The Pen and the Scalpel: Literature and Vivisection, 1875-1912

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Declaration

I, Asha Hornsby, confirm that the work presented in this thesis is my own. Where information has been derived from other sources, I confirm that this has been indicated in the thesis.

Abstract

This thesis examines the representation of vivisection in England between the first and second Royal Commissions (1875-1912). It considers the portrayal of live animal experimentation in literature, visual culture, scientific writings, and the newspaper and periodical press. The antivivisection movement attracted support from a striking number of eminent and popular authors, poets, and playwrights, who attended meetings, signed petitions, contributed funds, and lent their pen to the cause. This thesis considers their involvement and assesses the nature and strategies of protest literature. However, vivisection also permeated the Victorian imagination and shaped contemporary literary culture in ways that the movement did not anticipate and could not control, offering writers formal and imaginative opportunities beyond a straightforward concern with animal welfare. Depicting animal pain posed unique representational challenges, as H. G. Wells in particular explored. The feelings of the vivisector, and his ability to both read and to be read, was another recurrent preoccupation of the period's literature, as illustrated in fiction by Marie Louise de la Ramée (better known as Ouida), Wilkie Collins, and the lesser-known novelists Edward Berdoe and Walter Hadwen. Moreover, contemporary physiological theories and practices relating to animal experimentation were used by both novelists and critics – including realists such as George Eliot and naturalists like Émile Zola and August Strindberg – to reflect on the nature of fiction-writing and to think through ideas concerning plot and character. 'The Pen and the Scalpel: Literature and Vivisection, 1875-1912' sheds light on the complex entanglement of art and science in the late-Victorian period and explores how the representational preoccupations opened up by vivisection debates often sat uneasily alongside a socio-political commitment to animal protection.

Impact Statement

This thesis is concerned with representations of vivisection in Victorian England and the relationship between experimental physiology and literary culture. It contributes to the study of nineteenth-century literature, history, and culture, and the burgeoning field of animal studies. By unearthing lesser known protest literature and examining the strategies of the antivivisection movement's press, it offers new contexts for culturally significant texts and provides fresh critical readings of works by popular authors such as Wilkie Collins, George Eliot, and H. G. Wells. Aspects of the research represented here have been discussed at UK-wide interdisciplinary academic conferences and network meetings. I have also written for Senate House Library's 'From the Reading Room' blog which introduces other researchers to archives there. Portions of Chapters 2 and 3 contributed to an article published in *Victorian Review* (vol. 45), an interdisciplinary journal of Victorian studies.

Aspects of my research have been informed by non-academic communities and contexts. My talk for Durham University's Late Summer Lecture Series (2017) attracted a local audience and was subsequently available as a podcast. In April 2019, I designed a free, public event with my colleague, Dr Alistair Robinson, which was shaped by our research. Funded by UCL's IAS, 'Laughing Gas: Science and Satire in Nineteenth-Century Medical Culture', included a lecture on the history of quackery by author and historian Caroline Rance interspersed with performances by the storyteller Matthew Crampton (see Fig. 1).

Figure 1. A. Hornsby, 26 April 2019, 'Laughing Gas: Science and Satire in Nineteenth-Century Medical Culture', The Old Operating Theatre, London.

The history and architecture of our venue, The Old Operating Theatre and Herb Garrett, Southwark, reflected the unequal power dynamic between surgeons and patients which satirists sought to overturn. Attendees participated in renditions of nineteenth-century comic songs (on topics ranging from body-snatching to hypochondria), sourced from the Wellcome Trust, London, to actively explore how the Victorian medical establishment was undermined. The event attracted medical professionals, researchers from the medical humanities, nineteenth-century culture, and musical theatre, as well as those with a general interest in the museum and the topic. Discussions during the event and the reception illuminated the complex relationship that still exists between patients and medical practitioners and researchers.

From the twentieth century, campaigns against animal testing discarded some of the rhetorical strategies employed by the first wave. Nonetheless, certain patterns of engagement persisted, and some antivivisection organisations founded in the Victorian period (e.g. NAVS and BUAV) remain active. In 1997, activists working undercover for the BUAV (now Cruelty Free International) obtained shocking footage from inside Huntington Life Sciences animal testing centre. Clips showing dogs being punched and taunted were aired by the Channel 4 documentary 'It's a Dog's Life', inflaming a notoriously violent campaign against laboratory personnel led by SHAC and ALF activists. Although the number of animals killed for medical science pales in comparison to those slaughtered for food, vivisection has remained a highly contentious animal welfare issue. A deeper understanding of the meanings attached to vivisection in Victorian Britain would place debates in perspective and allow charities, policy-makers, and other stakeholders to better appreciate the ideologies and anxieties that influence their perception.

Acknowledgements

First and foremost, sincerest thanks go to Dr Juliette Atkinson, my supervisor, whose academic support and guidance have proved indispensable, especially during brief moments when doctoral study seemed like a chore rather than a privilege. Thank you, Juliette, for your patience, encouragement, enthusiasm, and kindness. I am also indebted to my secondary supervisor Prof. Peter Swaab for providing fresh perspectives and suggesting new avenues for research.

I was fortunate to receive an AHRC studentship which allowed me to live and study in London and which opened doors to a range of opportunities. I hope that working as a LAHP Student Representative has helped ensure that fellow and future students can access similar benefits. UCL has proved an invigorating environment for this topic. In the nineteenth century it was a centre for physiology, a fact which I am reminded of each time I leave campus through an archway still marked 'Institute of Physiology' inside of which the iconic 'Brown Dog' was vivisected (see Fig. 2).

Figure 2. [UCL's Institute of Physiology], Picture Box 5, UCL Science Collection, UCL, London.

Attempts were made to breach these walls during the late-nineteenth and early-twentieth centuries. Whereas RSPCA inspectors turned up at the gates and requested to be shown the animals, some antivivisectionist activists infiltrated lectures by posing as genuine students. UCL's reputation as London's epicentre of animal research was unrivalled in the nineteenth and early-twentieth-century public imaginary too. After 1926, when one of its animal suppliers was found guilty of selling stolen puppies to laboratory technicians, the physiology department received a flood of enquiries from anxious pet-owners offering rewards for the safe return of their canine companions. By contrast, a few wrote with offers to sell their unwanted dogs.[1] One such proposal was politely refused since 'most of the workers are away from the laboratory for Xmas' and 'it would be hardly worth your while to send him here by rail'.[2] UCL remains an important centre for animal research; in 2018, 182,438 procedures were carried out using animals, none involving dogs.[3]

Countless friends have generously helped me during my doctoral studies. Within the graduate community, special thanks go to Drs Alistair Robinson and Harvey Wiltshire not only for their friendship but also for offering valuable feedback on my writing and ideas. I am also grateful for my family, and especially my sister Miriam, for being willing proof-readers, enthusiastic cheerleaders, and for shouldering my share of household chores without complaint during the final stretch. Finally, thanks to my parents, Peter and Bridget, who have always encouraged my studies and believed in my academic potential, yet whose love and support has never been contingent upon that belief being realised.

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[1] Beatrice Clarke, [Letter to "Sir" December 1926], London, National Archives, UCL Science Collection, Bayliss Papers, MS.ADD/273/D1-2.

[2] Ibid.

[3] [Animal Research Facts & Figures], <https://www.ucl.ac.uk/animal-research/facts-figures> [accessed 9 January 2020].

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Abbreviations

Key Organisations

AAMR	The Association for the Advancement of Medicine by Research
ADAVS	Animal Defence and Anti-Vivisection Society (formerly the Anti-Vivisection Council)
ALF	Animal Liberation Front
AVSS	The Anti-Vivisection Society of Sweden
BMA	British Medical Association
BUAV	British Union for the Abolition of Vivisection
CAVL	Church Anti-Vivisection League
CJA	Council of Justice for Animals
EDAFL	Enfield and District Anti-Vivisection League
HL	Humanitarian League
IATSV	International Association for the Total Suppression of Vivisection
IMAVA	International Medical Anti-Vivisection Association
IMC	International Medical Congress (1881)
LAVS	London Anti-Vivisection Society
NAVS	National Anti-Vivisection Society (previously the VSS)
ODFL	Our Dumb Friends League
PAVS	Pioneer Anti-Vivisection Society
RSPCA	Royal Society for the Prevention of Cruelty to Animals (previously the SPCA, it received royal assent in 1840)
SHAC	Stop Huntington Animal Cruelty
VSS	Society for the Protection of Animals liable to Vivisection; better known as the Victoria Street Society (became the NAVS in 1898)
WLAG	World League Against Vivisection
BAAS	British Association for the Advancement of Science
RCS	Royal College of Surgeons
RDS	Research Defence Society

Key Publications

BMJ	*British Medical Journal*
OED	*Oxford English Dictionary* (Oxford: OUP, 2011), www.oed.com

RRCV1 *Report of the Royal Commission on the Practice of Subjecting Live Animals to Experiments for Scientific Purposes; with Minutes of Evidence and Appendix* (London: 1875)

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Introduction

In the first of three *Scenes of Clerical Life* (1857), George Eliot imagined her 'miserable town-bred reader' as one holding 'a vague idea of a milch cow as probably a white-plaster animal standing in a butterman's window'.[1] Such condescension was unwarranted: Victorian urban dwellers were heavily exposed to the sight, smells, and sounds of animals.[2] Indeed, only three years later, Charles Dickens wrote of Smithfield cattle market, located in the heart of London, as a place 'asmear with filth and fat and blood and foam', having earlier confounded Oliver Twist with the 'thick steam, perpetually rising from the reeking bodies of the cattle', the pens 'filled with sheep', and the 'long lines of beasts and oxen, three or four deep' about which mingled 'countrymen, butchers, drovers, hawkers, boys, thieves, idlers, and vagabonds of every low grade'.[3] Exhausted animals could be seen flogged on the final leg of their journey to the market, such that even 'the well to do could not avoid witnessing the brutal treatment of draught animals and livestock'.[4] Nor were encounters with animals limited to the food chain. Menageries that had often been kept behind royal doors increasingly reached a wider audience. By the time Queen Victoria had arrived on the throne, George Wombell's Travelling Menagerie, founded in 1810, had expanded to include elephants, giraffes, lions and a gorilla; the London Zoo, which began in 1828 as a resource for scientists, opened to the general public in 1847 and three years later welcomed Obaysch, the first hippopotamus to visit England since the Roman Empire.[5] The amateur naturalist craze brought animals into the home as specimens, and the 1851 Great Exhibition fed the appetite for lifelike taxidermy – with creations as strange as those in Walter Potter's extraordinary collection. The lack of first-hand milking experience notwithstanding, encounters with animals were not reduced to the sanitised advertising displays in London shop windows.

Nineteenth-century animal protection legislation was predicated as much on the morally degrading effect of cruelty upon human perpetrators as it was upon the animal's rights and capacity

[1] George Eliot, 'The Sad Fortunes of the Reverend Amos Barton', in *The Clarendon Edition of the Novels of George Eliot: Scenes of Clerical Life,* ed. Thomas A. Noble, 2 vols (Oxford: Oxford UP, 1985), I, p.11.

[2] Laurence W. Mazzeno and Ronald D. Morrison, 'Introduction', in *Animals in Victorian Literature and Culture: Contexts for Criticism*, ed. Laurence W. Mazzeno and Ronald D. Morrison (London: Palgrave Macmillan, 2017), pp.1-20; Hannah Velten, *Beastly London: A History of Animals in the City* (London: Reaktion Books Ltd., 2013).

[3] Charles Dickens, *The Clarendon Dickens: Oliver Twist*, ed. Kathleen Tillotson (Oxford: Oxford UP, 1966), p.136; Charles Dickens, *The Clarendon Dickens: Great Expectations*, ed. Margaret Cardwell (Oxford: Oxford UP, 1993), p.163.

[4] A. W. H. Bates, *Anti-Vivisection and the Profession of Medicine in Britain, A Social History* (London: Palgrave Macmillan, 2017), p.16.

[5] Helen Cowie, *Exhibiting Animals in Nineteenth-Century Britain: Empathy, Education, Entertainment* (London: Palgrave, 2014); John Simons, *The Tiger that Swallowed the Boy: Exotic Animals in Victorian England* (Faringdon: Libri Publishing, 2012); Sarah Amato, *Beastly Possessions: Animals in Victorian Consumer Culture* (Toronto: University of Toronto Press, 2015), chapter 3.

for suffering. Early animal protection efforts primarily targeted visible cruelties taking place in city streets, such as bloodsports and ill-treatment resulting from the transportation, sale, and slaughter of livestock. In 1800, Sir William Pultney's bill against bull-baiting sought to stamp out a 'cruel and inhuman' practice which 'drew together idle and disorderly persons' and 'created many disorderly and mischievous proceedings'.[6] Opponents retorted that bull-baiting did not produce the evils ascribed to it. The more gentlemanly pastime of game shooting demonstrated that 'savage sports do not make savage people'.[7] The Secretary for War, describing bull-baiting as an 'athletic, manly and hardy' activity, urged the House of Commons not to 'deprive the poor of this country of the few sources of amusement which they enjoy'.[8] Pultney's motion was defeated, and five more bills were put forward and defeated until Richard Martin's successful 1822 bill to prevent 'the cruel and improper treatment of cattle' became Britain's first anti-cruelty law.[9] For a growing urban bourgeoisie still unsettled by the French Revolution, a desensitised working class inured to animal suffering might become ungovernable and more easily turn against their fellow man.

Vivisection was not a prominent concern of the earliest animal welfare societies, and it remained somewhat an anomaly within the broader landscape of nineteenth-century animal protectionism. The Society for the Prevention of Cruelty to Animals (SPCA) briefly acknowledged vivisection as an abuse in its founding statement of 1824, and 'scientific cruelty' occasionally featured in articles and pamphlets, but the issue was not at the forefront of any campaigns.[10] Throughout the nineteenth century many accepted animal experiments so long as they were governed by 'a true sense of scientific inquiry', and not undertaken wantonly.[11] Concerns about the practice were easy to dismiss: as the movement's critics frequently pointed out, the animals sacrificed for science were far outnumbered by those used for food and clothing and, indeed, most antivivisectionists did not themselves shrink from eating meat and wearing leather or fur. Or, as put by the scientific journal *Nature* in 1881, '[m]ore pain is caused by the whip of a London cab driver in one day than is inflicted in any physiological laboratory in this country in a course of weeks'.[12]

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[6] [Unsigned], 'House of Commons, 2 April 1800', *The Parliamentary Register; or History of the Proceedings and Debates of the Houses of Lords and Commons* (London: [n.pub], 1800), pp.173-77 (p.173).
[7] [Unsigned], 'House of Commons, 18 April 1800', *The Parliamentary Register*, pp.326-47 (p.236, p.239).
[8] Ibid., pp.236-37.
[9] In 1835 it was expanded to cover all domestic animals.
[10] Anthony Broome, *SPCA Founding Statement* (London: Whiteside and Fenn, 1824); A. W. H. Bates, 'Vivisection, Virtue Ethics, and the Law in 19th Century Britain', *Journal of Animal Ethics*, 4.2 (2014), 30-44 (p.32); Nicolaas Rupke, 'Introduction', in *Vivisection in Historical Perspective*, ed. Nicholaas Rupke (London: Routledge, 1987), pp.1-13 (p.5).
[11] Theodore G. Obenchain, *The Victorian Vivisection Debate: Frances Power Cobbe, Experimental Science and the 'Claims of Brutes'* (London: McFarland & Co., 2012), p.34.
[12] [Unsigned], 'Vivisection and Medicine', *Nature*, 11 August 1881, pp.329-32 (p.331).

At the same time, 'scientific cruelty' raised unusually powerful ethical questions and provoked strong feelings that were absent from responses to other areas of animal mistreatment. As A. W. H. Bates summarises, vivisection 'had implications beyond animal welfare: for the way society made ethical choices, for how science should be conducted, and for how humans saw themselves in relation to the rest of creation'.[13] It undermined supposedly unshakeable moral truths and core national values. For instance, figured as devoted servant-companions with a special moral nature, dogs' enduring faithfulness was widely celebrated in British culture. The fact that 'even when tortured, [dogs] do not betray by a snap or bite that "fellow feeling" which both binds them in companionship to man and makes them "easy" victims', only compounded the treachery of vivisection.[14] The canine character remained steadfast – compliant, trusting, and loyal – even as the physiologist's 'humanity' was increasingly in doubt.

Vivisection was unlike other animal (ab)uses for four main reasons: it was rarely carried out in public places; it was typically practiced by a demographic not usually suspected of savagery (educated, professional, middle- and upper-class men); it was executed in a calm and calculated manner; and it was practised for the purpose of increasing 'useful' (a slippery qualification) physiological knowledge. The first factor held important consequences for the movement which fought the practice. When animal abuse occurred openly in the streets, the disturbance caused might prompt a concerned passer-by or even an RSPCA constable to intervene. Since vivisection could not capture public attention in this manner, opponents needed to bring powerfully imagined scenes before the mind's eye; they had to enable those who had never seen vivisection to visualise it. Activists used various strategies to represent the cruel 'reality' of animal experimentation, and the fluctuation of their discourse between publicity and privacy, secrecy and disclosure, allowed a profusion of meanings to attach onto vivisection. Most Victorian antivivisectionists would never see the inside of a laboratory, let alone a demonstration of vivisection. Unable, and, sometimes unwilling, to penetrate laboratory walls, they relied instead on piecing together a picture of what was going on inside. For instance, in 1864, a campaign led by a group of British expatriates in Florence against the German physiologist Moritz Schiff was launched after neighbours complained about the nocturnal howls emanating from his laboratory.[15] More commonly, however, antivivisectionists relied on scientists' own accounts of the practice.

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[13] Bates, *Anti-Vivisection and the Profession of Medicine*, p.14.

[14] Susan Hamilton, '"Still Lives": Gender and the Literature of the Victorian Vivisection Controversy', *Victorian Review*, 17.2 (1991), 21-32 (p.22).

[15] Obenchain, *The Victorian Vivisection Debate*, pp.24-25; Patrizia Guarnieri, 'Moritz Schiff (1823–96): Experimental Physiology and Noble Sentiment in Florence', in *Vivisection in Historical Perspective*, ed. Nicholaas Rupke (London: Routledge, 1987), pp.105-24.

As well as being shut out from actual scenes of vivisection, ordinary citizens were increasingly denied access to scientific bodies of knowledge. The 'scientific laboratory method' which began to be articulated and theorised in the latter half of the nineteenth century further excluded laypersons from 'the new physiology', a term used to describe the scientific study of the normal functioning of living organisms by means of experiment, including vivisection. Microscopes gave researchers privileged powers of vision while new graphic recording technologies provided mechanical means of accessing and recording physiological data. By slicing open animal bodies and using special equipment to extract nature's secrets, vivisectors gained unparalleled access to living interiors. On the basis of biological contiguity born by 'a Darwinian cosmology whereby advanced physiological understanding of animals would illuminate the physiological understanding of man', their insights were not limited to non-human beings.[16] Regardless of differences in mass, appearance, and so forth, different animal and human interiors looked and functioned similarly, such that experimental physiologists could see a fellow citizen's body in a manner which was alien even to the individual to which it belonged.[17] No wonder experimental science was, as Phillip Howell puts it, 'alienating and distinctly *unheimlich* […] to the Victorian public'.[18] Vivisection made otherwise familiar objects or beings – even oneself – appear somewhat strange.

