travelled direct from breeder to user or from breeder to breeder only with the Bureau's knowledge. This allowed disease outbreaks to be efficiently traced to source and the site effectively quarantined from the national population until the problem was resolved. Accordingly, breeders internalised the new system of biopolitical governance, increasing their vigilance and learning to voluntarily suspend trade should infection be suspected. This was not because they were forced to by a state-centred repressive power. Rather, compliance was assured because it was in their interests to participate in the creation and maintenance of the new system. Lane-Petter frequently claimed that the “better breeders” had “welcomed the discipline” and they did so because it increased and stabilised their profitability.<sup>46</sup> In this way, the Accreditation Scheme provided a relatively sophisticated means of continuous surveillance by which the Bureau exercised control over the movement of animals, and the spread of potential infections and disease, with minimal effort. Moreover, by introducing new standards of breeding and hygiene the scheme provided a means to establish and regulate husbandry practices that could be continuously refined toward increased productivity.<sup>47</sup> By establishing standard approaches to breeding, nutrition, housing, and handling of

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46 *Laboratory Animals Bureau Newsletter*, December 1950, 2.

47 The Scheme first covered guinea pigs and later included mice and rabbits, these being the most popular species predominantly utilized for routine medical and toxicity testing and bioassay. See William Lane-Petter, “The Accreditation Scheme for Laboratory Animals,” *Monthly Bulletin of the Ministry of Health* 12 (1953): 165–175.

animals, as well as minimum levels of hygiene, the Scheme simultaneously ensured the work of creating ever better ‘standard’ laboratory animals would be ongoing whilst equally normalizing and improving human behaviour and health. New humans, such as the ‘animal technician’, were brought into being and caught within new biopolitical models of power intended to normalize (standardize) biological life through techniques that focussed equally upon the population and the individual in order to promote the health and productivity of both human and nonhuman animal populations considered as an ecological whole.<sup>48</sup>

A significant challenge to establishing a stable national population of laboratory animals was that animal numbers vary throughout the year with the seasons and with events (such as outbreaks of infection or sudden food shortages). When an animal becomes a commodity this makes for a highly unstable market. Whatever the cause, which might be as simple as a large laboratory undertaking a new procedure so draining available numbers of a given species from the market, shortages increased the market value of the species concerned. Breeders responded by increasing production to maximise profitability leading to gluts which, inevitably, caused prices to collapse provoking new shortages as breeders cut back on production. In extreme cases, commercial breeders were made bankrupt by unexpected collapses of the market.<sup>49</sup> These cycles were tamed by the introduction of a bi-monthly publication listing all British laboratory animal breeders, their available stock, and their accreditation status, which facilitated communication between users and producers thereby enabling supply to be better attuned to demand. The publication was titled *Parade State* in reference to the military practice of monthly reporting the strength of the nation’s armed forces. Associating the laboratory with the military was deliberate as it invoked the important role laboratory animals played in safeguarding the national health. Both forms of “parade state” operated through the “power of writing”, inscribed in the material practices of record keeping and bureaucratic administration. Just as the

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48 Robert G. W. Kirk, “Standardization through Mechanization: Germ-Free Life and the Engineering of the Ideal Laboratory Animal,” *Technology and Culture* 53 (2011): 61–93.

49 For example, a severe guinea-pig glut occurred between 1948 and 1950 as “shortage of the late war years, and other factors, attracted a large number of would-be-breeders immediately after the war” causing “the biggest glut in recent years”. The subsequent collapse in prices and production led to a severe shortage in the summer of 1951 as “confidence in the future of the business had been badly shaken, the normal seasonal breeding programme was not undertaken”. See William Lane-Petter, “Supplies guinea-pigs,” *Laboratory Animals Bureau Newsletter* 2 (1951): i.

militaristic parade state had constituted the military and made it visible in a way that equally necessitated and made possible intervention and regulation, so too did the Bureau's *Parade State* publication. Moreover, both were justified in terms of their role in national defence: the former by protecting against militaristic aggressors and the latter by safeguarding health and economic production against disease and degradation.