The peculiar combination of invisibility and hypervisibility surrounding vivisection and its representation lies at the heart of this thesis. Interdisciplinary animal studies have flourished since Donna Haraway's *Primate Visions: Gender, Race, and Nature in the World of Modern Science* (1989).[19] Echoing the manner in which early nineteenth-century animal welfare debates offered a means to express broader social anxieties, scholars have fruitfully explored how animal experimentation became a vehicle for contemporary preoccupations with sexuality, gender, race, class and empire.[20] 'The Pen and the Scalpel: Literature and Vivisection, 1875-1912', however, is interested in the literary challenges and opportunities offered by the depiction of a scientific practice which strained

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[16] Rob Boddice, *The Science of Sympathy: Morality, Evolution, and Victorian Civilisation* (Chicago: University of Illinois Press, 2016), p.53.

[17] For example, this is apparent in the cross-examination of Professor Ernest Starling regarding the position of the pancreas during Bayliss v. Coleridge. See [Unsigned], 'Bayliss v. Coleridge (Continued), *BMJ*, 2.2238, 21 November 1903, pp.1361-71 (p.1363).

[18] Phillip Howell, *At Home and Astray: The Domestic Dog in Victorian Britain* (Virginia: University of Virginia Press, 2015), p.102.

[19] Donna Haraway, *Primate Visions: Gender, Race, and Nature in the World of Modern Science* (London: Routledge, 1989); Karen L. Edwards, Derek Ryan and Jane Spencer, 'Introduction', in *Reading Literary Animals, Medieval to Modern*, ed. Karen L. Edwards, Derek Ryan and Jane Spencer (London: Routledge, 2020), pp.1-10 (pp.3-4).

[20] David Agruss, 'Victorian experimental physiology and the empire of bodily interiors: vivisection, sexuality, imperialism', *Prose Studies*, 35.3 (2013), pp.263-83; Coral Lansbury, *The Old Brown Dog: Women, Workers and Vivisection in Victorian and Edwardian England* (Madison, Wisconsin: Wisconsin UP, 1985); Harriet Ritvo, *The Animal Estate: The English and Other Creatures in the Victorian Age* (Cambridge, MA: Harvard UP); Mary Midgley, *Animals and Why They Matter* (Athens, Georgia: University of Georgia Press, 1983).

the very boundaries of representation. In a period dominated by literary realism – by George Eliot's injunction that readers '[o]bserve a company of haymakers', say – the literature of vivisection was preoccupied with what, for many, lay beyond the empirical: the vivisector worked in the shadows, his feelings and motivations were inscrutable, his victims could not testify, and indeed the language of vivisection itself readily slipped from the literal to the metaphorical. Moreover, by virtue of the fact that live animal experimentation was presented as a mental operation as much as a manual one, 'vivisection' became used to navigate topics of particular interest in late-Victorian literary culture, including the uneasy ground between self and subject, creation and mutilation, and detachment and absorption. To represent vivisection was to be caught in a paradox because a practice deployed for the purposes of scientific empiricism itself evaded precise scrutiny. As such, the late-nineteenth and early twentieth-century literature of vivisection was caught up not only in social debates but also in aesthetic and linguistic ones.

Animal Experimentation and Humanitarian Sentiment: a brief history

An overview of the development of animal experimentation and opposition to it may offer a helpful starting point. 1876 is the key milestone, marking the Cruelty to Animals Act – also widely known as the Vivisection Act and, in antivivisection circles, as 'The Vivisector's Charter' – which restricted animal experiments to licensed persons and premises. Hitherto, vivisection had been unregulated. Since no official statistics were kept, and some experiments, especially fruitless ones, would have gone unrecorded, it is difficult to ascertain the extent of the practice. Scholars have generally accepted Richard French's assessment that vivisection has a long but sporadic history and its practice was 'extremely slight until the late nineteenth century' when it was presented as a new and pressing issue.[21] Growing Christian concerns, as David Clough suggests, may have prompted the decline in the practice until the sixteenth century, when some Paduan anatomists started experimenting with live dogs, and the seventeenth century, when it 'became a routine procedure' in Europe.[22] The anatomist-physiologists of the sixteenth and seventeenth centuries were influenced by the writings of Galen of Pergamum, a Roman physician who argued that vivisection alone could reveal the function of the body's internal structure.[23] It was to refute Galen's understanding of blood circulation that the Englishman William Harvey vivisected a

[21] Richard French, *Antivivisection and Medical Science in Victorian Society* (Princeton NJ: Princeton UP, 1975), p.37.
[22] David L. Clough, *On Animals, Volume II, Theological Ethics* (London: T. & T. Clark, 2018), 138; Joseph Schiller, 'Claude Bernard and Vivisection', *Journal of the History of Medicine*, 22 (1967), 246-60 (p.247).
[23] R. Allen Shotwell, 'The Revival of Vivisection in the Sixteenth Century, *Journal of the History of Biology*, 46.2 (2012), 171-97.

number of dogs and horses.[24] Harvey's work was widely reported and his book, *Exercitatio anatomica de motu cordis et sanguinis in animalibus* [*An Anatomical Exercise Concerning the Motion of the Heart and Blood in Animals*, 1628], 'stimulated a spate of animal experiment'.[25] It is hard to determine how the animal experimenters of the 1660s and '70s felt about the pain they caused.[26] It is telling, however, that Restoration writers of 'virtuoso-satire' like Samuel Butler and Thomas Shadwell mocked vivisection on the grounds of it being foolish and absurd rather than cruel.[27] Pressure for the humane treatment of animals increased markedly in the eighteenth century, when opposition to vivisection also became more sustained.[28]

In the early decades of the eighteenth century, the scientist, inventor, and clergyman Rev. Stephen Hales investigated the behaviour of bodily fluids. His blood pressure experiments involved inserting tubes into the arteries of different animals and measuring the height to which the column rose. While a good-humoured twentieth-century sketch of the Reverend conducting this experiment disregards the horse's discomfort, or indeed pain (see Fig. 3), Hales's contemporaries – and writers in particular – were alarmed.

Figure 3. 'Stephen Hales's Experiment', Drawing on board, Unsigned, c. early-mid twentieth century, Picture Box 4, UCL Science Collection, UCL, London.

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[24] Andrew Cunningham, *The Anatomist Anatomis'd: An Experimental Discipline in Enlightenment Europe* (Farnham: Ashgate, 2010), p.295.

[25] French, *Antivivisection and Medical Science*, p.16.

[26] See Wallace Shugg, 'Humanitarian Attitudes in the Early Animal Experiments of the Royal Society', *Annals of Science*, 24 (1968), 227-328; Dix Harwood, *Love for Animals and how it Developed in Great Britain* (New York: Edwin Mellen Press, 1928), pp.78-81, pp.98-114.

[27] Andreas-Holger Maehle, 'Literary Responses to Animal Experimentation in Seventeenth- and Eighteenth-Century Britain', *Medical History*, 34 (1990), 27-51; Samuel Butler, 'An occasional reflection on Dr Charlton's feeling a dog's pulse at Gresham-College. By R. B. Esq to Lyndamore', in *The genuine remains in verse and prose of Mr Samuel Butler*, ed. R. Thyer, 2 vols (London: J. & R. Tonson, 1759), I, 404-5; Thomas Shadwell, *The virtuoso*, ed. Marjorie Hope and David Stuart Rhodes (London: Edward Arnold, 1966), pp.47-48.

[28] See Henry Salt, *Animals' Rights Considered in Relation to Social Progress* (London, 1894), pp.105-32; D. DeLevie, *The Modern Idea of the Prevention of Cruelty to Animals and its Reflection in English Poetry* (New York: F. Vanni, 1947); R. S. Crane, 'Suggestions toward a Genealogy of the "Man of Feeling", *English Literary History*, 1 (1934), 205-30.

Alexander Pope, Hales's neighbour, remarked that the Reverend was 'a very good man' but that he was 'sorry he has his hand so imbued with blood'.[29] 'He commits most of these barbarities', Pope explained to another friend, 'with the thought of being of use to man. But how do we know that we have a right to kill creatures that we are so little above as dogs, for our curiosity?'[30] Pope's solemn consideration of the morality and utility of vivisection foreshadows the nineteenth-century discourse while Samuel Johnson's denunciation of Hales in August 1758 anticipated the fiercer rhetoric that flourished in particular circles during the following century. He remarked that, '[a]mong the inferior professors of medical knowledge is a race of wretches, whose lives are only varied by varieties of cruelty', and continues:

> What is alleged in defence of these hateful practices everyone knows, but the truth is, that by knives, fire, and poison, knowledge is not always sought and is very seldom attained. The experiments that have been tried are tried again […] I know not that by living dissections any discovery has been made by which a single malady is more easily cured. And if knowledge of physiology has been somewhat increased, he surely buys knowledge dear, who learns the use of the lacteals at the expense of his humanity. It is time that universal resentment should arise against these horrid operations, which tend to harden the heart, extinguish those sensation which give man confidence in man, and make physicians more dreadful than gout or stone.[31]

As well as foreshadowing the movement's impassioned style of engagement, Johnson touches on key tenets of the Victorian argument: the foolishness of undertaking immoral and harmful acts in the hope of producing an uncertain future good, the uselessness of experimentation as a scientific method, and the terrible impact of cruelty on the humanity of the experimenter. This final point, that a vivisector 'learns the use of the lacteals at the expense of his humanity', could have come straight out of Victorian propaganda.[32] Indeed, both Pope and Johnson's critiques of vivisection were reprinted in nineteenth-century advocacy periodicals.[33] French writes that, at this time, antivivisection sentiment remained 'largely confined to scattered literati and the occasional humanitarian pamphleteer'.[34] Although perhaps an understatement, certainly the wider public had yet to become involved, and scientists had little backlash to fear. As Macdonald Daly comments,

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[29] Joseph Spence, *Anecdotes, Observations, and Characters* (London: J. R. Smith, 1858), p.222.
[30] Ibid.
[31] Samuel Johnson, 'Expedients of Idlers', in *The Idler in Two Volumes*, 2 vols (1758; London, [n.pub], 1761), I, 92-96 (p.96).
[32] Johnson may have had the Italian physician Gaspare Aselli who discovered the so-called lacteal veins in the 1620s in mind here. See Anita Guerrini, 'Experiments, Causation and the Uses of Vivisection in the First Half of the Seventeenth Century', *Journal of the History of Biology*, 46.2 (2012), 227-54; James A. Steintrager, *Cruel Delight: Enlightenment Culture and the Inhuman* (Bloomington: Indiana UP, 2004), p.69.
[33] See for example [Unsigned], 'The Cruelty involved in excessive game preserving', *Home Chronicler*, 4.87 (16 February 1878), 97-112; G. F. Goddard, 'A Judgement upon Vivisection from Moralists, Philosophers, and Divines'[Letter to the Editor], *Anti-Vivisectionist*, 7.177 (31 January 1880), 67-8; [Unsigned], 'Samuel Johnson', *Zoophilist*, 3.17, 1 April 1884, 288.
[34] French, *Antivivisection and Medical Science*, p.17.

the explicit and unguarded way in which Hales described his experiments indicates just how little he anticipated any opposition.[35] The 'universal resentment' against vivisection called for by Johnson had yet to arise.

During the first half of the nineteenth century, the 'trickle' of late eighteenth-century animal protection literature became a 'flood'.[36] Animal husbandry and bloodsports were far more regularly rebuked than vivisection, which remained 'proverbially rare'.[37] While French and German institutions embraced vivisection as the new physiology's *modus operandi*, British universities still relied on morbid anatomy (i.e. cadaveric dissection).[38] Some British researchers, however, began to resent the 'peculiar disadvantages' under which they laboured at home.[39] According to one anonymous commentator, a 'feeling of repugnance to vivisections' and also 'tender feelings touching the sufferings of animals, embodied in acts of Parliament and incorporated in societies for the prevention of cruelty to animals' rendered the nation 'quite *hors de combat* respecting these physiological "*nouveautes*"' that were issued from the Parisian press.[40] Indeed, Rob Boddice proposes that it was 'a peculiarly British tendency to engage public interest in, or even assign jurisdiction over, the scientific world'.[41] Throughout the nineteenth century, vivisection was figured as 'suspiciously continental' in the popular imagination.[42] Much to the irritation of those scientists who claimed that Englishmen worked more prudently, the movement successfully capitalised on the 'foreignness' of vivisection, while also presenting vivisectors as part of a homogenous community.[43]

Some ambitious British scientists pursued their physiological education in France and, occasionally, French physiologists travelled to Britain to demonstrate their methods and disseminate their findings. In 1824, a Parisian professor of physiology and medicine called François Magendie caused 'a violent clamour' and 'excited a strong sensation' by performing a series of vivisections in London upon live dogs.[44] The MP Richard Martin ('Humanity Dick'), emboldened

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[35] Macdonald Daly, 'Vivisection in Eighteenth-Century Britain', *British Journal for Eighteenth-Century Studies*, 12 (1989), 57-68 (p.57).
[36] French, *Antivivisection and Medical Science*, pp.23-24.
[37] Coral Lansbury, 'Gynaecology, Pornography, and the Anti-Vivisection Movement', *Victorian Studies*, 28.3 (1895), 413-37 (p.414); George F. Etherington, *Vivisection Investigated and Vindicated* (Edinburgh: P. Richard, 1842), p.17.
[38] Paul Eliot, 'Vivisection and the Emergence of Experimental Physiology in 19th Century France', in *Vivisection in Historical Perspective*, ed. Nicholaas Rupke (London: Routledge, 1987), pp.48-77.
[39] [Anon.], *The Salivary glands and pancreas, Their physiological Actions and Uses in Digestion: Being a Review of the Doctrines Taught by M. Claude Bernard* (Glasgow: [n.pub], 1858), p.1.
[40] [Anon.], *The Salivary glands and pancreas*, pp.1-2. A university structure in Britain that was resistant to change was also responsible, as well as moral and religious convictions. The 'acts of Parliament' referred to here are probably the 1822 'Act to Prevent the Cruel and Improper Treatment of Cattle' and the 1835 'Cruelty to Animals Act' which expanded the existing legislation to cover more species.
[41] Boddice, *The Science of Sympathy*, p.84.
[42] Christopher Pittard, *Purity and Contamination in Late Victorian Detective Fiction* (Ashgate: Farnham, 2011), pp.161-62.
[43] Bates, *Anti-Vivisection and the Profession of Medicine*, p.25.
[44] [Unsigned], 'Dissection of the Living', *London Medical Gazette*, 3 (18 April 1829), 644-45 (p.644).

by the success of his 1822 Act, once more sprang into action, using the uproar to raise the issue of animal experiments in Parliament. Anti-Gallic feeling deepened further still in the 1850s when reports of gruesome investigations performed upon living horses in French veterinary schools shocked the British reading public and were roundly condemned by the lay and medical press. In 1861, an RSPCA delegation urged Emperor Napoleon III to prohibit such procedures which were performed to increase the operator's manual dexterity. Further attempts to influence the scientific practices of other nations swiftly followed. The previously mentioned crusade against Schiff who, according to his opponents, 'did not scruple to make Florence ring with the screams of his living subjects', was spearheaded by the soon-to-be leader of British antivivisectionism: Frances Power Cobbe. A prolific journalist, theologian, and social reformer, she exploited her position as Italian correspondent for the *London Daily News* to draw attention to the issue back home.

In the summer of 1874, an incident involving another French vivisector led to a high-profile trial. Éugène Magnan was invited to give a lecture-demonstration at the annual meeting of the British Medical Association (BMA) in Norwich. When he injected dogs with absinthe to show that alcohol caused seizures, commotion broke out as certain members of the audience objected to the demonstration. The President of the Royal College of Surgeons (RCS) in Ireland even cut one of the dog's restraints in an effort to halt proceedings, which were eventually terminated when two county magistrates were fetched.[45] The RSPCA charged Magnan under the Martin's Act. Although the litigation narrowly failed (Magnan fled the country, and the meeting's organisers were cleared of wrongdoing), the Frenchman was found morally guilty in the court of public opinion.[46] The 'Norwich Affair', as it became known, kept the issue of vivisection alive in the public consciousness. Most importantly, it indicated a strain of continental callousness in British medicine and suggested that the Martin's Act might be ill-equipped to curtail scientific cruelty. With xenophobic feelings sufficiently inflamed and amid concerns about protecting the moral character of British scientists, the stage was set for the antivivisection movement.

1875: the birth of a movement

The 'Norwich Affair' prompted Cobbe to make her move. She produced a memorial calling upon the RSPCA to investigate the nature and scope of British vivisection and to draft legislation to protect the interests of experimental animals. Eminent men and women including literary figures, members of the church, the military, the aristocracy, and the House of Commons contributed their

[45] [Unsigned], 'Prosecution at Norwich. Experiments on Animals', *BMJ*, 2.728 (12 December 1874), 751-54 (p.751).
[46] Ibid.

signature. As the RSPCA dragged its feet, an unexpected event roused public indignation to such a pitch that the power and wealth of that society was no longer necessary to provoke agitation. A retired naval surgeon named George Hoggan produced a striking first-hand account of his experience as an assistant in a Parisian laboratory.[47] Although Hoggan did not mention Claude Bernard by name, it was widely (and correctly) believed that his description of working under 'one of the greatest living experimental physiologists' referred to the 'father' of French physiology.[48] His letter to the editor of the *Morning Post*, published on 2 February 1875, was reprinted in the *Spectator* four days later and widely quoted elsewhere. Still regarded as the most impactful piece of medical testimony against vivisection, it contained 'familiar features of later anti-vivisectionist literature', including 'pathetic and appealing experimental subjects, cynical and indifferent physiologists, ghastly laboratory details, [and] inefficacious anaesthetics'.[49] Hoggan claimed that once dogs realised their fate,

> [t]hey would make friendly advances to each of the three or four persons present, and as far as eyes, ears, and tail could make a mute appeal for mercy eloquent, they tried it in vain. Even when roughly grasped and thrown on the torture-trough, a low complaining whine at such treatment would be all the protest made, and they would continue to lick the hand which bound them till their mouths were fixed in the gage, and they could only flap their tail in the trough as their last means of exciting compassion.[50]

Once a professor finished using a particular animal, he would pass the mangled creature to his assistants 'to practise the finding of arteries, nerves, &c., [...] in other words, repeating those which are recommended in laboratory handbooks'.[51] As a pro-vivisection memorandum produced by British physiologists regretfully noted, Hoggan's letter 'materially contributed to the excitement of public feeling'.[52]

Despite complaints that foreign researchers had once again tarnished the reputation of harmless English scientists, signs of a greater alignment between British and continental methods and attitudes had been steadily accumulating prior to Hoggan's attack.[53] French physiology books found a market across the Channel, and Bernard's landmark work, *Introduction à l'étude de la médecine expérimentale* [*An Introduction to the Study of Experimental Medicine*, 1865] had a pronounced impact on the nascent British school.[54] Bernard eloquently made the case that the 'experimental method'

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[47] French, *Antivivisection and Medical Science*, p.67.
[48] George Hoggan, 'Vivisection' [reprinted letter], *Spectator*, 48.2432 (6 February 1875), 177-78 (p.177).
[49] French, *Antivivisection and Medical Science*, p.68.
[50] Hoggan, 'Vivisection', p.177.
[51] Ibid.
[52] [Anon.], 'Memorandum of Facts and Considerations Relating to the "Cruelty to Animals Bill" by Teachers of Physiology in England, Scotland, and Wales', pp.1-6 (p.1). London, Wellcome, SA/RDS/A/3/ Box 1.
[53] Ibid.
[54] Deborah Rudacille, *The Scalpel and the Butterfly: The Conflict between Animal Research and Animal Protection* (Berkley: University of California Press, 2001), p.18; Claude Bernard, *An Introduction to the Study of Experimental Medicine*, trans. Henry Copley Green (New York: Dover, 1957).

would make clinical medicine scientific, and, three years later, the first practical handbook in the English language appeared. Co-authored by four leading physiologists – Sir John Burdon-Sanderson, Michael Foster, Emmanuel Klein, and Sir Thomas Lauder Brunton – the *Handbook for the Physiological Laboratory* (1873) 'embodied the vivisectional methodology of what was to Britain a new physiology' based on the continental style.[55] Written 'for beginners in physiological works', it made no reference to administering anaesthesia.[56] The second volume contained over three hundred illustrations of microscopic views, laboratory machinery, and animal experiments which corresponded to the written descriptions in volume one, and some of which were copied from Bernard's works. Whereas French physiologists usually returned home when British public opinion turned against them, the *Handbook* suggested that the insidious attitude and infamous methods they imported had taken root in English soil. Though few copies of the *Handbook* were sold, the *Saturday Review* attributed the genesis of 'strong feeling on the subject [vivisection]' to its publication, and the work had a disproportionate impact on physiology's public image.[57]

The time felt ripe for a parliamentary campaign. Cobbe and Hoggan drafted a proposal to regulate vivisection which Lord Henniker presented to the House of Lords on 4 May 1875. Meanwhile, another group led by Charles Darwin, Thomas Henry Huxley, and Burdon-Sanderson hurriedly produced a petition and a bill that protected scientists' interests to be simultaneously presented by Lyon Playfair and Lord Cardwell in the Commons and the Lords. Despite pressure from Queen Victoria, the Home Secretary Richard Cross refused to act on either bill and instead, on 24 May, appointed a Royal Commission of Enquiry (chaired by Cardwell).[58] The proceedings received significant press coverage and commissioners recommended that animal experiments should be regulated by law. Their summary report noted that physiology was 'now for the first time assuming the position of a separate science' and correctly predicted that,

> physiological investigations will more and more take place in connection with public institutions, that new chairs will from time to time be founded, and that an organised system of instruction in physiology will speedily become an important feature of scientific education.[59]

By 1900, the picture had changed entirely: 'English physiology was transformed from a subsidiary branch of anatomy to an experimental school of international reputation'.[60]

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[55] French, *Antivivisection and Medical Science*, p.48.
[56] John Burdon-Sanderson (ed.), et al., *Handbook for the Physiological Laboratory* (London: J. & A. Churchill, 1873), p.vii.
[57] Stewart Richards, 'Vicarious Suffering, Necessary Pain: Physiological Method in Late Nineteenth-century Britain', in *Vivisection in Historical Perspective*, ed. Nicholaas Rupke (London: Routledge, 1987), pp.125-48 (p.133); [Unsigned], 'The Cruelty to Animals Bill', *Saturday Review,* 41.1077 (17 June 1876), 733.
[58] Obenchain, *The Victorian Vivisection Debate*, p.82.
[59] *RRCV1*, pp.viii.
[60] Stewart Richards, 'Drawing the life-blood of physiology: Vivisection and the Physiologists' dilemma, 1870-1900', *Annals of Science*, 43.1 (1986), 27-56 (p.27).