Both the Accreditation Scheme and *Parade State* might best be viewed as examples of biopolitical models of power focussed upon life. As forms of Foucaultian biopower applied to non-human life, they illustrate how non-human animals became enmeshed within wider biopolitical discourses focussed upon the promotion of human health and welfare. Accordingly, the end of transforming human life required as its means that nonhuman life too be made increasingly productive at the level of biology. Moreover, with the laboratory animal, these models of biopolitical power quite literally created new life: biological beings that otherwise would not exist. New technologies developed to create first germ-free and then so-called Specific Pathogen Free (SPF) laboratory animals.<sup>50</sup> In 1963, Lane-Petter predicted that SPF laboratory animals were:

the healthy animals we have been looking for for years... in a short time the questionable term "SPF" etc will be forgotten, because all laboratory rats, mice and probably every other species will be of this standard of health.<sup>51</sup>

The creation and maintenance of such highly pathogenically determined animals required a plethora of new regimes of biopower. From the construction of hygienically secure buildings, the reconfiguration of architecture to provide environments defined by their (micro)biological components, to methods of reliably decontaminating objects and regulating relations between everything from feedstuffs up to and including the human. Today, SPF has indeed been dropped and all laboratory animals are expected to be pathogenically defined and maintained in environments whose biopolitical regimes encompass the human as much as their nonhuman inhabitants. In the most secure facilities, human entrants are expected to strip, shower, and don clean clothing, whilst being encouraged to refrain from mixing with animals in the outside world so as to minimise the risk of introducing unwanted microbes to the

<sup>50</sup> Kirk, "Standardization through Mechanization."

<sup>51</sup> William Lane-Petter, "Discussion," in *Laboratory Animals Centre Collected Papers Volume 12: Choice of Experimental Animal* (London: HMSO, 1963), 54–55.

laboratory ecology. Analogous biopolitical models of power have emerged to impact upon laboratory animals at the genetic level. In the 1950s, intensified inbreeding produced new populations of genetically uniform laboratory animals highly standardized for specific scientific uses.<sup>52</sup> These and other approaches to laboratory animals have become institutionalised within the commercial laboratory animal industry which grew out of the biopolitical transformations in the decades immediately after the Second World War. More recently, new methods of genetic intervention into the nonhuman animal body has extended biopolitical creativity to govern the ways in which non-human life develops in the future. Famously, the OncoMouse was genetically modified in the 1980s to be predestined to develop cancer and thereby serve as a reliable tool and biomedical analogy for research into human versions of this disease.<sup>53</sup> Subsequently, the extension of biopolitical interventions across borders of human and nonhuman have brought into being so-called “humanized mice”, rodent species which have internalised human biological material (such as tumours, tissue, organs, cells and genes). The humanised mouse is, perhaps, an example par excellence of *animalia sacer*. Here the indistinction of human and animal is literally embodied and as such it is impossible to limit the analysis of the effects of biopolitical models of power to the human in isolation. On the contrary, human and nonhuman life has been mutually constituted by and made subject to biopolitical models of power. Accordingly, more detailed study of how specific examples of biopower have operated across human-animal boundaries may reveal how active interventions become possible.

### 3 Being Subject to Care

The remainder of this paper examines how a specific biopolitical model of power—that of “humane experimental technique”—emerged as a strategy

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52 R. F. Parrot and M. F. W. Festing, *Standardised Laboratory Animals* (Carshalton: MRC LAC, 1971). For earlier practices see Rader, *Making Mice*.