Various 'beginnings' have been suggested for the Victorian vivisection controversy. Bates selects Magendie's 1824 experiment as 'the start of the organised antivivisection movement', while French chooses 1870 as the year when physiological education became securely institutionalised in the ways that the Commission envisioned.[61] According to Susan Hamilton, the official beginning occurred a little later: either in 1873 with the publication of Burdon-Sanderson's *Handbook*, or in 1875 with the publication of Hoggan's letter.[62] 1875 also saw Cobbe form the first and probably most influential antivivisection society: The Victoria Street Society for the Protection of Animals Liable to Vivisection (henceforth the VSS). The first Royal Commission (1875) marks the starting point for this thesis. Publications such as the *Home Chronicler*, an independent antivivisection periodical founded in June 1876, harnessed the momentum it created to exert continued pressure on Parliament. Shortly before the passing of the 1876 Act, while the commissioner's recommendations were being discussed, as well as soon after, societies devoted exclusively to antivivisectionism sprang up in quick succession, most notably the London Anti-Vivisection Society (LAVS) and the International Association for the Total Suppression of Vivisection (IATSV). The final legislation dissatisfied anti- and pro-vivisectionists alike, and in so doing galvanised further action.

Resentment towards state intrusion and concern about coalescing antivivisection forces 'awakened a sense of *esprit de corps* among the small band of British physiologists'.[63] Lauder Brunton, one of the *Handbook*'s authors, made extensive amendments to a copy of the 1876 Act. His repeated over-scoring and considerable editing indicates the offence taken by many British physiologists to having their character questioned and their research curtailed by the state.[64] Tellingly, Brunton rejected the legislation's fundamental premise: he crossed out 'Cruelty' from the Act's title and substituted the more neutral word, 'Experiments'.[65] The Physiology Society of Great Britain, the first of its kind in Europe, was founded in the summer of 1876.[66] In 1881, the Society used the prestigious International Medical Congress (IMC), the largest assembly of medical men to date, to establish consensus that live experimentation was essential to medical progress.[67] This was a shrewd and timely move since one of the delegates, a Scottish neurologist named David

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[61] Bates, *Anti-Vivisection and the Profession of Medicine*, pp.16-17; French, *Antivivisection and Medical Science*, pp.41-42.
[62] Hamilton, 'Still Lives', p.21; Susan Hamilton (ed.), *Animal Welfare & Anti-Vivisection 1870-1910: Nineteenth-Century Woman's Mission*, 3 vols (London: Routledge, 2004), I, lxi.
[63] Gerald Geison, *Michael Foster and the Cambridge School of Physiology* (Princeton: Princeton UP, 1978), p.19.
[64] See also [Unsigned], 'Mr Coleridge on Tour', *BMJ*, 1.2364 (21 April 1906), 939-40.
[65] [Anon.], 'Cruelty to Animals, A Bill Intituled. An Act to prevent cruel Experiments on Animals', pp.1-7 (p.1). London, Wellcome, SA/RDS/A/3 Box 1.
[66] Norm Phelps, *The Longest Struggle: Animal Advocacy from Pythagoras to PETA* (New York: Lantern Books, 2007), p.141.
[67] Boddice, *The Science of Sympathy*, p.89; Dan Lyons, *The Politics of Animal Experimentation* (New York: Palgrave Macmillan, 2013), p.161, p.159; [Unsigned], 'The International Medical Congress', *The Times*, 30264 (4 August 188), 11.

Ferrier, would soon be charged under the new Act. The VSS accused Ferrier of vivisecting monkeys at the IMC without the necessary license, but he narrowly escaped prosecution since, contrary to published accounts, his (licensed) colleague Gerald Yeo had actually stepped in at the critical moments. Ferrier's narrow acquittal had simultaneous but opposing effects. To antivivisectionists, it undermined faith in the efficacy of the 1876 Act, and created a permanent rift in their ranks over whether to pursue a policy of restriction or abolition.[68] Cobbe eventually resigned from the VSS over the issue in 1898, and founded the British Union for the Abolition of Vivisection (BUAV); Stephen Coleridge took over the presidency of the VSS, which became the National Anti-Vivisection Society (NAVS). The antivivisection societies founded from 1875 onwards would join, splinter, and re-brand themselves over the next few decades. For pro-vivisectionists, the trial case galvanised a co-ordinated defence of scientists' interests.[69] In 1882, profits generated from the IMC were used to establish the Association for the Advancement of Medicine by Research (AAMR). This organisation aimed to ease restrictions upon animal research through public propaganda and private lobbying of policy-makers such as the Home Secretary who quietly accepted their advice on the provision of licenses.[70] The pro-vivisection faction took slightly longer to close ranks and was less wealthy, but unanimity made it powerful: leaders of the entire bio-medical establishment defended experimental physiology.[71]

In addition to initiating legislation and catalysing mobilisation, the Commission's proceedings and the *Report*'s recommendations shaped the debates in less tangible ways.[72] Some of the indelicate accounts of experimentation it elicited were circulated by the movement for decades thereafter. As the field of physiology and pressure groups against it organised and professionalised, the space for 'unscripted exchange' between scientists, animal protection parties, the public, and the state contracted considerably.[73] Experimental scientists articulated themselves more guardedly and avoided general readerships by disseminating their research within associations, universities, and specialised journals.[74] By regularly analysing, reframing, and recirculating scientific and governmental materials that were cumbersome, dense, or difficult to procure, the antivivisection movement ensured that lay voices punctuated conversations about animal research. The

[68] Obenchain, *The Victorian Vivisection Debate*, p.93.
[69] Nicholaas Rupke, 'Pro-vivisection in England in the Early 1880s: Arguments and Motives', in *Vivisection in Historical Perspective*, ed. Nicholaas Rupke (London: Routledge, 1987), pp.188-213 (p.188); French, *Antivivisection and Medical Science*, p.203.
[70] Lyons, *The Politics of Animal Experimentation*, p.162.
[71] Obenchain, *The Victorian Vivisection Debate*, p.94.
[72] See Asha Hornsby, 'Unfeeling Brutes? The 1875 Royal Commission on Vivisection and the Science of Suffering', *Victorian Review*, 45.1 (2019), 97-115.
[73] Oz Frankel, *States of Inquiry: Social Investigations and Print Culture in Nineteenth-Century Britain and the United States* (Baltimore: John Hopkins UP, 2006), p.305.
[74] Susan Hamilton, 'Reading and the Popular Critique of Science in the Victorian Anti-Vivisection Press: Frances Power Cobbe's Writing for the Victoria Street Society', *Victorian Review*, 36.2 (2010), 66-79 (p.70).

Commission's concerted efforts to assess the nature, value, and extent of British experimental physiology generated complex and competing ideas about the limits of interspecies perception and affect that had far-reaching consequences within and beyond the laboratory. Hence, the *Report* was often used to make space for non-scientific understandings of human-animal relations and interspecies ethics. As such, it represents a unique source for historians of nineteenth-century science and emotions, as well as animal studies scholars.

Vivisection rose exponentially between the two Royal Commissions, the period considered by this thesis. Nevertheless, the fundamental character of the debates did not much change. There remained little appetite for compromise and stereotypes only became more entrenched. Antivivisectionists were labelled crazed sentimentalists and vivisectors were branded heartless materialists and even sadists. The arguments and strategies of both sides also remained fixed. Despite scientific breakthroughs, especially in microbiology, the movement continued to deny that vivisection produced useful results. Moreover, it insisted that hypothetical benefits to physical health would always be outweighed by the spiritual and emotional damage that vivisection inflicted on individuals and society.[75] In sum, '[t]here quite possibly never was a contest in which the disputants failed so comprehensively to grasp one another's point of view'.[76]

With anti- and pro-vivisectionists talking at cross-purposes, the writings of both sides are, as Bates characterises them, 'voluminous, repetitive, and, for the modern reader, wearisome to plough through', a sentiment shared by French who notes the 'extraordinary persistence […] of such relatively dull literature' filled with clichés and highly-wrought indignation which 'becomes quickly banal with repetition'.[77] Sally Mitchell adds that the constant recirculation and reprinting of articles and letters makes it 'virtually impossible' to maintain bibliographic control of antivivisection writing.[78] The debate was circular in nature partly by design: as this thesis will go on to explore, the antivivisection movement repeatedly lambasted a handful of scientists and endlessly reprinted key passages from 'set' texts. This tactic was heavily weighted towards figures and works dating from the beginning of, or even prior to, the organised controversy – a time when scientists discussed their research more freely. The debate, therefore, remained pinned to early – or what scientists claimed were outdated – examples. Antivivisection literature had its canon, its vocabulary, and its conventions.

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[75] Antivivisectionists increasingly relied upon this line of argument as the public became persuaded by the clinical benefits of experimental physiology. See Frances Power Cobbe, *A Controversy in a Nutshell* (London: VSS, 1889).
[76] Richards, 'Drawing the life-blood of physiology', p.27.
[76] Bates, *Anti-Vivisection and the Profession of Medicine*, p.6.
[77] Ibid. French, *Antivivisection and Medical Science*, pp.158-59.
[78] Sally Mitchell, *Frances Power Cobbe: Victorian Feminist, Journalist, Reformer* (Charlottesville: University of Virginia Press, 2004), p.280.

The vexed relationship of vivisection and literature

The 'animal turn' is well and truly underway. The 1970s and '80s witnessed a growing interest in our entanglements with 'other animals'. This paved the way for the international conferences, dedicated presses and series, research centres, special issue journals, university courses and academic positions set up in recent decades to mine the political, ethical, theological, literary, and historical significance of non-human animals.[79] Guides such as *The Routledge Handbook of Human-Animal Studies* (2014) and *The Edinburgh Companion to Animal Studies* (2018) reflect the discipline's coming-of-age and the need to map the expanding critical landscape.

The relationship between the literary representation of animals and animal advocacy has always been fraught as, indeed, large sections of this thesis will explore. Many scholars have looked askance at fictional worlds which operate as breeding grounds for anthropomorphic creations that obscure animals 'as they really are'.[80] The role of affective stimuli – especially the problematic triad of sympathy, sentiment, and sensibility – in configuring our relationships with animals has been controversial since the eighteenth century at least. Yet literature continues to offer appealing possibilities for ethical engagement, and scholars have begun to return to the sympathetic imagination as a tool for inter-species understanding and ethical thought. The evolutionary biologist Marc Bekoff, neuroendocrinologist Robert Sapolsky, and psychologist Gordon Burghardt, have stressed the importance of recognising our position within the animal kingdom, subject to and shaped by the same evolutionary forces.[81] For Bekoff, this means acknowledging that anthropomorphising is a default position, or as he puts it, 'an inevitable sin' which seeks to make animal thoughts and feelings accessible.[82] He contends that if we discard anthropomorphic language 'we might as well pack up and go home because we have no alternatives'. 'Should we talk about animals as a bunch of hormones, neurons and muscles?', he asks rhetorically.[83] Martha Nussbaum argues that ethical life requires projection, so '[i]magining and storytelling remind us in no uncertain terms that animal lives are many and diverse', which in turn makes animals 'real to us in a primary way, as potential subjects of justice'.[84] Similarly, for Rachel Swinkin, sympathy 'relie[s]

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[79] Garry Marvin and Susan McHugh, 'In it together: An Introduction to human-animal studies', in *The Routledge Handbook of Human-Animal Studies*, ed. Garry Marvin and Susan McHugh (New York: Routledge, 2014), pp.1-9 (p.4).
[80] Jed Mayer, 'Ways of Reading Animals in Victorian Literature Culture and Science', *Literature Compass*, 7.5 (2010), 347-57; Cary Wolfe, 'Human, All Too Human: "Animal Studies" and the Humanities', *PMLA*, 124.2 (2009), 564-75; Simons, *Animals, Literature, and the Politics of Representation.*
[81] Robert M. Sapolsky, *A Primate's Memoir* (New York: Touchstone, 2002); Gordon Burghardt, 'The Sun Always Rises: Scientists also Need Semantics', *Behavioural and Brain Sciences*, 31 (2008), 133-34.
[82] Marc Bekoff, *The Emotional Lives of Animals: A Leading Scientist Explores Animal Joy, Sorrow, and Empathy – and Why They Matter* (Novato: New World Library, 2007), p.10.
[83] Ibid., p.124.
[84] Martha C. Nussbaum, *Frontiers of Justice: Disability, Nationality, Species Membership* (Cambridge, MA: The Belknap Press, 2006), p.355.

on a degree of abstraction that allow[s] it to move from fictional to real contexts'.[85] Researchers have increasingly suggested that fiction permits explorations of non-human others in a manner that can 'underscore what is at stake in the trivialisation – or outright destruction – of their experiences'.[86] Chris Danta, for instance, argues that the genre of the fable represents a biocentric challenge to anthropocentrism and can foreground animal perspectives in ways which challenge the concept of human uniqueness.[87] Likewise, David Herman considers how graphic narratives capture non-human consciousness.[88] Nineteenth-century writers also harnessed the disruptive potential of the literary imagination, as Anna Feuerstein's recent work *The Political Lives of Victorian Animals* (2019) has shown.

The late-nineteenth- and early twentieth-century antivivisection movement was a print-culture phenomenon. As well as recruiting notable authors and poets and using literary works as 'a repository of resources' to further their cause, activists also produced poetry, short stories, novels, reviews, and criticism.[89] Most studies of nineteenth-century vivisection have consisted of cultural histories and works about the movement's tactics and policies rather than its literary strategies.[90] French notes that short stories and poems published as pamphlets or in periodicals were 'a favourite genre' with antivivisectionists.[91] Yet he and subsequent scholars have treated such texts as historical documents from which to extract information about the pressure groups which circulated them, rather than as invitations to consider the works' complexities as literary texts.[92] For example, French justifies the brevity of his discussion of the monthly LAVS periodical, the *Animals Guardian*, on the grounds that the journal 'contained very little in the way of news or editorial matter on the movement'.[93] As well as skipping over the creative writing contained within these journals, many histories pay little attention to the language and form used in antivivisection journalism – a body of work which French considers 'too monotonously repetitive' for sustained attention.[94] The literature that emerged in response to the late-nineteenth-century vivisection

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[85] Rachel Swinkin, 'The Limits of Sympathy: Animals and Sentimentality in Eighteenth Century British Literature and Culture, 1759-1810' (unpublished doctoral thesis, University of Columbia, 1996), p.63.
[86] David Herman, 'Storyworld/Umwelt: Nonhuman Experiences in Graphic Narratives', *SubStance*, 40.1 (2011), 156-81 (p.159).
[87] Chris Danta, *Animal Fables After Darwin: Literature, Speciesism, and Metaphor* (Cambridge: Cambridge UP, 2018).
[88] Herman, 'Storyworld/Umwelt', p.148.
[89] Ibid., p.27.
[90] French's *Antivivisection and Medical Science in Victorian Society* and Rupke's edited collection *Vivisection in Historical Perspective* (1987) offer wide-ranging and well-researched cultural histories. Other works detail antivivisection tactics and policies. See Emma Hopley, *Campaigning Against Cruelty: The Hundred Year History of the British Union for the Abolition of Vivisection* (London: BUAV, 1998).
[91] French, *Antivivisection and Medical Science*, pp.256-57.
[92] Hamilton, 'Reading and the Popular Critique of Science', p.67.
[93] French, *Antivivisection and Medical Science*, p.258 n.123.
[94] Ibid., p.258.

debates, however, is more varied than French allows and, indeed, was neither confined to the pages of propaganda periodicals nor limited to the purpose of advocacy.

Despite the fact that the antivivisection movement was backed by 'a veritable "who's who" of Victorian authors', scant attention has been paid to the literature of vivisection which was often considered to be produced by a strange sentimental foible.[95] Indeed, the tenor of contemporary responses was similar. In 1898, for example, the *Athenaeum* dismissed Christina Rossetti's antivivisection views (together with her 'views' on the Apocalypse and the propagation of rabies) as an impediment to creative expression: a 'crust of nonsense' through which 'the poet burst out every now and then'.[96] This weekly literary took umbrage with Lewis Carroll's involvement in the movement that same year, complaining that by signing his letters to the press about vivisection, he 'used his fancy name for public appeal'.[97] Of his antivivisection poem 'Fame's Penny Trumpet', which Carroll printed and circulated privately in 1876, the *Athenaeum* remarked that 'such scolding is not logic, and not effective'.[98] The poem, 'affectionately dedicated to all "original researchers"', articulates concerns that science was being 'chopped up into salaried specialisms, detached from any public accountability'.[99] Money-grabbing, fame-hungry, self-serving modern scientists are the subject of his ire, and Carroll employs some rather colourful animalistic imagery, describing them as 'leeches' and 'vermin' with 'swinish appetite' and 'hoofs unclean'. Greatest disdain is reserved for vivisectors – 'modern mountebanks',

> Who preach of Justice - plead with tears
> That Love and Mercy should abound –
> While marking with complacent ears
> The moaning of some tortured hound:[100]

The following year, the *New York Times* chalked Carroll's antivivisectionist stance up to 'his little peculiarities'.[101] 'Protest poetry', then and now, has been deemed something of an embarrassment, and all the more so when dealing with wounded rabbits and amphibians – poetry not far off from the absurd sentimental poem 'Ode to an Expiring Frog' lampooned in Charles Dickens's *The Pickwick Papers* (1836):

> 'Can I view thee panting, lying
> On thy stomach, without sighing;
> Can I unmoved see thee dying
> On a log

[95] Jessica Straley, 'Love and Vivisection: Wilkie Collins's Experiment in *Heart and Science*', *Nineteenth-Century Literature*, 65.3 (2010), 348-73 (pp.345-55).
[96] [Unsigned], 'Christina Rossetti: A Biographical and Critical Study', *Athenaeum*, 3665 (22 January 1898), 109.
[97] [Unsigned], 'The Life and Letters of Lewis Carroll', *Athenaeum*, 3712 (17 December 1898), 860-61 (p.860).
[98] Ibid.
[99] Boddice, *The Science of Sympathy*, p.54.
[100] Lewis Carroll, 'Fame's Penny Trumpet' (published privately, 1876), ll.21-24.
[101] [Unsigned], 'Lewis Carroll', *New York Times*, 5 February 1899, p.120.

Expiring frog!'
'Say, have fiends in shape of boys,
With wild halloo, and brutal noise,
Hunted thee from marshy joys,
With a dog,
Expiring frog!'[102]

Certainly, the modern reader might find 'pathos-drenched' antivivisection verses, usually centred on or spoken by a beloved pet, tiresome, cloying, or even unintentionally comical.[103] Many had never been destined for lasting fame; unsigned or pseudonymous, topical, and aimed at rapid periodical consumption, their shelf-life was short.

'Novels with a purpose' attracted similar criticisms to poems with a purpose, as both fell increasingly out of step with late-Victorian aesthetic concerns. Nonetheless, antivivisection novels have attracted more critical attention, albeit almost exclusively from a feminist angle. In her pioneering study *The Old Brown Dog: Women, Workers and Vivisection in Edwardian England* (1985), Coral Lansbury made compelling connections between fictional, medical, and pornographic sources, and argued that socially disadvantaged groups found in vivisection a symbol of their own perceived vulnerability and a prism through which to refract their fears and resentments especially relating to medical and sexual (mis)treatment.[104] '[W]hen these women wept for tortured animals', Lansbury claims, 'they were crying for themselves'.[105] The immense historical interest in the intersection between the nineteenth-century antivivisection campaign and the women's movement has been swelled by flourishing socio-psychological approaches.[106] As Lansbury noted, the connection between vivisection and the abuse of women is frequent and overt in nineteenth-century fiction: '[n]ovel followed novel with a similar theme: the vivisector's wife is first driven mad and then used for purposes of research'.[107] Many of the studies published in the wake of her 1985 monograph have confirmed the thesis that 'female characters are vivisection's victim'.[108]

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[102] Charles Dickens, *Works of Charles Dickens, The Pickwick Papers* (New York: Hurd & Houghton, 1868), p.10.
[103] Ann Loveridge, 'Historical, Fictional, and Illustrative Readings of the Vivisected Body 1873-1913' (unpublished doctoral thesis, Canterbury Christ Church University, 2017), p.17.
[104] See also Lansbury, 'Gynaecology, Pornography, and the Anti-Vivisection Movement'.
[105] Carol Lansbury, *The Old Brown Dog: Women, Workers and Vivisection in Victorian and Edwardian England* (Madison, Wisconsin: Wisconsin UP, 1985), p.129.
[106] See Hilda Kean, '"The Smooth Cool Men of Science": The Feminist and Socialist Response to Vivisection', *History Workshop Journal*, 40 (1995), 16-38; Ian Miller, 'Necessary Torture? Vivisection, Suffragette Force feeding, and Responses to Scientific Medicine in Britain 1870-1920', *Journal of the History of Medicine and Allied Sciences*, 64.3 (2009), 333-72; Carol Adams and Josephine Donovan (eds), *Animals and Women: Feminist Theoretical Explorations* (Durham: Duke UP, 1995); James Turner, *Reckoning with the Beast: Animals, Pain and Humanity in the Victorian Mind* (Baltimore: John Hopkins UP, 1980).
[107] Lansbury, *The Old Brown Dog*, p.143.
[108] Anne DeWitt, *Moral Authority, Men of Science, and the Victorian Novel* (Cambridge: Cambridge UP, 2013), p.128; Michael R. Finn, 'Dogs and Females: Vivisection, Feminists and the Novelist Rachilde', *French Cultural Studies*, 23.3 (2012), 190-201; Greta Depledge 'Experimental Medicine, Marital Harmony, and Florence Marryat's *An Angel of Pity*', *Women's Writing*, 20.2 (2013), 219-34.

New Woman fiction and feminist works including Sarah Grand's *The Beth Book* (1897), Florence Marryat's *An Angel of Pity* (1898), Gertrude Colemore's *Priests of Progress* (1908), Elizabeth Phelps' *Through Life Us Do Part* (1908), and Florence Fenwick Miller's *Lynton Abbott's Children* (1879) send a clear message to female readers: do not socialise with vivisectors, and certainly do not think of marrying them.[109] Typically, these authors used vivisection as a rapid characterisation tool and employed courtship plots to convey the emotional atrophy triggered by animal experimentation. A vivisector's hardened heart did not just affect his wife and daughters but also endangered the position of women as 'moral guides' and, therefore, undermined the bedrock of family life.[110] Although gendered violence or neglect in these texts was usually domestic, it could also take root in lock hospitals and other medical establishments housing vulnerable women. New Woman fiction frequently correlated vivisection with medicalised sexual abuse including gynaecological operations and forced exposure under the controversial Contagious Diseases Acts of the 1860s. Concerns about female vivisectors were raised in the 1880s when it became known that students at Girton College, Cambridge, were taking lessons in physiology. The spectre of the 'lady vivisector' haunted the movement but, both in fiction and in reality, vivisectors were overwhelmingly if not exclusively male.[111] As Cobbe remarked, '[i]t is *possible* that there may arise such a monster as a woman vivisector, a female Schiff or Bernard; though, thank God, as yet there are little signs of such ignominy'.[112] Concerns regarding gender informed antivivisection debates but did not define them: despite the recent critical emphasis, antivivisectionism was not simply 'a woman's question'.

Although literature about vivisection often shares recognisable tropes, characters, and storylines, it does not conform to a particular genre and often borrows from a range of literary traditions including sensation fiction, gothic, and romance. As 'protest' or 'purpose' literature, these texts raise tricky questions about where fact ends, and fiction begins. Ann Loveridge claims that Leonard Graham's novella *The Professor's Wife: A Story* (1881) and Colemore's *Priests of Progress* were unusual for including primary sources published in both the general press and specialist periodicals.[113] However, as chapter two of this thesis shows, references to primary texts, real figures, and events were a mainstay of much antivivisection fiction. Exchanges between literary and non-literary writing travelled in each direction: while novels and poems liberally helped

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[109] Hamilton, 'Still Lives', p.31.

[110] Dewitt, *Moral Authority*, p.129.

[111] Therefore, this thesis uses male pronouns when referring to vivisectors.

[112] Frances Power Cobbe, *The Duties of Women: A Course of Lectures* (London: William & Norgate, 1881), p.24 [emphasis in original].

[113] Loveridge, 'Historical, Fictional, and Illustrative Readings of the Vivisected Body', p.114. Leonard Graham is probably a pseudonym.

themselves to journalistic sources, supposedly factual, eyewitness accounts borrowed gothic tropes and relied on literary allusions.[114] The boundary between fact and fiction in antivivisection literature was often soft and porous.

Whereas poetry and short stories were typically published by antivivisection societies and usually tackled animal experimentation head-on, the novels were rarely so narrowly focused. Often, vivisection was just one of many social problems addressed in a given text, amongst those of employment practices, childhood disease, and poverty. This thesis does not consider those long out of print novels in which vivisection appears only a minor theme, such as Ellis Marston's *Of the House of Chloe* (1900), Compton Reade's *Who Was Then the Gentleman?* (1885), and Myrtle Reed's *A Spinner in the Sun* (1906). Likewise, novels which condemn animal experimentation from a theological basis but do not discuss vivisection in greater depth, such as George MacDonald's *Paul Faber, Surgeon* (1878), Maria Corelli's *The Master Christian* (1900), and J. Cassidy's *The Gift of Life* (1897), fall outside the scope of this thesis. The elusive, hidden nature of vivisection, however, means that the representation of the practice itself is absent from even those texts centrally concerned with animal experimentation.

Novelists and poets seldom expressed pro-vivisection views in their creative works, and scientific journals usually excluded poetry, such that the literature produced in the period and under consideration here is naturally weighted towards those that objected to the practice. Not that all vivisection literature was produced for propaganda purposes. Some writers found vivisection compelling for the aesthetic and linguistic ideas which it evoked rather than for socio-political or ethical reasons. Such was the case for H. G. Wells (who supported vivisection), and for a wide range of literary critics. They also have a place in this study.

The United Kingdom was the site of the most ardent movement against live animal experimentation worldwide in the period. Therefore, while the thesis draws on works by Italian, Swedish and French writers, it focuses predominantly on British authors and poets. Vivisection debates were largely an English and indeed a metropolitan affair. A survey by the First Royal Commission revealed that the highest density of physiologists worked in and around London and Cambridge, and licensing statistics confirm that this remained so after the 1876 Act was passed.[115] Michael Finn and James Stark have recently showed that important research took place outside of England's major cities, but that vivisectors there encountered more difficulties obtaining licenses from provincial authorities and sometimes had to rely on colleagues to perform experiments for

[114] See for example L. Lind-af-Hageby and Leisa Schartua, *The Shambles of Science: Extracts from the Diary of Two Students of Physiology* (London: Ernest Bell, 1903).
[115] French, *Antivivisection and Medical Science*, p.44.

them.[116] Animal experimentation was rare in Ireland, where antivivisection organisations were never very powerful or active.[117] Scotland's role was more significant, as Edinburgh was an important centre for experimental research, but although the city's antivivisection societies were 'enthusiastic and vociferous', they lacked parliamentary influence.[118] Proximity to Westminster and to physiological research centres such as the Brown Institute and UCL explains why the biggest and wealthiest antivivisection organisations were based in London. Some societies had active provincial branches (notably in the South-West), but major meetings and protest activities usually took place in the capital. Scholarly attention has therefore been concentrated within the 'golden triangle', and this thesis is no different.

Derived from the Latin root *vīvus,* meaning 'living', and *sectio*, meaning 'cutting', vivisection typically refers to incisions made upon a living human or animal body for scientific purposes; the *OED* traces its first English usage to 1707, and in the seventeenth century the definition narrowed to generally exclude the former.[119] By the second half of the nineteenth century, the definition had expanded significantly to reflect the realities of Victorian science; the word has, since then, included surgical, chemical, physiological, reproductive, mental, bacterial, nutritional, shock, and electrical experiments. 'Vivisection', 'research', 'testing', and 'experimentation' are used interchangeably throughout this thesis, as indeed they were in the historical period under consideration. Similarly, the use here of the terms 'antivivisection' and 'antivivisectionist' takes its cue from the period: in the nineteenth century, as Bates notes, these were 'so familiar a term of self-description that it would be obtuse to call organised opposition to animal experimentation by any other name'.[120] Certainly, it would be misleading to refer to antivivisectionists as 'animal rights activists'. As the celebrated art critic John Ruskin asserted during an invited address to an antivivisection meeting in Oxford in 1884:

> It is not the question whether animals had a right to this or that in the inferiority that they are placed into mankind. It was a question – What relation had they to God, what relations mankind had to God, and what was the true sense of feeling as taught to them by Christ the Physician.[121]

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[116] Michael A. Finn and James F. Stark, 'Medical Science and the Cruelty to Animals Act 1876: A re-examination of anti-vivisectionism in provincial Britain', *Elsevier*, 49 (2015), 12-23 (pp.20-21).
[117] French, *Antivivisection and Medical Science*, p.90.
[118] Ibid.
[119] Nicholaas Rupke, 'Animal Experimentation from Antiquity to the end of the Eighteenth Century', in *Vivisection in Historical Perspective*, ed. Nicholaas Rupke (London: Routledge, 1987), 14-47 (p.14). See also Anita Guerrini, *Experimenting with Humans and Animals: From Galen to Animal Rights* (London: John Hopkins UP, 2013).
[120] Bates, *Anti-Vivisection and the Profession of Medicine*, pp.12-13.
[121] John Ruskin, E. T. Cook and A. Wedderburn (eds), *The Works of John Ruskin*, 39 vols (London: George Allen, 1908), XXXIV, 643–44.

Victorian antivivisectionism was rooted in the ethics of humane treatment and drew more heavily from a theological model than a rights-based discourse which only became the prevailing argumentative strategy for Western animal advocacy in the late twentieth century. Hence, I use the terms animal 'defence', 'protection', and 'welfare' to describe organised contemporary efforts to improve the lives of animals in the period. Finally, the terms 'nonhuman animal' and 'human animal' are commonly used in the field of animal studies to call attention to the historically and philosophically inflected divisions and differences between 'human' and 'animal' categories, and to challenge language that supports speciesism, the assumption of human superiority which is often used to justify exploitation.[122] Since 'The Pen and the Scalpel' is not primarily interested in animal amelioration, and since these terms can cause confusion, 'animal' is preferred alongside, where appropriate, 'beast', brute', and 'creature', each of which was used both neutrally and negatively in the nineteenth century.

In her recent book, Li charts how Britain's early animal welfare organisations exploited contemporary literary, religious, political, and scientific discourses. *Mobilizing Traditions in the First Wave of the British Animal Defense Movement* (2019) tells 'a story about the creative agency of animal defenders', offering a much-needed intervention in the historiography of Victorian animal protectionism.[123] Most pertinently for this thesis, Li claims that a literary heritage was actively fashioned rather than passively inherited: by performing a series of 'mobilising tasks' such as reviewing, criticism, and the solicitation of literary patrons, animal workers accessed useful 'resources contained within the various literary traditions'.[124] However, while her monograph provides a useful historical introduction to animal protectionism's literary-cultural links, the literature itself is not studied in depth: it occupies only a small portion of the survey which also takes in disparate intellectual traditions such as Christianity, natural history, evolutionism, and political radicalism. *Mobilizing Traditions* attends to the political function of 'literary tasks' rather than the fundamentals of literary texts and chooses 'critical' rather than 'creative' forms of writing which are often (erroneously) treated as less literary. Furthermore, while Li notes that the nineteenth-century animal protection movement 'played a part in recreating and energising' the traditions from which it drew, this remains only a small concern in her chapter on literature.[125] In contrast, 'The Pen and the Scalpel' presents a sustained exploration of the impact of vivisection upon Victorian literature and culture.

[122] Íris Lilja Ragnarsdóttir, 'Verbal Vivisection: Animal Abuse and the English Language' (unpublished doctoral thesis, Sigillum University, 2020), p.1.
[123] Li, *Mobilizing Traditions*, p.12
[124] Ibid., p.8, p.270.
[125] Ibid., p.2.

Chapter one, 'Protest Literature and the Antivivisection Movement', explores how and why the movement formed its distinctly literary identity. It analyses new forms of writing which emerged in association periodicals and pamphlets, such as the construction of humane literary genealogies and the emergence of animal-centred literary criticism. These reveal the movement's attempt to simultaneously draw from and re-imagine the canon. Studying how, where, and when literary works and figures appeared in antivivisection material further reveals pervasive anxieties about managing readers' engagement with these works, and also uncovers broader debates about the individual and social meaning of fiction and poetry. These findings challenge Li's characterisation of literary culture as a 'resource' that could be straightforwardly exploited by the application of certain tools and the completion of set 'tasks'; I show that antivivisection efforts to promote literary writing and animal activism as natural bedfellows raised problems as well as opportunities, and that 'dipping' into literary works and traditions was rarely carefree. Likewise, the movement's leaders did not simply see literature as a source of cultural authority and their engagement with texts were not always of the 'goal-oriented' kind.[126] Cobbe, Henry Salt, and Stephen Coleridge, among others, insisted that aesthetic experience enhanced ethical sensibility – that the divine power of the imagination fed the moral faculties. Fiction-reading could be a powerful moralising and mobilising force, an effective and affective tonic against scientific tyranny. However, expressions of excessive sentiment endangered the efficacy, public image, and political legitimacy of the cause. By seeking to monitor and manage textual encounters and responses, antivivisectionist leaders hoped to 'move' activists in a double sense: to transform strong personal feelings into useful public agitation. Association periodicals, pamphlets, and flyers played a distinctive role in firming up literary credentials. By gaining a deeper understanding of the movement's fraught relationship with literary writers and writings, I offer new contexts for, and readings of, culturally significant texts. Surveying a wide range of essays and reviews in periodicals and newspapers – including quarterlies, weeklies, and dailies – from different parts of the UK is necessary to demonstrate the range of ways that Victorian literary-critical discourses intersected with experimental physiology. By examining the literary elements of association journals, from dedicated fiction sections to reviews and essays, this chapter offers a fresh perspective on the study of social-movement periodicals which have, thus far, been examined largely within historical and political frameworks.

As well as directing a programme of literary reading, antivivisection propaganda encouraged activists to interpret scientific texts. Chapter two, 'The Vivisector', begins by examining how antivivisectionists tried to recover the authentic emotions and motivations of the

[126] Ibid., p.9.

seemingly unfeeling experimenter from first-hand accounts. Historians of science such as Colin Milburn, Paul White, Jed Mayer, and Rob Boddice have recognised the cultural significance of these, contained within physiology books, the Royal Commission *Report*, and essays and letters published in periodicals for general readership.[127] However, literary scholars overlook this rich body of work in favour of antivivisectionist writings. Consequently, the rhetoric of revelation, ever-present in antivivisection propaganda and replicated in novels dealing with the subject, remains active (yet hitherto unacknowledged) within academic discourses; early socio-psychological histories of antivivisectionism have sought to 'get into' the animal activist's mind, while literary-critical studies repeatedly attempt to uncover the 'real' vivisectors behind their fictional counterparts. Such detection-work, although occasionally illuminating, is over-done, and tends to delimit readings. Popular novels like *Heart and Science* and *The Island of Doctor Moreau* bear the brunt of this approach while less well-known antivivisection fiction tends to be merely auxiliary, if mentioned at all. Rather than considering the vivisector as a distinct character, critics often perceive him either as a thinly-veiled depiction of a contemporary physiologist or consider him an iteration of the mad-scientist trope.[128] By performing a literary-critical study of scientists' accounts and the antivivisection responses they provoked, this chapter shows that Victorian novelists engaged with contemporary scientific writings and laboratory practices in more substantial ways. They, too, were preoccupied by the experimenter's emotions and his attempts to read others and to be read in return.

In line with the thesis as a whole, chapter two refuses to prioritise popular titles over now-obscure ones, 'factual' (i.e. scientific) over fiction writing, or antivivisection works over works about vivisection. Only by reading across these often-arbitrary lines can shared preoccupations and anxieties become visible. The antivivisectionist physicians Edward Berdoe and Walter Hadwen produced novels-with-a-purpose that tackled the troubled and troubling figure of the vivisector, as did the popular novelists Wilkie Collins and Ouida. H. G. Wells's scientific novella *The Invisible Man: A Grotesque Romance* (1897), rarely discussed in this context, provides a more oblique take. In each of these texts, non-invasive strategies which make moral character legible on the body's

[127] Colin Milburn, 'Science from Hell: Jack the Ripper and Victorian Vivisection', in *Science Images and Popular Images of the Sciences*, ed. Peter Weingard and Bernd Hüppauf (New York: Routledge, 2008), pp.125-58; Paul White, 'Sympathy Under the Knife: Experimentation in Late Victorian Medicine', in *Medicine, Emotion and Disease, 1700-1950*, ed. Fay Bound Alberti (New York: Palgrave Macmillan, 2006), 100-24; Paul White, 'Darwin's Emotions: The Scientific Self and the Sentiment of Objectivity', *History of Science Society*, 100.4 (2009), 811-26; Jed Mayer, 'The Expression of the Emotions in Man and Laboratory Animals', *Victorian Studies*, 50.3 (2008), 399-417.