53 G. Davies, “What is a humanized mouse? Remaking the species and spaces of translational medicine,” *Body & Society* 18 (2012): 126–155; D. Hanahan et al., “The origins of oncomice: a history of the first transgenic mice genetically engineered to develop cancer,” *Genes and Development* 21 (2007): 2258–2270; Donna Haraway, *Modest\_Witness@Second\_Millennium .FemaleMan©\_Meets\_OncoMouse™: Feminism and Technoscience* (London: Routledge, 1997), 55–69.

to integrate practices of constituting subjects across human and nonhuman forms of life. Subjects, that is, in the dual sense of the term: as being “subject to someone else by control or dependence” and “tied to his [or her] own identity by a conscience or self-knowledge”. Today, *The Principles of Humane Technique* (1959) is recognised, if at all, for having introduced the concept of the “3Rs” or the Refinement, Reduction, and Replacement of animals. In recent decades, the 3Rs have been institutionalised worldwide as *the* ethical basis for regimes of governance of animal dependent science. Nevertheless, whilst the 3Rs provided a conceptual organising structure for humane experimental technique in *The Principles*, the original aim was not to integrate this approach within legislative and administrative regimes governing animal research. Rather than law, *The Principles* presented the 3Rs as a pragmatic approach to facilitating science in realising itself as a moral and humane practice conducted by moral and humane subjects. Rather than being institutionalized, the 3Rs were to be embodied within human and nonhuman lives which, in turn, were envisaged as encountering and creating one another within the biopolitical space of the laboratory.

The *Principles* was the culmination of a decade-long project promoting the importance of the wellbeing of laboratory animals by the Universities Federation for Animal Welfare (UFAW). In spite of being a comparatively small animal advocacy organisation, albeit possessed of a unique and self-styled “scientific” approach, UFAW had considerable impact on the development of a “science” of animal welfare. For an animal advocacy organisation, UFAW had gained unprecedented credibility within the sciences via the publication of *The UFAW Handbook on the Care and Management of Laboratory Animals* (1947) which appropriated wider contemporary concern about the standardization of laboratory animals. This was the first general guide to standards of animal husbandry for all species of animals commonly used within the sciences. Its ethos was above all pragmatic, species specific chapters written by experienced scientists which established practical standards for animal house design, types of cages, as well as health, nutritional, environmental and social needs of species, whilst also indicating best practice for human-nonhuman interaction through husbandry and handling. The importance of the *UFAW Handbook* was the way in which it subtly amalgamated the practical needs of scientific practice with the moral values of animal welfare. The work of creating reliable experimental tools was made dependent upon the wellbeing of animals and as such animal welfare was moved from a political and largely rhetorical moral value to a quantifiable, scientific and biopolitical value materialized in the biology of laboratory animals. For example, the control of pain, materialized as biological and thus reimagined as quantifiable, was transformed into a condition of reliable science:

No man wittingly brings about the failure of his own work. The great difficulty in all scientific research is to exclude complicating factors. Pain, suffering and illness are such factors. Only insofar as these are either excluded or kept under control can the research worker hope to achieve the object of his investigations.<sup>54</sup>

Pain retained its status as a moral value but in addition it was amalgamated within the values and practices of science. The management of pain gained new value in laboratory practices as a factor upon which knowledge production was dependent. Local practices of animal husbandry, for example, were to be standardized about normative regimes which “conform to a high standard of humaneness and will at the same time ensure that . . . [scientific] conclusions shall be thoroughly reliable.”<sup>55</sup> In this way, *The UFAW Handbook* contributed to a new biopolitical model of power which amalgamated the needs and values of science with those of animal wellbeing. What had hitherto been a problematic biopolitical space—the suffering of animals in scientific experiments—was thereby transformed into a productive site of intervention. Moreover, good science was becoming a matter of good con(science). In a 1963 article tellingly titled “Humane Vivisection”, Lane-Petter explained how “[s]uffering far from being inseparable from animal experimentation should in fact be regarded as a confusing variable whose elimination demands great effort on the part of the experiment”.<sup>56</sup>

Within this new apparatus of biopower humans that worked with laboratory animals were subject to processes of standardization (and normalization) as much as the nonhuman animals. In this sense, the laboratory, like other sites examined by Foucault, required the moulding of docile bodies.<sup>57</sup> Not in a coercive sense, but rather as a result of the internalization of a specific way of being. In the words of Lane-Petter, reliable science depended on “docile dogs, contented cats and relaxed rodents”, which is to say science required not just collaborative bodies but collaborative subjects. This was true for the human as it was for the animal as the laboratory encounter was envisaged as a creative