[128] Laura Otis, 'Howled out of the Country: Wilkie Collins and H. G. Wells Retry David Ferrier', in *Neurology and Literature, 1860-1920*, ed. Anne Stiles (New York: Palgrave, 2007), pp.27-51; Anne Stiles, 'Literature in "Mind": H. G. Wells and the Evolution of the Mad Scientist', *Journal of the History of Ideas*, 70.2 (2009), 317-39; Straley, 'Love and Vivisection', p.349; Sherryl Vint, 'Animals and Animality from the Island of Dr Moreau to the Uplift Universe', *Yearbook of English Studies*, 37.2 (2007), 85-102 (p.87).

surface are promoted as alternatives to experimental practice. Yet, skin-deep readings often prove insufficient when dealing with the slippery figure of the vivisector who appears at once transparent and opaque. Not only does he evade scrutiny, but he also powerfully returns the gaze. I show that his interactions with others, whom he regards as scientific specimens, are repeatedly marked by a recurring feature of laboratory practice: the paradoxical combination of clinical detachment from and zealous absorption in the vivisected subject. By arresting natural flows of interpersonal affect, the vivisector disrupts the social fabric of these fictional worlds, producing unnatural physiological and psychological states in fellow characters. The greatest threat posed by fictional vivisectors, the chapter argues, is not only that they themselves are unreadable, but that they might make others so too. Here, and indeed running throughout the thesis, descriptions and depictions of vivisectors – and of vivisection – raise curious issues relating to representation, often expressed through the language of transparency and opaqueness, inscription and erasure.

The fascination with physiologists' feelings and the desire to uncover and measure them mirrored the contemporary fascination with animals' abilities to experience and express pain. Chapter three, 'Signifying Pain', explores how physiologists and antivivisectionists responded to competing accounts of pain-perception and vied for the authority to interpret feeling-states and account for pain's function at a time when the traditional meanings attached to suffering (whether theological, moral, medical etc.) were being shed rapidly. The relationship between pain and language has withstood extensive theorising. In *The Body in Pain: The Making and Unmaking of the World* (1987), Elaine Scarry argued that pain is ultimately inexpressible in words because it destroys the language that might objectify it.[129] Her claim has sparked intense debate. Rachel Ablow, Barbara Korte, Joanna Bourke, and Javier Moscoso have each suggested that, in fact, literary language is uniquely capable of capturing and conveying painful experience.[130] However, whether written accounts can ever fully accommodate a non-speaking subject (such as an animal) has received far less scholarly attention, perhaps because earnest yet circular debates about anthropomorphism threaten to undo them before they can even begin. Yet nineteenth-century physiologists and their opponents did not shy away from the issue; instead, they tried to resolve it in creative and, occasionally, remarkably similar ways. This chapter supplies literary-critical readings of descriptions and visual depictions of experiments in physiological textbooks, connecting scientists' strategies to equally inventive approaches adopted by antivivisectionist poets

[129] Elaine Scarry, *The Body in Pain: The Making and Unmaking of the World* (Oxford: Oxford UP, 1985), p.161, p.11.
[130] Rachel Ablow, *Victorian Pain* (Princeton: Princeton UP, 2017); Barbara Korte, 'The Semantics of Physical Pain in Science Fiction', *English Studies*, 90.3 (2009), 294-304; Joanna Bourke, *The Story of Pain: From Prayer to Painkillers* (Oxford: Oxford UP, 2014); Javier Moscoso, *Pain: A Cultural History*, trans. Sarah Thomas and Paul House (New York: Palgrave Macmillan, 2012).

and animalographers. In doing so, I provide new texts and contexts which can redirect longstanding debates about pain and language.

For physiologists, establishing an objective measure of harm and a direct correspondence between painful sensation and expression meant replacing ordinary language with the universal, wordless language of graphic registration and recording technologies. Chapter three analyses their appearance in physiological textbooks and builds upon Boddice and White's recent studies by showing that mechanical modes of representation often conjured precisely the images of inscription, linguistic symbolism, and transliteration that their users were anxious to avoid. Ultimately, the body's testimony proved unreliable; the action of anaesthesia, investigations into reflex action, and the practice of pithing – 'to pierce, sever, or destroy the upper spinal cord or brainstem of an animal, so as to cause death or insensibility' – each showed that facial expression and bodily gesture did not necessarily relate to anatomical lesions.[131] In short, it seemed that signs of pain could be divorced from the actual experience. Antivivisectionists rejected this claim and resented physiologists' attempts to discard the emotional and cultural significance of suffering in favour of a modern, materialist understanding of pain. They sought to counteract scientific re-definitions with insistently literary language and highlighted the importance of the sympathetic imagination. Poetry, often published in association periodicals, and animalographies published as separate volumes, sought to foreground non-human 'voices' in inventive ways. I suggest that, by offering direct and sustained access to the nonhuman consciousness, some antivivisection texts presented themselves as literary answers to the first 'person' narration offered by the graphic self-recording technologies which were being used in British and European laboratories. Nevertheless, despite concerted efforts to 'listen' to animals, antivivisectionists were vexed by essentially the same thing as experimental scientists: language, like pain, seemed equally troubled by the distance between signifier and signified. The final section of this chapter discusses Wells's works, primarily *The Wonderful Visit* (1895) and *The Island of Dr Moreau* (1896), both of which also tussle with the uneasy relationship between injury, experience, and expression, and raise compelling questions about whether pain is essential or superfluous. I argue that the vivisection debates were a key context for Wells who exploited the ambivalence they produced, undermined the generic expectations of writings about the subject, and considered whether literary and linguistic methods could uniquely capture – or even solve – the problem of pain.

Gowan Dawson has found that Victorian reviewers often constructed analogies with Cuverian palaeontology: was serialised fiction best described as a 'loose, baggy monster' made up of incoherent and ill-fitting parts (like some of the prehistoric fossils being collected at the time),

[131] *OED,* sense 2, first usage dated 1805.

or could it, once completed, represent harmonious aesthetic wholeness?[132] 'The Pen and the Scalpel' uncovers another nineteenth-century literary-critical tradition that incorporates scientific ideas and imagery: the fourth chapter, 'Writing as Vivisection', traces how analogies between vivisection and literature were frequently employed to interrogate the role of the writer and critic in various contemporary contexts. Hitherto, the connection between fiction and vivisection has been noted only by Richard Menke in his 2000 article, which analyses works by George Eliot and G. H. Lewes, and argues that the former's evolving theory of the novel takes her close to the latter's 'theory of *écriture* as vivisection'.[133] According to Menke, Eliot embraced the analogy between writing and vivisection not simply because both were based on minute observation, or because the vivisector offered a useful figure for such investigations, but because by appropriating laboratory techniques she could 'produce depth psychology along the model of experimental physiology'.[134] I touch upon Eliot and Lewes, too, but show that such imagery was used far more widely: it did not just appeal to writers who were particularly knowledgeable about experimental physiology. In fact, the chapter reveals that, although the analogy was most active within and about certain modes (namely naturalist, realist, critical, historical, and life-writing), it was remarkably sprawling both in terms of the genres and authors it was applied to and the meanings it conveyed. Certainly, while anatomical or paleontological metaphors tended to relate to serialised fiction and to questions of coherence, harmony, symmetry, and proportion, the vivisection connection offers no such neatness. Typically, surgical terminology such as 'slicing' or 'cutting' into the heart of some 'subject' or 'matter' signal incisive and thorough textual engagement. In cases of critical demurral, one might anticipate the analogy to relate to narrative fragmentation or other kinds of disruption. Although, in some respects, the analogy between vivisection and literary writing aligned with these established or expected meanings, it did not require a sharp point of contact between writer (whether critical or creative) and text. In fact, as the chapter argues, this discourse was often preoccupied with exploring the possibilities of detachment rather than connection, and the absence, rather than the expression of, feelings.

Chapter four begins by tracing ways in which British realist and French naturalist traditions considered the vivisector as a template for authorship. Although British realists were less willing to align their aims and methods with the scientist's, England's pre-eminent realist found the connection rewarding; Eliot referred to experimental physiology to justify her distinctive narrative 'intrusions' while her reviewers also used vivisection terminology to critique this element of her

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[132] Gowan Dawson, 'Literary Megatheriums and Loose Baggy Monsters: Paleontology and the Victorian Novel', *Victorian Studies*, 53.2 (2011), 203-30.
[133] Richard Menke, 'Fiction as Vivisection', *English Literary History*, 67.2 (2000), 617-53 (p.618).
[134] Ibid., p.619.

style. Naturalist writers including Émile Zola and August Strindberg thought about vivisection slightly differently, although with some of the same ends in sight. They embraced a Bernardian philosophy of science with the theory and practice of vivisection at its core to explore how reducing or even removing the writer from the creative process might, eventually, make literature scientific. Allusions to vivisection by British literary critics interrupted the more predictable meanings attached to surgical and anatomical cutting in the body-as-text tradition. Experimental physiology inspired and expressed an evolution of critical approach in the latter part of the century away from destructive reviewing and towards a greater attention to the principles of critical interpretation. Critics turned the knife on each other and even themselves, using laboratory principles and methods to dissect the practice of criticism itself as well as the texts on their literary operating tables. In each of these areas – realism, naturalism, and criticism – the pen and the scalpel became complimentary, perhaps even compliant, instruments. The former extends the action of the latter; by applying physiological principles to literary operations, the pen promises to dissect emotional and psychological truths while surgical instruments are more limited to probing the physical. Antivivisectionists struggled to maintain the conceptual boundaries between art and science, and by the *fin-de-siècle* a peculiar intimacy between literary and laboratory work had developed.

'The Pen and the Scalpel' is the first sustained literary-cultural study of nineteenth-century vivisection. Within the overarching context of Victorian Studies, it engages significantly with three fields: literary studies (including periodical studies), history (most notably the history of science and the emotions), and animal studies. Crucially, it seeks to embrace interdisciplinarity as a method, and not simply as a topic. The thesis makes the case that contributions by key figures like Cobbe and Coleridge; landmark events such as the 'brown dog affair' and the Royal Commissions; and core non-fiction, and especially scientific, works such as Burdon-Sanderson's *Handbook* and Bernard's *Introduction* need not serve merely as contexts to be mined for evidence of socio-historical developments, but as complex texts in their own right. The thesis, therefore, embraces an interdisciplinary approach which does not use contemporary events as a background with which to elucidate literary texts, but which reads literary works alongside texts not commonly valued for their representational complexity. Such a juxtaposition can prove rewarding. For instance, rather than analysing the First Royal Commission *Report* as the straightforward account that it purports to be, I show that its concerted efforts to assess the value and extent of British experimental physiology generated complex and competing ideas about the limits of interpersonal and interspecies perception and affect that had far-reaching effects within the laboratory and beyond. Likewise, the scientific textbooks discussed at length in chapter three are not just dry instructional

works containing facts on the history of science, but are also complex texts in their own right. Despite efforts to present laboratory work straightforwardly and to *show* results through graphic displays (charts, diagrams etc.) rather than to *tell* by means of lengthy description, these works have distinctive tropes, characters, and conventions that become visible through a literary lens. Of course, this study also reinvigorates readings of literary texts, including those by Wells, Collins, Berdoe, and Hadwen who incorporate and interrogate – sometimes forthrightly, and other times more quietly – strategies used in scientific works. The thesis taps into reciprocal flows of meaning between literary and supposedly 'non-literary' works, demonstrating how texts about vivisection tend to borrow and combine a variety of elements from different modes of writing. Vivisection featured more prominently than has usually been assumed in the minds and works of Victorian writers, both amateur and professional. It was not just a topic of concern for a minority of impassioned animal lovers; nor did it simply pop up in the literature of the period alongside other topical matters. Extending far beyond 'literature with a purpose', the language of vivisection found its way into the heart of late-Victorian literary debates. Indeed, contemporary live animal experimentation raised multiple challenges and opportunities relating to representational strategies, characterisation, and narrative technique. A wide range of writers grasped some of the laboratory's processes and preoccupations for their own aesthetic and epistemological ends, even recreating the conceptual space of the laboratory and fashioning themselves as 'literary vivisectors'.

As well as opening familiar works such as Wells's *Island of Dr Moreau* up to new interpretations, this thesis uncovers writings about animals which have garnered little or no attention in animal studies, literary studies or, indeed, in any scholarly or popular context. Indeed, antivivisection poems, essays, and stories published in association periodicals often remain entirely untouched. Animal autobiographies or 'animalographies' are frequently passed over because of their apparently unapologetic anthropomorphism; the 'animal animator' or non-human teller's concern with human affairs (commonly including servile adoration of 'master' or 'mistress') can seem at best silly, and at worst degrading because it reinscribes animal-human hierarchies under the guise of giving the animal a 'voice'. Chapter three challenges this assessment of the genre. By tapping into contemporary debates about interspecies communication and pain expression in which antivivisectionists participated prominently, it suggests that animalographies and antivivisection poetry have radical underpinnings and implications. By extending my analysis far beyond the 'antis' to incorporate writers primarily interested in the aesthetic or technical opportunities that live experimentation offered, I invite literary animal studies into spaces where animals are absent: fiction about vivisection often contains no actual scenes of vivisection and

texts with few or no representations of non-human interactions can, in fact, be all about animals and their treatment.

The Victorian vivisection debates provide particularly fertile loam for histories of science and of the emotions. This thesis includes unpublished archival material relevant to these growing fields of study, including impassioned letters sent by antivivisectionists to scientists and university laboratories, as well as correspondence from experimenters to their colleagues, diary entries, and other papers. Whereas early scholarship tended to speculate about the inner-feelings of antivivisectionists and physiologists, this thesis focuses on representations and interpretations more than emotional 'realities'. The first chapter presents insights into how antivivisection leaders and key workers sought to elicit and manage emotional responses to vivisection chiefly through their association periodicals. The third chapter studies how physiologists presented their feelings about their work in first-person verbal and written accounts as well as how their opponents sought to overturn and reinterpret these experiences. Scientific and government documents feature prominently and some, like the *Report* and physiological textbooks, are shown to be nexus for science studies and human animal studies. These are important historical sources too, since they reveal various cultural anxieties relating to scientific professionalisation and power, human-animal relations, and inter-species suffering. I pay attention to the complex ways in which reading human and nonhuman pain-experiences shaped and was shaped by a surprisingly wide range of discourses and cultural concerns relating to medicine, theology, and politics. This is part of what distinguishes my analysis in chapter three from other excellent studies by Milburn, White, Mayer, and Boddice, among others. I show that clashes between pro- and antivivisectionists generated nothing short of an affective crisis in the late nineteenth century, and concerns about how to record (and especially to 'write' and 'read') experiences like pain were taken up in creative ways.

The final chapter most clearly illuminates the key ways in which 'The Pen and the Scalpel' makes its scholarly intervention and departs from established approaches to the study of nineteenth-century experimental physiology and the movement against it. As previously mentioned, the subject-matter has been well covered from a historical perspective, and the last couple of years have seen a little more attention paid to the literature and visual culture of vivisection – most notably represented by Hamilton and Li's efforts. If early histories looked at the antivivisection movement from the 'outside', these works position themselves more sympathetically from the 'inside'. In many ways, this fresh perspective is very useful, but does have its drawbacks. By seeking to restore the agency of Victorian animal protectionists and the importance of their cultural work they risk overestimating the mediating power of the movement over the images, language, and meanings of vivisection. This approach also perpetuates the earlier

reductionist focus on literature as merely a functional tool employed to convey the claims of brutes. In fact, vivisection influenced contemporary culture in ways that the movement did not anticipate and could not control, offering writers formal and imaginative opportunities beyond a straightforward concern with animal welfare. 'The Pen and the Scalpel' does something quite different: it traces how the vivisection debates shaped and even generated discourses only loosely connected to this 'original' context. Even those writers committed to aiding the cause found it tricky to prune the topic to serve political ends and to manage and direct reader responses. Indeed, its fecundity proved irrepressible and made cross-pollination inevitable. Ethics gave way to aesthetics, and the achievement of political ends was frustrated by representational preoccupations. This thesis, then, moves away from the socio-political contexts in which the late-nineteenth and early twentieth-century vivisection debates have been extensively read. In doing so, it shows that although the controversy certainly did give rise to naïve and simplistic propaganda literature, it also provoked and shaped complex and substantial issues relating to literary purpose and production. Indeed, the preoccupation with vivisection was fundamentally bound up with the nature and limits of representation.

Chapter 1: Protest Literature and the Antivivisection Movement

In February 1903, Professors William Bayliss and Ernest Starling vivisected a small dog at UCL's Institute of Physiology. Unbeknownst to them, two of the 60-70 attendees were joint secretaries of the Anti-Vivisection Society of Sweden (AVSS) (see Fig. 4). These detectives – Lizzy Lind-af-Hageby and Leisa Katherina Schartau – claimed that the dog was not anaesthetized, and therefore that Bayliss's experiment breached the 1876 Act. The pair reported their findings to the Hon. Stephen Coleridge, Secretary of the NAVS.

Figure 4. [Photograph of the Reconstruction of the Brown Dog Experiment for Bayliss v. Coleridge], Picture Box 4, UCL Science Collection, UCL, London.

On 1 May 1903, Coleridge read out their eye-witness statements in an inflammatory speech to the more than 2000 people assembled in London's St James Hall for a public antivivisection meeting. Beforehand, however, he vividly set the scene of the crime: Gower Street was transformed into the *Via Dolorosa* and UCL's physiological laboratory became 'a pit of Tophet' into which 'passes a never-ending procession of helpless dumb creatures'.[1] As for Zion, UCL's Slade School fitted the bill: fine art students working there were disturbed from their pursuit of 'one of the purest and loftiest of human studies' by the 'shrieks and piteous cries of dogs in agony'. These drifted 'into the serene and silent school of the beautiful […] distinct from the vivisectors' den'. 'Surely', Coleridge ended with a flourish, 'in this world Heaven and Hell were never brought

[1] [Unsigned], 'The National Anti-Vivisection Society', *BMJ*, 1.2210 (9 May 1903), 1109.

so near together!'[2] One medical correspondent dismissed his 'tearful tones on the contrast between the Slade School, that place of peace, the serene and silent school of the beautiful' and the chilling torture taking place just next door as '[t]he old story, the old familiar flowers of rhetoric'.[3] The *British Medical Journal* (*BMJ*) played up the connection between fiction and falsehood, suggesting that Coleridge had 'tinge[d] the sober hues of fact with the colours of romance', spun 'a fisherman's yarn', and 'dressed a silly story into a tale of horror'.[4]

The courts agreed: Bayliss successfully sued for libel and was awarded £2000 in damages and £3000 in costs. It transpired that the dog *had* been given a morphine injection prior to the demonstration and that ACE mixture had been administered during the procedure.[5] Congratulatory letters from fellow physiologists flooded in; Francis Gotch and Michael Foster who had been present in the packed courthouse gallery celebrated the verdict as a wholesale vindication of their profession.[6] Public opinion, however, was split. The British medical press, *The Times*, and the *Mail* were satisfied, but the *Sun*, *Star*, and *Daily News* regarded the outcome as a miscarriage of justice.[7] The *BMJ* scathingly predicted that Coleridge would 'doubtless find that martyrdom has compensations in the literary incense, wafted from the censers of the *Daily News* and the *Star*, and in the subscriptions of some sympathetic poets and parsons'.[8] More than 'literary incense' came Coleridge's way: within four months, the *Daily News* had raised £5,700 of donations to compensate him.

Coleridge's slanderous speech and the reportage of the trial highlights the perception, held by both pro- and antivivisectionists, that art and experimental science were competing rather than complimentary modes. Lady Walburga Paget, a well-known antivivisectionist and vegetarian, wrote that the new physiology was antithetical to 'the artistic and aesthetic point of view'; 'no man or woman with any sense of beauty could ever be a pro-Vivisectionist' and, by the same token, 'every true artist' was necessarily an 'anti'.[9] Yet, the 'slight wall' partitioning the Slade School from UCL's Physiology Department captures antivivisectionist concerns about the threat that laboratory science posed to the artistic realm. In 1885, Oxford University voted to establish a laboratory for vivisection, prompting John Ruskin to resign as Slade Professor of Art. 'I cannot lecture in the

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[2] Ibid.

[3] R. H. Clarke, 'Mr. Coleridge's Gentleman-Like Amenities' [Letter to the Editor], *BMJ*, 1.2210 (9 May 1903), 1117-19 (p.1118).

[4] Ibid; [Unsigned], 'The Protomartyr of Antivivisection', *BMJ*, 2.2239 (28 November 1903), 1415-16 (p.1415).

[5] A mixture of alcohol, chloroform, and ether vapour that was commonly used for animal experiments.

[6] Francis Gotch, [Letter to William Bayliss 17 November 1903], London, National Archives, UCL Science Collection, Bayliss Papers, MS.ADD.273/B1; Michael Foster [Letter to William Bayliss 20 November 1903], London, National Archives, UCL Science Collection, Bayliss Papers, MS.ADD.273/B1.

[7] Peter Mason, *The Brown Dog Affair: The Story of a Monument which Divided a Nation* (London Two Sevens Publishing, 1977), pp.18-20.

[8] [Unsigned], 'The Protomartyr of Antivivisection', p.1415.

[9] Lady Walburga Paget, 'Vivisection and Aesthetics', *Abolitionist*, 15 May 1901, pp.13-15.

next room to a shrieking cat', he remarked, 'nor address myself to the men who have been – there is no word for it'.[10] Here, as in Coleridge's speech, the practical difficulties of working in close proximity to vivisection barely veil the real problem: that animal experimentation unnerved the learned man or woman of feeling and impinged upon their sphere of influence. Physiological and artistic methods as well as personalities seemed entirely irreconcilable also. Ruskin insisted that pupils studying drawing should learn animal anatomy through careful observation rather than invasive dissections.[11] 'Man is intended to observe with his eyes, and mind', he claimed, 'not with microscope and knife'.[12]

Concerns that physiology would suffocate the artistic spirit were also articulated in relation to music and theatre. One article, originally written for the French magazine *Le Charivari*, before being translated for the *Medical Times* (November 1840) and then reprinted decades later in the *Home Chronicler* (July 1878), struggled to balance Mathieu Orfila's musical gifts with his practices as a prolific vivisector. Unable to see how the artistic and experimental impulse could coexist, the essayist resorts to a fictional doppelgänger: the eighteenth-century 'Father of Toxicology' must be 'two distinct individuals', a 'Jekyll and Hyde character' with 'two distinct phases'.[13] In the morning, he is at the École de Médecine in a savage and devilish state, 'his coat off, his throat bare […] cutting, slashing, emptying, jugulating, broiling, boiling, frying, hurrying from one furnace to the other' and resembling 'one of the witches in Macbeth'. Once the clock strikes four, he dresses like a gentleman to attend to a concert. Yet, of late,

> [t]he scientific man is throwing the singer into the shade; chemistry is absorbing the aria […] M. Orfila's voice has ceased to be heard. His only lute is applied to his crucibles; his only songs are of death and vengeance. Formerly M. Orfila was accustomed to give musical soirées, but now he only gives chemical matinees.[14]

Vocal performances are exchanged for performing operations, and the scientific space grotesquely parrots the theatrical as the packed halls of the École de Médecine 'resemble those of the Opera on a long-expected first night'.[15] These two worlds, according to antivivisection propaganda, cannot coexist: one must gain ascendancy. Men of culture and of science, like Orfila, threatened the movement's rhetorical politics.

[10] Quoted in Joan Abse, *John Ruskin, The Passionate Moralist* (London: Quartet Books, 1982), p.311.
[11] Jed Mayer, 'Ruskin, Vivisection, and Scientific Knowledge', *Nineteenth Century Prose*, 35.1 (2008), 200-22; Dinah Birch, '"That Ghastly Work": Ruskin, Animals, and Anatomy', *Worldviews*, 4.2 (2000), 131-45.
[12] Quoted in Mayer, 'Ruskin, Vivisection, and Scientific Knowledge', *Nineteenth Century Prose*, p.202.
[13] [Unsigned], 'A Vivisector "At Home"', *Home Chronicler*, 5.110 (27 July 1878), 55-56 (p.55). See also [Unsigned], [M. Orfila], *Medical Times*, 3 (11 November 1840), p.6; José Ramón Bertomeu-Sánchez, 'Classrooms, Salons, Academies, and Courts: Mateu Orfila (1787-1853) and Nineteenth-Century French Toxicology, *Ambix*, 61.2 (2014), 162-86.
[14] [Unsigned], 'A Vivisector "At Home"', p.55.
[15] Ibid.

At the beginning of the nineteenth century, members of the old elite – the clergy, aristocracy, and judiciary – patronised and practiced science. The gentleman amateur-scientist remained a symbol of heroic determination throughout the Victorian era, but rarely entered the experimental laboratory. Nicolaas Rupke notes that '[t]he new generation of professional scientists sought neither ecclesiastical preferment nor aristocratic patronage and thus they represented an encroachment on traditional estates of cultural authority'.[16] Jed Mayer adds that the 'immunity of laboratory space from legal and moral criticism' and of 'scientific discourses and practices from social criticism' prompted educated men and women of the middle and upper classes to protect their moral and social authority and to promote the value of their eclectic general knowledge.[17] Antivivisectionism, as he puts it, attempted to 'erode the increasing hermetic and imperturbable monologue of scientific specialisation with the dialogic values of social and aesthetic criticism'.[18] A steely power struggle was encoded within Coleridge's damp-eyed adulation of the fine arts.

Victorian vivisection debates were constructed around sets of dichotomies: religion v. science, heart v. head, good v. evil, spiritualism v. materialism, sentimentality v. heartlessness, and so on. These antithetical pairings informed the 'anti' identity and structured the movement's relationship with contemporary culture. As Chien-hui Li notes, this discourse appears stubbornly irreconcilable with Gillian Beer and George Levine's influential model which treats nineteenth-century literature and science as forming 'one culture' rather than two, with two-way traffic occurring between literary and scientific thinkers.[19] Nevertheless, experimental physiology and literary culture did overlap and interconnect in significant and surprising ways.

In fact, scientific and literary groupings were not as indivisible as both sides suggested. Some scientists opposed animal experimentation and a few literary and artistic figures were vocal supporters. For example, George Eliot directly funded physiological research while the novelist, poet, and playwright Eden Phillpotts denounced the NAVS as a 'meddlesome and mendacious organisation' and proposed celebrating the outcome of *Bayliss v Coleridge* by purchasing 'a little memento' for Bayliss and Starling.[20] Antivivisection organisations sometimes presented writers as more wholeheartedly committed to the cause than was probably the case. Thomas Hardy, for instance, was claimed by the movement as a committed antivivisectionist, but it is unlikely that he would have described himself in those terms. Certainly, he was keen to ameliorate animal suffering:

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[16] Rupke, 'Introduction', p.8. See also DeWitt, *Moral Authority*.
[17] Jed Mayer, 'The Vivisection of the Snark', *Victorian Poetry*, 47.2 (2009), 429-48 (p.430).
[18] Ibid., p.431.
[19] Chien-hui Li, *Mobilizing Traditions in the First wave of the British Animal Defense Movement* (London: Palgrave Macmillan, 2019), p.277; Gillian Beer, *Darwin's Plots: Evolutionary Narrative in Darwin, George Eliot, and Nineteenth-Century Fiction*, 2nd edn (Cambridge: Cambridge UP, 2000); George Levine, 'One Culture: Science and Literature', in *One Culture: Essays in Science and Literature*, ed. George Levine (Madison: University of Wisconsin Press, 1987), pp.3-34.
[20] Eden Phillpotts, 'Bayliss v. Coleridge [Letter to the Editor], *BMJ*, 2.2239 (28 November 1903), 1435.

he belonged to the Council of Justice for Animals (CJA), the RSPCA, and (like Jerome K. Jerome and Rudyard Kipling) had sent apologies for his absence from the critical 1903 NAVS meeting. However, Anna West has shown that Hardy's approach to humanitarianism and to vivisection in particular was not so straightforward.[21] His correspondence with Florence Henniker, a close friend and a fellow writer who sat on the executive committees of the NAVS and Our Dumb Friends League (ODFL), demonstrates his reticence to publicly oppose a practice which he suspected was a lesser evil than other animal cruelties and could even prove useful.[22] Hardy gently refused Henniker's request that he ask Émile Zola to produce a book on antivivisectionism.[23] Undeterred, she sent him Lind-af-Hageby and Schuartau's published account of what they had witnessed in London's laboratories: *The Shambles of Science: Extracts from the Diary of Two Students of Physiology* (1903). Hardy replied that although he had 'not yet really *read* [it]' the volume had been placed on his table for perusal by guests. '[E]verybody who comes into this room' he assures her, 'dips into it, &, I hope, profits something'.[24] As West notes, Hardy's stance 'illuminates an often-elided middle ground in the vivisection debates' which was squeezed by the movement's rhetorical politics.[25]

The reticence or ambivalence of certain authors notwithstanding, literature was deemed essential to the movement. Broadly speaking, political lobbying and pursuing prosecutions was initially the focus, before resources were rechannelled towards educational efforts, rescue work, and extra-parliamentary agitation. By activities including itinerant lectures, public meetings, and poster displays, antivivisectionists hoped to turn public opinion so that vivisection would be practically supressed before being legally prohibited. The movement employed a mixed-media strategy and exploited a range of temporalities – daily, weekly, and monthly – to convey its message and to attract supporters.[26] As Louise Logan notes, following the 1876 Act, the press was where this 'concealed practice was most visible to the public'.[27] A journalist herself, Cobbe understood the importance of reaching a general audience and keeping the topic active. She wrote prolifically, publishing more than 100 articles in periodicals and over 200 monographs on this subject.[28] Cobbe singlehandedly secured endorsements from Richard Holt Hutton, who co-edited and wrote leaders

[21] Anna West, *Thomas Hardy and Animals* (Cambridge: Cambridge UP, 2017), pp.174-76.
[22] Thomas Hardy, *The Collected Letters of Thomas Hardy*, ed. Richard Purdy and Michael Millgate, 7 vols (Oxford: Clarendon Press, 1978–1988), VII, 47.
[23] Ibid., p.148.
[24] Thomas Hardy [Letter to Florence Henniker 13 September 1903], in Thomas Hardy, *Thomas Hardy Selected Letters*, ed. Michael Millgate (Oxford: Oxford UP, 1990), p.160 [emphasis in original].
[25] West, *Thomas Hardy and Animals*, p.177.
[26] Susan Hamilton, '"[T]o bind together in mutual helpfulness": Genre and/as Social Action in the Victorian Anti-Vivisection Press', *Journal of Modern Periodical Studies*, 6.2 (2015), 134-60 (p.137).
[27] Louise Logan, 'Drawing Species Lines: Sensation and Empathy in Illustrations of Vivisection in the *Illustrated Police* News', *Victorian Periodical Review*, 53.1 (2020), 13-33 (p.16).
[28] Obenchain, *The Victorian Vivisection Debate*, p.9.

for the liberal weekly the *Spectator* from 1861 to c.1887, and John Morley who edited the *Fortnightly Review* from 1867 until 1882, and the *Pall Mall Gazette* from 1880 to 1883. Most newspapers, however, reported on vivisection but did not lead opinion. Partly because their cause was not correlated with partisan religious or political postures, antivivisectionists could exploit local and national newspapers.[29] The VSS proudly announced that members wrote letters and articles for 'every magazine or newspaper that will publish them'.[30] Additionally, the societies each produced high volumes of pamphlets, essays, and books, and set up association periodicals. This chapter is predominantly concerned with the literature that appeared in the latter.

The VSS's periodical, the *Zoophilist*, sprung up in response to the failed 1881 prosecution of David Ferrier. Edited successively by Charles Adams, Frances Power Cobbe, and Benjamin Bryan it carried 'a potpourri of anti-vivisection news'.[31] The *Zoophilist* only ceased publication five years ago, usually appearing monthly (only occasionally quarterly), and under slightly different titles.[32] The LAVS's *Animals Guardian* (1890-98), edited by H. J. Reid, was rebranded the *Monthly Record and Animals Guardian* (1900-01) and then the *Animals Guardian and Anti-vivisectionist* (1902-03). The independent *Home Chronicler* began in 1876 while the Cruelty to Animals Bill was being discussed in Parliament. Edited by Archibald Prentice Childs, former secretary to the VSS, it began as a weekly miscellany, coupling efforts to suppress vivisection with lighter and more varied matters of 'home' interest. 1878 saw the periodical undergo a number of changes: Ribton Cooke took over as editor – a position he maintained until the journal ceased publication in May 1882; prices were (briefly) slashed in half to 2d., and the periodical was re-branded to better reflect its purpose. First, a sub-title was added, and it became *A Journal Advocating the Total Abolition of Vivisection* before, in 1878, it became the *Anti-Vivisectionist* (nos.119-218). At the beginning of 1881, just over a year before publication ceased entirely, the *Anti-Vivisectionist* became a monthly (thereby falling in line with the other antivivisection periodicals discussed) and retailed at 6d. The BUAV's *Abolitionist* (1899-1948), edited by Rev. John Verschoyle, entered the scene as a voice for total abolition. Lastly, though it did not take a definite stance on the issue, the RSPCA's *Animal World: A Monthly Advocate of Humanity* (1869-1970) provides a broader animal protection context. Initially the only journal dedicated to animals, *Animal World* entered the public sphere at the height of periodical publishing.[33] A typical issue included articles on natural history; poetry; fiction; illustrations; sermons; book reviews; letters to the editor; notes from annual meetings; and reports

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[29] French, *Antivivisection and Medical Science in Victorian Society*, p.265.
[30] [Unsigned], 'Our Organisation', *Zoophilist*, 3.9 (1 August 1888), 139-40 (p.140).
[31] Ibid., p.88.
[32] For detailed information about the *Zoophilist*'s long publication history see Hamilton, '"[T]o bind together in mutual helpfulness"', pp.148-49.
[33] Anna Feuerstein, *The Political Lives of Victorian Animals* (Cambridge: Cambridge UP, 2019), p.76.

of animal cruelty convictions. More so than antivivisection association journals, *Animal World* was 'specifically liberal in its aims and format'.[34] Its goal to unite and to appeal to all animal lovers is reflected by its affordable price of tuppence.

The aforementioned list of antivivisection periodicals, though not comprehensive, represents the most impactful titles. Despite the policy differences that distinguished one society from the next, their periodicals shared many common features. Each carried a considerable amount of reprinted material. Letters, articles, and editorial matter were generously transposed from the general, religious, medical, and field-sports presses as well as from scientific and ecclesiastical works. Discussions about vivisection in the press which might otherwise be seen as isolated were given new resonance when bundled together.[35] Columns such as 'Our Cause in the Press', for instance, also helped *Zoophilist* readers keep up-to-date. Advocacy periodicals also offered a mixture of original essays, poems, stories, sermons, reviews, notices of meetings, analysis of government documents such as the *Report* of the Royal Commission, and some illustrations. Although (save for *Animal World*) vivisection remained the focus, related efforts such as slaughterhouse reform and anti-plumage campaigns also featured. Apart from for the odd book, pet-product, or humane-trap, advertisements were rare.[36]

Precise information on circulation and readership is unavailable, and scholars disagree about whether association periodicals attracted audiences beyond insular bands of activists.[37] As well as being available from publishers and booksellers, antivivisection periodicals were sent gratuitously to hotels, YMCAs, police stations, working men's clubs, and libraries, and lent from the society offices. The *Zoophilist*'s editor encouraged subscribers to leave old or extra copies in locations such as railway station waiting rooms, a strategy also proposed by readers of the *Anti-Vivisectionist* and *Animal World*.[38] Theoretically, a single copy could pass through multiple hands across the country. Short antivivisection poems and chapbooks were particularly strong candidates for dissemination, and this was encouraged by leaders of the societies. The BUAV's *Abolitionist*, for instance, recommended particular verses as 'well-suited to recitation' and notified subscribers when copies could be purchased directly from the poet.[39] Likewise, Linda Weeden's poem, 'The

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[34] Ibid., p.78.

[35] Hamilton, '"[T]o bind together in mutual helpfulness"', p.145.

[36] French, *Antivivisection and Medical Science*, p.264.

[37] Hamilton, '"[T]o bind together in mutual helpfulness"', p.138, p.135.

[38] A. P. G., '"The Animal World" at Railway Stations' [Letter to the Editor], *Animal World*, 14.162 (1 March 1883), 46; [Unsigned], 'The *Zoophilist*: A Proposal to Increase the Circulation', 7.9 (1 January 1888), 154; [Unsigned], 'Notes and Notices', *Zoophilist*, 7.12 (2 April 1888), 193; [Unsigned], 'The Circulation of the Anti-Vivisectionist', *Anti-Vivisectionist*, 7.185 (27 March 1880), 194-95; [Unsigned], 'The Gratuitous Distribution of "The Anti-Vivisectionist!"', *Anti-Vivisectionist*, 7.200 (10 July 1880), 436. Attempts to have the *Anti-Vivisectionist* distributed from W. H. Smith's railway bookstalls were unsuccessful.

[39] Walter Hadwen, 'Keep your eye on the death rates', *Abolitionist*, 12.26 (1 December 1926), 137-52.

Poet and the Vivisector' was sold by Enfield and District Anti-Vivisection League (EDAVL) quite literally by the dozen.[40] The 'almost incredible multitude of pamphlets and leaflets' produced by the societies were designed to be dispersed both indiscriminately and via personal networks, and these documents showed an awareness of a 'wider potential audience of readers – supportive and antagonistic – outside the society's membership'.[41] By halving their prices in 1878 and 1883 (from 4d. and 6d. respectively) editors of the *Home Chronicler* and *Zoophilist* sought to reach a more socio-economically diverse readership. The former was determined to advance 'the sacred cause of Anti-vivisection' by ensuring that 'all who really are interested in the question' may obtain the periodical 'at a reasonable rate'.[42] However, the intended outcome did not materialise, else the policy strained society finances. The *Home Chronicler*'s experiment was particularly brief: the original cost was reinstated at the beginning of 1879, and the *Zoophilist* also followed suit. All factors considered, it seems likely that most regular antivivisection periodical readers were upper and middle class.