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- 54 H. P. Himsworth, “Foreword,” in *The UFAW Handbook on the Care and Management of Laboratory Animals*, ed. Alastair N. Worden and William Lane-Petter (London: UFAW, 1957), v–vi (vi).
- 55 T. Dalling, “Foreword,” in *The UFAW Handbook on the Care and Management of Laboratory Animals*, ed. Alastair N. Worden and William Lane-Petter (London: UFAW, 1947), v.
- 56 William Lane-Petter, “Humane Vivisection,” *The Physiologist* 6 (1963): 121–124 (122).
- 57 Michel Foucault, *Discipline and Punish: The Birth of the Prison*, trans. Alan Sheridan (Harmondsworth: Penguin, 1979).

space wherein human and animal subjects met and constituted one another. Drawing an analogy with the clinical practices of veterinarians and paediatricians, Lane-Petter described how:

Veterinarians and paediatricians, whose patients normally possess uncomplicated mentalities, are familiar with their ability to tolerate without distress lesions and manipulations that most human adults would find insupportable; but they also know this tolerance can only be evoked if there is a satisfactory relationship between patient and clinician. The same is true of the experimental animal.<sup>58</sup>

This interspecies relationship, which was of course one of power, required a certain type of human subject beholden to and constitutive of a certain type of animal subject. Though Lane-Petter made no direct reference to humane experimental technique the latter shared the same ethos. *The UFAW Handbook*, for example, identified the “psychological make up of the animal” as critically important because:

A buck rabbit may be a vicious brute and a bear gentle. With every species the human attendant who is prepared to lavish care on his charges and makes determined efforts to make pets of them is an essential ingredient to success. An unsympathetic man will drive the best of animals into a vicious circle of suspicion and moroseness.<sup>59</sup>

Such logic is akin to what Foucault described as “a network or circuit of bio-power, or somato-power” illustrating how “power relations can materially penetrate the body in depth, without depending on the mediation of the subject’s own representations”. The fact that this power relationship involves the non-human is of no matter: “[i]f power takes hold of the body, this isn’t through it having first to be interiorised in people’s consciousnesses”.<sup>60</sup>

Nevertheless, and whilst orientated about the production of docile bodies, humane experimental technique as a biopolitical strategy facilitated the

58 Lane-Petter, “Humane Vivisection,” 121.

59 R. E. Rewell, “The Choice of Experimental Animal,” in *The UFAW Handbook on the Care and Management of Laboratory Animals*, ed. Alastair N. Worden and William Lane-Petter (London: UFAW, 1957), 166–175 (167).

60 Michel Foucault, “The History of Sexuality,” in *Power/Knowledge: Selected Interviews and Other Writings 1972–1977*, ed. Colin Gordon (New York: Pantheon, 1980), 166–193 (186).



production of nonhuman subjects. W. M. S. Russell, primary author of the 3Rs, was quite clear that:

the motto of the experimenter in his dealings with his subjects must be *mens sana in corpore sano* [a healthy mind in a healthy body] and he will not get the one without the other.<sup>61</sup>

Russell synthesized a complex (and to many readers mystifying) mixture of then emerging ideas, weaving together cybernetics, systems theory, ethology, endocrinology, psychoanalysis, zoology, genetics and biology—amongst others—to argue that living beings were constituted through their shared physical and social relations. One crucial influence on Russell's thinking was the work of the Swiss zoo biologist Heini Hediger. It was no coincidence that the latter's *Wild Animals in Captivity*, when translated into English in 1950, contained a foreword by Edward Hindle then President of UFAW.<sup>62</sup> In *The Principles*, Russell wrote “[e]verything about the rich physiological network suggests the possibility of much more refined effects of behavioural upon internal states”.<sup>63</sup> Humane experimental technique was intended in part to catalyse new research exploring how physical and social environments could be manipulated so as to promote the biological productivity of the living beings that inhabited scientific spaces. Accordingly, those who worked with laboratory animals were obliged to develop new tools with which to intervene into this biopolitical space whilst remaining aware that the subject was a creative force in any activity.

It was not, however, just the nonhuman animal that was to be creatively constituted through the new models of biopower promised by humane experimental technique. Participation in the biopolitical space of the laboratory, Russell believed, placed the subjecthood of the knowing human experimenter at stake. In the final somewhat esoteric future orientated chapter of *The Principles*, Russell sketched “the factors which govern the progress” of humane experimental technique and by extension reliable biomedical knowledge. The foremost factor was the experimental “personality” which Russell mapped through an innovative adaptation of Adorno's recently published concept of the “authoritarian personality” alongside his own notion which he

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61 W. M. S. Russell and R. L. Burch, *The Principles of Humane Experimental Technique* (London: Methuen & Co Ltd, 1959), 13.

62 See Matthew Chrulow, “Animals as Biopolitical Subjects,” in this volume.

63 Russell and Burch, *The Principles of Humane Experimental Technique*, 12.

named the “revolutionary” personality.<sup>64</sup> Both personality factors were pathological and incompatible with science. The former correlated to hostile attitudes toward nonhuman animals and the latter to radical antivivisectionism (presented as detrimental to animal wellbeing due to sentimental anthropomorphism). Those with a high authoritarian factor would make poor scientists as experimental design required thinking in terms of multiple variables, which was precisely the style of thinking the authoritarian personality prevented. Further, as biomedical researchers worked with animals, they could not be “revolutionary” as they would not be antivivisectionists. By following this tautological logic Russell concluded that the future of humane experimental technique was a problem “largely of knowledge; application may be taken for granted”.<sup>65</sup> A humane orientation toward animals was psychologically correlated to scientific personality just as humane treatment of laboratory animals was a necessary condition of scientific practice. Hence, to be a scientist required that one be humane to animals. Scientific identity was thereby grounded and made readable in the practice of one’s day to day orientation toward and interactions with nonhuman animals. From this perspective, humane experimental technique was more than a biopolitical intervention to promote and protect nonhuman life. It was a practice of the “care of the self” through which the scientist constituted his or her self as a subject in relation to the nonhuman animal.

#### 4 Conclusion

Today, codified and widely institutionalized as the 3Rs, humane experimental technique is barely recognizable as a practice of the care of the self. Instead, the *Refinement* of experimental design so as to diminish suffering, efforts to *Reduce* the number of animals used in a given procedure, and the *Replacement* of animals where possible, provide the basis of a pragmatic and legislatable approach to the ethical governance of animal dependent science. In 2010, for example, the European Union ratified a new directive governing animal experimentation which incorporated the 3Rs. In spite of a major justification for this move being a response to animal welfare having become recognized as a distinctive “cultural attitude” of European citizens, the institutionalization of the 3Rs translated humane experimental technique into an administrative check

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64 Theodor W. Adorno, Else Frenkel-Brunswik, Daniel J. Levinson and R. Nevitt Sanford, *The Authoritarian Personality* (New York: Harper, 1950).

65 Russell and Burch, *The Principles of Humane Experimental Technique*, 155.

list fully compatible with bureaucracy.<sup>66</sup> One consequence of this move is that the 3Rs are disconnected from the human subject and so can be outsourced (a practice that has fuelled a profitable side-industry for commercial laboratory animal suppliers). What is lost here is the recognition that aspects of the laboratory, imagined as a biopolitical space wherein new forms of subjectivity co-emerge, may not be fully governable by legislation. In 1912 this point was made by Dr. George Wilson, a vocal critic of animal experimentation who served on the second Royal Commission, who acknowledged:

strict compliance with the provisions and intentions of the Act cannot be ensured, no matter how extended or inquisitorial inspection may become; it must always mainly rest on the care, ability, and honest endeavour of the licensee.<sup>67</sup>

On the one hand, Russell presented humane experimental technique in 1959 as a strategic intervention through which he hoped encounters within the laboratory would be governed according to a specific ethical framework that valued the prevention and reduction of suffering (which was simultaneously assumed to promote biological productivity). Yet, humane experimental technique equally imagined animal research as a collaborative practice of creative becoming across the borders of human and nonhuman. As such, the ethical guarantor embedded within the 3Rs was established and internalized through the subjecthood of the knowing human being placed at stake in the laboratory encounter.