The field of experimental physiology and the movement against it were shaped by a relatively small group of individuals. Editors, committee members, and other key figures in the antivivisection party seemed, as William Paton puts it, to be 'genuine prime movers rather than surface markers of already existing forces'.[43] 'Forceful, fearless, and effective' with an indomitable personality and unwavering convictions, Cobbe was foremost among them and the best known spokesperson for abolition.[44] Theodore Obenchain remarks that 'it was not so much that Cobbe became allied with the antivivisection movement. She practically birthed it in England'.[45] Although by the end of the 1880s she worked increasingly from behind the scenes, she had already made a deep and distinctive impression on the cause in its fledgling years.[46] Her former colleague, Coleridge, was the next best-known figurehead. Although the two leaders and their respective societies fell out over whether to pursue a policy of restriction or abolition, they shared many convictions and advocated for animals in similar ways. Personal rifts between key workers could cause instability inside and between the societies, with greatest animosity existing between the *Zoophilist* and the *Abolitionist* following Cobbe's acrimonious departure from the VSS. Association periodicals occasionally reported favourably on the activities of other societies, but each claimed some superiority; the *Abolitionist*, for example, repeatedly asserted that it was 'the most literary and

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[40] Linda Weeden, 'The Poet and the Vivisector' (Enfield: EDAVL, [n.d.]).
[41] Frances Power Cobbe *Life of Frances Power Cobbe, By Herself* (London: Swan Sonnenschein, 1904), p.671; Susan Hamilton, 'Reading and the Popular Critique of Science in the Victorian Anti-Vivisection Press', p.72.
[42] [Unsigned], 'Our Reduction in Price', *Home Chronicler*, 4.81 (5 January 1878), 8.
[43] William Paton, 'Epilogue', in *Vivisection in Historical Perspective*, ed. Nicolaas Rupke (London: Routledge, 1987), pp.316-64 (p.361).
[44] Mitchell, *Frances Power Cobbe*, p.1.
[45] Obenchain, *The Victorian Vivisection Debate,* p.10.
[46] Ibid., p.88.

high class journal devoted to the Cause'.[47] Although the *Home Chronicler* and *Zoophilist* initially competed for ascendancy, no official protest organ emerged. Of all of the titles discussed, the *Home Chronicler* is most distinctive; it did not saddle itself with the dry reporting of society matters such as financial planning and annual meetings, and its weekly rhythm complemented its more energetic fare. As Hamilton comments, with its busy front page, bolded cross-titles, and lack of contents page, the *Home Chronicler* presented itself as 'dippable', in stark contrast to the VSS's serious, even sombre, periodical. By contrast, the *Zoophilist* resembled a professional journal: it was unillustrated, visually dense, text-heavy, and organised in two-columns. Modelled on a 'gentleman's magazine' format, it devoted significant space to book reviews and political articles, although its narrow focus on vivisection deviated from magazine norms.[48] Notices often emphasised the duty of detailed and comprehensive reading and its format did not encourage casual browsing. Despite variances, however, antivivisection periodicals displayed common patterns of engagement with literary culture.

This chapter examines how literary writing helped to shape a common antivivisectionist identity, to articulate the movement's ideology, and to mobilise activists. It discusses the recruitment of living poets, traces the movement's efforts to gather together past writers into a humane genealogy, and explores how its leaders tried to establish a productive relationship between reading, feeling, and action. In so doing, it illuminates broader issues relating to literary writing and cultural authority. Despite venerating fiction and poetry for refining and expanding readers' tender emotions, antivivisectionist leaders needed to balance strong feelings with cool-headed analysis, and advocacy periodicals were an important arena in which to manage textual encounters and responses.

The mobilisation of contemporary poets

From the outset, antivivisectionist leaders keenly solicited the support of living writers.[49] One glance at Cobbe's widely-publicised first memorial to the RSPCA (1874) reveals a raft of signatures belonging to men and women of literary and artistic distinction, including Thomas Carlyle, James Anthony Froude, William Lecky, Leslie Stephen, Alfred Tennyson, Robert Browning, Dora

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[47] [Unsigned], '7th Annual Report of the BUAV' (London: BUAV, 1905), pp.1-22 (p.11). BUAV Archive, Hull, Hull History Centre, UDBV/3/1; [Unsigned], '8th Annual Report of the BUAV' (London: BUAV, 1906), pp.1-22 (p.10). BUAV Archive, Hull, Hull History Centre, UDBV/3/1.

[48] For a more detailed comparison of the *Zoophilist* and *Home Chronicler* see Hamilton, '"[T]o bind together in mutual helpfulness"'.

[49] Li, *Mobilizing Traditions,* p.305.

Greenwood, and Lewis Carroll.[50] Cobbe ignored Matthew Arnold's warning that she would not profit from an association with literary and artistic persons 'who will at once be disposed of as a set of unpractical sentimentalists', and she continued apace to recruit from this group.[51] Lansbury describes the VSS as being 'like an assembly of literary and social lions'.[52] It boasted the Earl of Shaftesbury as its President and Thomas Carlyle and Cardinal Manning as Vice-Presidents. Members and supporters included Charles Dickens, Wilkie Collins, Robert Browning, Benjamin Jowett, Charles Kingsley, and John Stuart Mill.[53] Alongside religious leaders and aristocratic patrons, the names of sympathetic novelists, essayists, and poets headed petitions and were conspicuously exhibited, often in bold or larger type, in association periodicals. An emerging culture of literary celebrity towards the end of the century augmented the benefits of literary patronage. Li comments that,

> a signature to a petition, a commissioned article or poem, a speech or mere presence at a meeting, or simply a letter of support from a famed writer, were all actively sought and published by the movement to add further moral legitimacy, cultural weight, and public appeal to their campaigns.[54]

Pamphlets, which were sometimes used as a 'primer' for new readers, often contained extracts from the poetry, essays, correspondence, and public statements of men and women of letters.[55] For instance, the BUAV pamphlet, 'Views of Men and Women of Note on Vivisection', featured humane words from Lewis Morris, Robert Buchannan, Mona Caird, R. D. Blackmore, Dr George Macdonald, Lewis Carroll, Leo Tolstoy, and Ouida.[56] Photographs of literary figures even hung on the walls of the VSS committee room, and Tennyson's photograph was prominently displayed at the NAVS's stall at the Church Congress of 1901 and 1902.[57] In 1911, the BUAV raised funds by selling wall calendars depicting humane literary figures.[58]

Numerous nineteenth-century writers busied themselves with contemporary moral and social problems, and some were attracted to the movement of their own accord. Many, however, were actively recruited. In its first issue, published in 1869, *Animal World* claimed to 'covet the aid

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[50] [Anon.], *Beginning the movement against vivisection: copies of letters from Eminent Men in reply to Miss Cobbe's Appeals*, *1874-1877*. BUAV Archive, Hull, Hull History Centre, UDBV/X/25/1.

[51] Matthew Arnold, [Letter to Frances Power Cobbe 8 January 1875], in *Beginning the movement against Vivisection: Copies of Letters from Eminent Men in reply to Miss Cobbe's Appeals*, *1874-1877*. BUAV Archive, Hull, Hull History Centre, UDBV/X/25/1.

[52] Lansbury, 'Gynaecology, Pornography, and the Antivivisection Movement', p.414.

[53] Ibid.

[54] Li, *Mobilizing Traditions*, p.305.

[55] Hamilton, 'Reading and the Popular Critique of Science', p.74.

[56] [Anon.], 'Views of Men and Women of Note on Vivisection' (London: BUAV), pp.1-15. BUAV Archive, Hull, Hull History Centre, U DBV/3/1.

[57] [Unsigned], 'The Rise and Progress of the Victoria Street Society', *Animals' Friend*, 2 (November 1895), 24-27. For photographs of the exhibition stalls see *Zoophilist and Animals' Defender*, 20-21 (November 1901 & November 1902).

[58] [Anon.], '13th Annual Report of the BUAV' (London: BUAV, 1911), pp.1-124 (p.12) BUAV Archive, Hull, Hull History Centre, UDBV/3/1.

of literary friends' and to be already 'encouraged by promises of help sent […] by well-known writers'.[59] Similarly, the Humanitarian League (HL) sent circulars to renowned literary men and women asking 'for their *thought*, for their outspoken *word*, in the cause of humanity'.[60] As the original cast of supporters passed away, leaders vied for new patrons. Lind-af-Hageby enthusiastically proclaimed that poets, artists, and writers were 'pioneers of humane thought and feeling', and 'knew humanity better than others'.[61] When she organised the 1909 International Anti-Vivisection and Animal Protection Congress, the Swedish activist contacted those 'prominent in the world of literature' including, to name a few, Leo Tolstoy, Maurice Maeterlinck, Pierre Loti, and Ella Wheler Wilcox. 'They gave their support most wholeheartedly', she reported, 'in letters strongly condemnatory of cruelty to animals'.[62] Coleridge, her colleague and champion during the 'brown dog affair', also sent speculative appeals to living writers. When the Second Royal Commission was announced in 1906, he reached out to the English novelist and poet George Meredith. 'I have no knowledge of your opinions on these matters' he wrote,

> beyond the conviction that, in common with all men of letters, from Dr. Johnson to Tennyson, you will abominate the torture of animals. When I was first drawn into this long combat we had the support of such great names as Ruskin, Manning, Carlyle, Browning, Tennyson, but they are gone […] I recognise that your name now stands alone. To you, therefore, I appeal to throw the weight of your splendid reputation on the side of mercy to animals.[63]

Meredith gave his public support, but, as Li puts it, he was 'the last of the Victorian literary giants surviving before the Great War' and would also die before the Commission reported its findings.[64]

As well as lending their names, writers contributed poems, stories, and essays to the cause. Christina Rossetti became an ardent antivivisectionist through her close friend Caroline Gemmer, who published poetry in *Animal World*.[65] Struck by 'that horror of horrors Vivisection' and believing the practice to be 'an especially abhorrent sin', Rossetti joined the VSS.[66] She read advocacy periodicals, procured signatures for antivivisection petitions, promoted an antivivisection bazaar in Brighton, and attended London meetings.[67] Occasionally, literary works were sold to

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[59] [Unsigned], 'Our Object', *Animal World*, 1.1 (1 October 1869), 8.
[60] [Unsigned], 'The Humanitarian League', *Vegetarian Messenger and Health Review*, 13 (June 1916), 128-30 (pp.129-30) [emphasis in original].
[61] [Unsigned], 'Lind-af-hageby v. Astor and others, report of the trial', *Anti-Vivisection Review*, 3 & 4 (1913), 272-88 (p.284).
[62] Ibid.
[63] [Unsigned], 'Correspondence. Mr Meredith and Vivisection', *Zoophilist and Animals' Defender*, 29 (June 1909), 24-25 (p.24).
[64] Li, *Mobilizing Traditions*, p.306.
[65] Emma Mason, *Christina Rossetti: Poetry, Ecology, Faith* (Oxford: Oxford UP, 2018), p.121.
[66] Ibid.
[67] Jan Marsh, *Christina Rossetti: A Literary Biography* (London: Faber and Faber, 2012), p.435; 'The Fine Arts Gallery at the Bazaar', *Anti-Vivisectionist*, 5.122 (23 November 1878), 247-48.

raise funds at auctions or bazaars, and Rossetti donated autographed copies of her poem 'A Word for the Dumb':

> Pity the sorrows of a poor old Dog
> Who wags his tail a-begging in his need:
> Despise not even the sorrows of a Frog,
> God's creature too, and that's enough to plead:
> Spare Puss who trusts us purring on our hearth:
> Spare Bunny once so frisky and so free:
> Spare all the harmless tenants of the earth:
> Spare, and be spared: – or who shall plead for thee?[68]

Rossetti was a devout believer and, like many of the poems discussed in this chapter, 'A Word for the Dumb' promulgates a Christian code of human-animal ethics based on the duties of stewardship. The regular staggered lines and the anaphora give the poem a hymnic quality and formally performs Rossetti's message of maintaining balance between all creatures. Her expansive description of the earth's 'harmless tenants' further challenges human-animal hierarchies and reminds the reader that he or she also occupies the earth by God's grace as represented by his covenant with Noah 'and every living creature' in the Arc after the flood.[69]

Rooted in early nineteenth-century anti-cruelty movements, antivivisectionism regularly framed the wrongs of animal experimentation in theological terms.[70] In a long speech supporting the antivivisection bill of 1876, the ardent evangelical Lord Shaftesbury reminded the House of Lords that '[t]he animals were His creatures as much as we were His creatures; and "His tender mercies", so the Bible told us, "were over all His works"'.[71] Likewise, Coleridge wrote in the *Fortnightly Review* (1882) that,

> to anyone who recognises the authority of our Lord […] the mind of Christ must be the guide of life. 'Shouldst thou not have had compassion upon these, even as I had pity on thee?' So he seems to say, and I shall act accordingly.[72]

Leading a Christ-like life required practising compassion for lower creation. Indeed, Christ was sometimes pictured as walking through the laboratory and weeping over his suffering creatures,

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[68] Christina Rossetti, 'A Word for the Dumb', in Christina G. Rossetti, *New Poems, Hitherto Unpublished or Uncollected*, ed. William Michael Rossetti (London: Macmillan & Co., 1896).
[69] Genesis 9. 12.
[70] Chien-hui Li, 'Mobilising Christianity in the Antivivisection Movement in Victorian Britain', *Journal of Animal Ethics*, 2.2 (2012), 141-61 (p.143).
[71] [Unsigned], 'Cruelty to Animals Bill (Second Reading)', House of Lords, *Hansard Parliamentary Debates: The Official Report* (15 July 1879, vol. 248, cols 425–33, quoted in cc 430-1) <https://api.parliament.uk/historic-hansard/lords/1879/jul/15/no-125-second-reading#column_425> [accessed 31 July 2020].
[72] Lord Chief Justice Coleridge, 'The Nineteenth Century Defenders of Vivisection', *Fortnightly Review*, 31.182 (February 1882), 225-37 (p.236).

and letters to Quaker magazines in the period often asked, rhetorically, whether Friends could imagine Jesus as a vivisector.[73]

Robert Buchanan's epic poem *The City of Dream* (1888), which gives a first-person account of Ishmael's pilgrimage to the heavenly city, portrays the reverse: Christ being vivisected. In book XIV, 'The City Without God', the pilgrim flees from one godless temple to the next. In one lofty but subterranean marble hall, a horrible scene awaits:

> One stood before a table wrought of stone
> And strewn with phials, knives, and instruments
> Of sharpest steel; before him, ranged in rows,
> On benches forming a great semi-moon,
> His audience throng'd, all hungry ears and eyes.
> The man was stript to the elbow, both his hands
> Were stain'd and bloody; and in the right he held
> A scalpel dripping blood; beneath him lay,
> Fasten'd upon the board, while from its heart
> Flowed the last throbbing stream of gentle life,
> A cony as white as snow. In cages near
> Were other victims – cony and cat and ape,
> Lambkins but newly yean'd, and fluttering doves
> Which preen'd their wings and coo'd their summer cry.[74]

After the rabbit's demise, a 'gentle hound' is next. The experimenter smiles, wipes his instruments, and 'Prepared the altar for fresh sacrifice'.[75] This vivisection is made more ghastly still when the pilgrim sees the dog's face, though 'hairy' and 'hound-like' become 'mysteriously humanised | Into the likeness of a naked Faun' whose sylvan shriek rouses babbling replies from all the nearby animals, both caged and free. These creatures, the pilgrim realises, also 'Had ta'en the pretty pleading human looks | Of naiad babes and tiny freckled fauns, | Sweet elves and pigmy centaurs of the woods!'[76] Through tears, he glimpses the scene again:

> I saw the faun strapt down upon the board,
> And though his feet were beast-like, his twain hands
> Were human, and his fingers clutch'd the knife!
> He shriek'd; I shriek'd in answer; and, behold,
> His head turn'd softly, and his eyes sought mine.
>
> Then, lo! A miracle – face, form and limbs,
> Changed on the instant – neither hound nor faun
> Lay there awaiting the tormentor's knife,
> But one, a living form as white as wax,
> Stigmata on his feet and on his hands,
> And on his feet and on his hands,

[73] Hayley Rose Glaholt, 'Vivisection as war: the "moral diseases" of animal experimentation and slavery in British Victorian Quaker pacifist ethics', *Society and Animals*, 20 (2012), 154–72 (pp.162-63).
[74] Robert Buchanan, *The City of Dream, An Epic Poem* (London: Chatto & Windus, 1888), p.319.
[75] Ibid., pp.319-20.
[76] Ibid., pp.320-21.

And on his face, still shining as a star,
The beauty of Eros and the pain of Christ!
I knew him, but none other mortal knew
Though every tiny faun and god of the wood,
Still garrulously babbling, named the name;
And looking up into the torturer's face
He wept and murmur'd, 'Even as ye use
The very meanest of my little ones,
So use ye me!' That other smiled and paused –
He only heard the moaning of a hound –
Then crushing one hand on the murmuring mouth,
He with the other took the glittering knife,
And leisurely began![77]

Extracts from this scene – often truncated to feature just the appearance of incarnate Christ rather than the unsettling shape-shifting from hound to faun – were reprinted with the permission of the poet in periodicals such as the *Monthly Record and Animals Guardian*.[78] In the poem, Christ's perfect sympathy is extended to animals who are also 'made in His image' and, in Buchanan's poem, by suffering for and as the sufferer, he literally becomes the sufferer.[79] His stigmata show this to be a further trial; the Lamb of God must endure another kind of crucifixion upon the altar of science. Although the animals of the poem are 'strapt down', the stigmata would recall gruesome reports of vivisectors driving nails through animals' feet or paws to immobilise them. Although vivisection and the crucifixion are mirrored in some regards, there is a fundamental difference. The former inverts the divine sacrifice because animal experiments exploit weaker beings (animals) for a higher and nobler race (mankind). Buchanan, who was described as a 'brave and whole-hearted friend' to the movement, also contributed an article to the *Zoophilist* in June 1899 in which he described vivisection as '[d]evilry done in the name of Science'.[80] As his and Rossetti's poems indicate, religion could frame the crusade and fan flames of moral indignation. Importantly, however, although the early movement drew liberally from Christian traditions, activists held various religious, social, and political principles. Some had theosophical and spiritualist beliefs and many Christian antivivisectionists held more radical ideas about human-animal relations than were theologically and culturally mainstream.[81]

[77] Ibid., pp.321-23.
[78] Robert Buchanan, 'The City without God', *Monthly Record and Animals Guardian*, June 1901, pp.66-67 in Li, 'Mobilizing Christianity', p.150.
[79] Isaiah 53.4. Isaiah 63.9. Matthew 8.17.
[80] [Unsigned], 'Robert Buchanan on Vivisection', *Edinburgh Evening News*, 4.8801 (6 July 1901), 5.
[81] See also William M. Abbott, 'The British Catholic debate over vivisection, 1876-1914: A common theology but differing applications', *British Catholic History*, 34.3 (2019), 451-77.