From the perspective of Agamben, the laboratory does indeed become a site from which, in the words of Latour, “sources of fresh politics as yet unrecognised as such are emerging”. As a biopolitical space for the production of bare life, we would expect the distinction between human and animal to be unstable within the laboratory. Indeed, in the material cultures of experimental practice, Agamben’s anthropological machine becomes most visible. Humane experimental technique, for all that it made the knowing human subject dependent on its relation to the nonhuman object of knowledge, nevertheless re-inscribed the human/nonhuman boundary by making ethics

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66 *Proposal for a Directive of the European Parliament and of the Council on the protection of animals used for scientific purposes* {SEC(2008) 2410} {SEC(2008) 2411} COM/2008/0543 final—COD 2008/0211 (2008), 3.

67 *Final Report of the Royal Commission on Vivisection cd. 614* (London: HMSO, 1912), 77. For Wilson’s views on animal experimentation see “The Vivisection Commission,” *British Medical Journal*, 20th October 1906 (ii): 1050–1051.

a human(e) practice. Without dismissing the fact that nonhuman forms of life within the laboratory are born to die and live exposed to death, *animalia sacer* need not be read as a thanatopolitics. Biopolitical models of power are, after all, creative. Through them life is subjected, used, but also improved and made to flourish. To the extent that this process can operate across species boundaries, traversing and remaking the human and nonhuman, there is, with a Foucaultian attention to the material cultures of the expressions of biopower in practice, always potential for this biopolitical space to be collaboratively remade. In 1984, toward the end of his own life, Foucault's position on the relationship between power and resistance was summarised by an interviewer in the following way:

Politically speaking, probably the most important part of looking at power is that according to previous conceptions "to resist" was simply to say no. Resistance was conceptualized only in terms of negation. Nevertheless, as you see it, resistance is not solely a negation but a creative process. To create and recreate, to transform the situation, to participate actively in the process, that is to resist.<sup>68</sup>

Responding, Foucault agreed:

Yes, that is the way I would put it. To say no is the minimum form of resistance. But of course, at times, that is very important. You have to say no as a decisive form of resistance.<sup>69</sup>

Can the laboratory animal resist? Even in the most unbalanced of power relations Foucault believed resistance to be possible as the weaker always "has the possibility of committing suicide". In relations of power there is always "the possibility of resistance, for if there were no possibility of resistance . . . there would be no relations of power".<sup>70</sup>

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68 Michel Foucault, "Sex, Power and the Politics of Identity," in *Ethics, Subjectivity and Truth: Essential Works of Foucault 1954–1984*, ed. Paul Rabinow (Harmondsworth: Penguin, 2000), 168.

69 Ibid.

70 Michel Foucault, "The ethic of care for the self as a practice of freedom," in *The Final Foucault*, ed. James Bernauer and David Rasmussen (Cambridge, MA: MIT Press, 1987), 1–20 (12). For an eloquent and incisive development of this point encountered after the writing of this chapter see Clark, "Labourers or lab tools?"

Resistance through death would be the extreme statement of “no” but also the minimum form of resistance because it is the least creative and productive. Without the laboratory there would be no laboratory animals. They exist because they are a product of specific and situated biopolitical models of power in which they do and must live. Arguably, for as long as the laboratory as a space continues it can be and should be altered to further the flourishing of the life to which it has given birth. Through more detailed analysis, perhaps we could work toward creating new models of power that give ever more opportunity to nonhuman animals to resist through creative participation in the material cultures and interspecies interactions of the laboratory. Together, we might thereby negate the nonhuman animal need for a politics of negation. Rather than saying “no”, we might find ways to allow nonhuman animals to say “no but”. There are few better toolkits for the analysis of how modern power and resistance interact creatively and positively than that provided by Foucault. By building on his work and extending it across species we can seek ways of choosing death together, not with resistance in mind, but with dignity. Creating a fresh politics for tomorrow as yet unrecognised today.

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