Poems by eminent writers were, unsurprisingly, believed to add moral, intellectual, and emotive clout to the cause, although they could also occasion critical demurrals. Alfred Tennyson and Robert Browning both served as Vice-Presidents of the VSS and wrote poems criticising vivisectors which were widely circulated throughout the movement. Tennyson's *The Princess* (1847) briefly referred to 'Those monstrous males that carve the living hound, | And cram him with the fragments of the grave'.[82] His poem 'In the Children's Hospital' (1880) illustrated the plight of an orphaned girl named Emmie and featured a vivisecting-doctor. The first-person speaker is a nurse who suspects that the new doctor who has 'big merciless hands' is '[f]resh from the surgery-schools of France' and could 'mangle the living dog that had loved him and fawned at his knee – Drench'd with the hellish oorali – that ever such things should be!'.[83] She keeps a prayerful vigil by Emmie's bedside, but the doctor (predictably, an atheist) is 'happier using the knife than in trying to save the limb' and determines to operate. The child peacefully passes away just before the fateful day arrives, however, and the nurse believes that God spared her from his 'ghastly tools'. The poem was reprinted and referenced in antivivisection periodicals including the *Zoophilist* and *Anti-Vivisectionist*. The latter welcomed the poem for showing that animal experimentation occasioned a 'loss of tenderness of feeling' and a 'decay of sympathy with suffering', and therefore should be excluded from medical training.[84] In this instance, the poem is printed in full with deep margins that make it the focal point of the page. 'If we have quoted more from this exquisitely beautiful and touching tale than is required for enforcing out text', the periodical remarked, 'we are sure our readers will gladly forgive us'.[85]

Browning wrote that he 'despise[d] and abhor[red] the pleas on behalf of that infamous practice vivisection', allowing the VSS to count him as one of their 'earliest supporters' and their 'staunchest friend'.[86] His poem 'Arcades Ambo' (1889), which is discussed in more detail in chapter three, was greeted as a 'delicate satire on the cowardice of the advocates of vivisection' and, in January 1890, it was splashed across the *Zoophilist*'s cover.[87] Twenty years earlier he had published 'Tray' (1870), a short, 'scathingly satirical' poem about a dog who rescues a beggar-child only to become the victim of a vivisector.[88] Reports of dogs saving drowning children littered the movement's periodicals and the wider British press.[89] The likeness of 'Bob', the Newfoundland

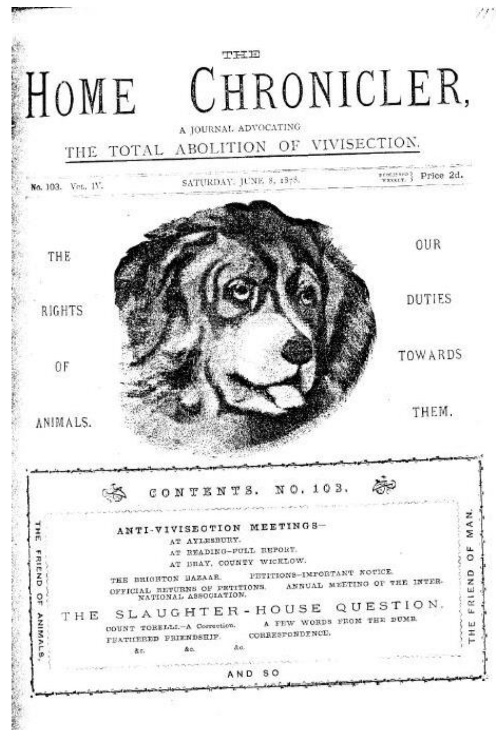
[82] Alfred Tennyson, *The Princess: A Medley* (London: Edward Moxon & Co., 1860), p.74.
[83] Alfred Tennyson, 'In the Children's Hospital', *Zoophilist*, 9.8 (2 December 1889), 169-76.
[84] Alfred Tennyson, 'In the Children's Hospital', *Anti-Vivisectionist*, 7.205 (15 December 1880), 516-17.
[85] Ibid., p.516.
[86] [Anon.], *The Browning Society's Papers* (London: The Browning Society, 1883), p.468; [Unsigned], 'Robert Browning', *Zoophilist* 9.9 (1 January 1890), 206.
[87] Robert Browning, 'Arcades Ambo', *Zoophilist*, 9.9 (1 January 1890), 192.
[88] Beryl Gray, *The Dog in the Dickensian Imagination* (London: Routledge, 2014), p.7.
[89] [Unsigned], 'The Faithful Dog', *Home Chronicler*, 55 (7 July 1877), 52; [Unsigned], 'Canine Sagacity', *Home Chronicler*, 57 (21 July 1877), 910.

dog of Edwin Landseer's painting *A Distinguished Member of the Humane Society* (1831), appeared regularly on the covers of periodicals such as *Animal World*, the *Anti-Vivisectionist*, and the *Abolitionist* (see Fig. 5-8). Indeed, Landseer's ability to convey his subject's individuality made him popular with the general public and a favourite of animal advocates.[90] J. Keri Kronin has recently argued that, from the late Victorian period, art and visual culture became increasingly used by animal advocacy groups to 'teach' love for animals.[91] As their engagement with Landseer's 'Bob' shows, antivivisection periodicals helped further this 'iconography of animal advocacy'.[92]

Figure 5. Sir Edwin Henry Landseer, 'A Distinguished Member of the Humane Society' (1831) [Oil on Canvas, 111.8cm x 143.5cm] Tate Collection, London.

Figure 6. SPCA logo [19th century]

[90] J. Keri Kronin, *Art for Animals: Visual Culture and Animal Advocacy, 1870-1914* (Pennsylvania: Pennsylvania State UP, 2018), p.31.
[91] Ibid., p.69.
[92] Ibid. See also Donald, Diana, *Picturing Animals in Britain, 1750-1850* (Yale: Yale UP, 2007).



THE

HOME CHRONICLER,

A JOURNAL ADVOCATING

THE TOTAL ABOLITION OF VIVISECTION.

No. 103. Vol. IV. SATURDAY, JUNE 8, 1878. Price 2d.

THE RIGHTS OF ANIMALS.

OUR DUTIES TOWARDS THEM.

CONTENTS. NO. 103.

ANTI-VIVISECTION MEETINGS—
AT AYLESBURY.
AT READING—FULL REPORT.
AT BRAY, COUNTY WICKLOW.

THE BRIGHTON BAZAAR. PETITIONS—IMPORTANT NOTICE.
OFFICIAL RETURNS OF PETITIONS. ANNUAL MEETING OF THE INTERNATIONAL ASSOCIATION.

THE SLAUGHTER-HOUSE QUESTION.

COUNT TORELLI.—A Correction. A FEW WORDS FROM THE DUMB.
FEATHERED FRIENDSHIP. CORRESPONDENCE.
&c. &c. &c.

AND SO

THE FRIEND OF ANIMALS.

THE FRIEND OF MAN.

Figure 7. *Home Chronicler*, 4.103, (8 June 1878).

THE

ABOLITIONIST.

THE JOURNAL OF

The British Union for the Abolition of Vivisection.

No. 8. Vol. VIII.] NOVEMBER 15, 1907. [Price 2d.

"A DISTINGUISHED MEMBER OF THE HUMANE SOCIETY."

DOGS AND THEIR DOINGS.

V.

Landseer's celebrated picture, "A Distinguished Member of the Humane Society," reminds us that as long ago as 1828 the Newfoundland dog occupied a foremost reputation as a preserver of human life.

Of course it is specially in the saving of life from drowning, that the Newfoundland has earned a name of honour for himself, and the cases are so numerous in which this work has been done with intelligence and devotion, that we find ourselves confronted with a wealth of well-authenticated instances that form a positive *embarras des richesses.*

Mrs. Lee—"Anecdotes of Animals"—records that her father, when a child, had sunk from sight in a deep pond, in which he was bathing. The child's clothes were shown to a large Newfoundland dog, which was much attached to him, and the dog was directed to the edge of the pond, when he at once plunged in, in search of his little friend, and soon found the unconscious body and brought it to land. The child was laid in a bed, and efforts made to restore animation, which the dog first quietly watched and then sought to assist by getting into bed with the child, and trying to warm the chilled body with his own.

The Newfoundland, being a splendid water dog, is exceptionally well endowed for saving life from drowning, and though he is first the friend of man, he is almost as eager to save the lives of his own kind when in a like predicament. Jesse—"Gleanings in Natural History"—records the performance of a Newfoundland which, of his own accord, saved a drowning spaniel, struggling in the Thames near one of the locks not far from Hampton Court.

But though water is his special element, the Newfoundland by no means confines his services to man or to dangers in the water. Jesse—"Anecdotes of Dogs"—tells us that a child had fallen down in a

Figure 8. Edwin Landseer, 'A distinguished member of the Humane Society', *Abolitionist*, 8.8, (15 November 1907).

Whereas 'Bob' was honoured by the Humane Society for his life-guarding services along the Thames, 'Tray' is said to be based upon an account of another stray, cruelly vivisected after

recovering a child from the river Seine in Paris.[93] The poem begins with an unnamed speaker calling for three bards to sing of heroic acts. The first two propose epic tales of human sagacity but are dismissed in favour of the third who offers a humble anecdote of canine courage. His tale is as follows:

> 'A beggar-child' (let's hear this third!)
> 'Sat on a quay's edge: like a bird
> Sand to herself at careless play,
> And fell into the stream. 'Dismay!
> Help, you the stander-by!' None stirred.
>
> 'Bystanders reason, think of wives
> And children ere they risk their lives.
> Over the balustrade has bounced
> A mere instinctive dog, and pounced
> Plumb on his prize. 'How well he dives!
>
> 'Up he comes with the child, see, tight
> In mouth, alive too, clutched from quite
> A depth of ten feet – twelve, I bet!
> Good dog! What, off again? There's yet
> Another child to save? All right!
>
> 'How strange we saw no other fall!
> It's instinct in the animal.
> Good dog! But he's a long while under:
> If he got drowned I should not wonder –
> Strong current, that against the wall!
>
> 'Here he comes, holds in mouth this time
> – What may the thing be? Well that's prime!
> Now, did you ever? Reason reigns
> In man alone, since all Tray's pains
> Have fished–the child's doll from the slime!'
>
> 'And so, amid the laughter gay,
> Trotted my hero off – old Tray –
> Till somebody, prerogative
> With reason, reasoned: "Why he dived,
> His brain would show us, I should say.
>
> 'John, go and catch – of, if needs be,
> Purchase – that animal for me!
> By vivisection, at expense
> Of half-an-hour and eighteenpence,
> How brain secretes dog's soul, we'll see!"'[94]

[93] [Unsigned], 'Browning's Poems of Adventure and Heroism', *Poet Lore*, 11 (1 January 1899), 403-06.
[94] Robert Browning, 'Tray', in *The Complete Works of Robert Browning, Volume XIV, With Variant Readings and Annotations*, ed. John Berkey, Paul Turner, Michael Bright (Chicago: Ohio UP, 2003), pp.249-50; [Unsigned], 'How Brain Secretes Dogs' Soul, We'll See', *Anti-Vivisectionist*, 6.147 (17 May 1878), 311.

Browning's dramatic monologues usually probe the mind of the lyric speaker, but the bard's interiority does not interest us; the reader's focus – like the bystanders' – is on the dramatic scene of 'a mere instinctive dog' battling the current. Attention then turns to a vivisector who is determined to understand Tray's behaviour by literally getting inside his mind. Here, the poem unexpectedly deviates from the familiar tale of canine virtue rewarded. Instead, the vivisector gets the last word and readers are left astounded at the ingratitude and foolishness that leads him to try to understand an animal's good-nature by cutting open its skull. In fact, as the abrupt ending indicates, the vivisector only succeeds in exposing his own nature, not Tray's. The notion that vivisectors were limited by experimental physiology's narrow purview was a common slight. As Cobbe argued in the preface to an 1899 collection of poems about dogs, researchers 'blinded over their microscopes' see nothing in a noble dog but 'so much bone and tissue "valuable for purposes of research"'. In contrast, poets, by virtue of their 'glorious insight', 'behold in those humble forms, Courage, Patience, Faithfulness unto death and after death'.[95] By elevating animal 'instinct' above the self-interested reasoning of the bystanders and the vivisector, the poem stages a confrontation between cool utilitarianism and passionate absolutism.

Antivivisectionist workers circulated poems about vivisection within and beyond the movement's press by including lengthy extracts in letters to editors. The Rev. F. O. Morris, a notable parson-naturalist and co-founder of the Plumage League, routinely reeled off lines from 'Tray' and 'In the Children's Hospital' alongside other antivivisection poems from 'men of "light and leading"' such as Sir Lewis Morris's 'In a German Laboratory' in his letters to the editor of the *Zoophilist*.[96] 'Tray' was even quoted in full by the American businessman Frederick F. Ayer in a strongly-worded antivivisection letter published in the *New York Tribune* in February 1908. There he presented Browning's poem, which he acknowledged 'yet may not be roundly familiar', as a sage prophecy about 'what might be in store for us, once we choke our sensibilities, [and] smother our soft compassions' in the name of science.[97]

References to animal experiments were not strictly necessary for Browning and Tennyson's works to be connected to the cause. The following passage from Tennyson's *In Memoriam* was recited at antivivisection lectures and was praised by the *Home Chronicler* for giving 'very beautiful

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[95] Frances Power Cobbe, *The Friend of Man; and his Friends, - The Poets* (London: George Bell & Sons, 1889), pp.8-10.

[96] F. O. Morris, 'The Cowardly Cruelty of the Experiments Upon Living Animals' [Letter to the Editor], *Zoophilist*, 9.9 (1 January 1890), 204-05.

[97] Frederick F. Ayer, 'Poem on Vivisection: Written by Browning as Protest Against "Infamous Practice"' [Letter to the Editor], *New York Tribune*, 12 Feb 1908, p.7.

expression' to the antivivisectionist warning that knowledge should not be fetishised, and must be placed within a broader moral and aesthetic context:[98]

> Who loves not Knowledge? Who shall rail
> Against her beauty?
> [… But]
> What is she, cut from love and faith,
> But some wild Pallas from the brain
> Of Demons?
> Let her know her place;
> She is the second, not the first.[99]

Browning's poem 'Childe Roland to the Dark Tower Came' (1855) was interpreted as an antivivisection parable by one critic writing for the *Zoophilist*.[100] Undeterred by the fact that Browning had rejected attempts to 'fit a meaning' to this work, the critic exclaimed:

> No meaning to all this? It is as clear as daylight to the student of the Torture Chambers of Science. The hoary cripple who misdirects the pilgrim in search of medical science is the Vivisecting Spirit; the ghastly landscape is the way of experimental physiology and pathology; the hideous face of Nature has been caused by the materialistic science which destroys in the vain hope of learning Nature's secrets, which torments the good creatures of God, and leaves the ghastly landscape strewn with wreck and ruthless ruin.[101]

'Had Mr Browning intended to write for us an allegory in aid of our crusade', claims the critic, 'a sort of Medical Pilgrim's Progress, he could scarcely have given the world a more faithful picture of the spiritual ruin and desolation which await the student of medicine who sets forth on the fatal course of an experimental torturer'.[102] To add credence to this reading, the essayist cross-references images and allusions in Browning's poem with accounts of contemporary experiments. This critical creativity encouraged allegorical readings which proved essential when activists were encouraged to 'read-into' vivisector's first-hand accounts. Nonetheless, antivivisectionists like Edward Berdoe, who was also a prolific Browning critic, were reprimanded for seeking to excavate the poet's moral or political convictions rather than truly understand him as *poet*.[103]

Browning and Tennyson's verses against vivisection, and the movement's reception of them, met with a mixed response in the wider press. The *Contemporary Review*, an affordable monthly which covered religious, political, and literary subjects, praised 'Tray' as an 'anecdote of canine devotion' and expressed confidence that 'Mr Browning's readers will not resent some acerbity of

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[98] [Unsigned], 'The Attempted Anti-Vivisection Lectures at Edinburgh Last Year', *Home Chronicler*, 4.90 (9 March 1878), p.149.
[99] A. P. Childs, [Letter to the editors of the *Scotsman* and *Daily Review* April 1877], reprinted in *Home Chronicler*, 4.90 (9 March 1878), 149. Lineation as in the letter. See also Alfred Lord Tennyson, *In Memoriam*, ed. William J. Rolfe (New York: Houghton Mifflin Co., 1895), CXIV, p.138, ll.1-20.
[100] Robert Browning, *Poems of Robert Browning* (New York: A. L. Burt, 1872), pp.219-26.
[101] [Unsigned], 'The Dark Tower of Science', *Zoophilist,* 10.12 (1 April 1891), 238-39 (p.238).
[102] Ibid.
[103] [Unsigned], 'New Books and Reprints', *Saturday Review*, 69.1797 (5 April 1890), 423-34.

zeal in his defence of the weaker but *"loving fellow creature"*.[104] The *Leisure Hour*, a popular general-interest weekly published by the Religious Tract Society, also welcomed Browning's 'daringly frank' opposition to vivisection as part of his 'anxiety to reach to the truth of things'.[105] In April 1888, the Browning Society, in which Berdoe played a significant role, considered the poet's treatment of this 'burning practical question'. Since it was 'the poet's function to sanctify this practical life' and direct moral thought, some suggested that Browning's 'indignant sarcasm on the subject of vivisection' was legitimated by his duty as a public man.[106] One member commented that 'vivisection extends the scalpel into other regions. In this age it is applied to brain and heart and soul; and here, too, the poet maintains the right of every soul to reserve'.[107] This could be a reference to the damaging impact of vivisection upon the experimenter's thinking and feeling faculties. Alternatively, the member is suggesting that the psychological and emotional being (as well as the physical body) would become subjected to laboratory study, a belief that inspired certain writers to consider literary labour in a laboratory framework (more on which in chapter 4). However, some critics complained that opposition to scientific practices fell outside poetry's proper remit. Writing for the *Fortnightly Review*, Grant Allen, whom Barbara Arnett Melchiori has suggested was pro-vivisection, scorned the political purpose of Browning's 'queer' poem.[108] Allen bemoaned the paucity of 'literature pure and simple' and complained that writers were becoming 'anxious to instruct and improve'.[109] Not only did novelists increasingly have a 'purpose', he decided, but poets also 'made their poetry ancillary to their political, social, or religious opinions'.[110]

Tennyson's 'In the Children's Hospital', attracted the same complaints and provoked a 'storm of disapprobation and protest' when it was published.[111] Only one London weekly, the *Saturday Review*, seemed favourable to the antivivisection message. It remarked that 'no one possessing any human, which generally includes "animal", sympathy' will think Tennyson's remarks 'one whit too strong'.[112] By contrast, the *New Review*, which carried 'personal journalism', dismissed Tennyson's 'hapless caricature' of the man of science and his 'facile' presentation of vivisection as part of his 'antiquated prejudices'.[113] 'The simple truth', it concluded, 'is that writing

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[104] Alexandra Orr, 'Mr Browning's Dramatic Idylls', *Contemporary Review*, 35 (May 1879), 289-302 (p.301, p.302) [emphasis in original].
[105] S. G. G., 'Browning and Tennyson', *Leisure Hour: An Illustrated Magazine for Home Reading*, 39 (February 1890), 231-34 (p.232).
[106] James Sutherland Cotton, 'Meetings of Societies', *Academy*, 83.6 (12 May 1888), 328-30 (pp.328-29).
[107] Ibid., p.329.
[108] Barbara Arnett Melchiori, *Grant Allen: The Downward Path which Leads to Fiction* (Rome: Bulzoni Editore, 2000), p.49; Grant Allen, 'Some New Books', *Fortnightly Review*, 26.151 (July 1879), 144-54 (p.153).
[109] Allen, 'Some New Books', p.153.
[110] Ibid.
[111] J. Cuming Walters, *Tennyson: Poet, Philosopher, Idealist* (New York: Haskell House, 1971), p.207.
[112] [Unsigned], 'Mr Tennyson's New Volume', *Saturday Review*, 50.1310 (4 December 1880), 708-09 (p.709).
[113] T. P. O'Connor, 'The New Journalism', *New Review*, 1, October 1889, pp.423-34; [Unsigned], 'Tennyson', *The New Review*, 10.58 (March 1894), 311-23 (pp.317-18).

of this sort is beyond the bounds of patience. Tennyson's negative criticism of his age cannot be taken seriously for one moment'.[114] *To-day*, a monthly periodical of scientific socialism, believed that 'In the Children's Hospital' merely confirmed that Tennyson was becoming 'more and more unscientific with increasing age and intolerance'.[115] In 1903, the controversy resurfaced when the *BMJ* published a letter by the renowned physician Samuel Wilks which suggested that Tennyson 'regretted ever having written' that 'abominable poem'.[116] 'If this be true', Wilks writes, 'it should be so stated in any new edition of his life or issue of his poems, although', he dryly adds, 'many of his admirers believe it would be better for his memory if this indiscreet production were altogether omitted'.[117] Tellingly, the Poet Laureate's opposition to vivisection, however outdated, remained concerning because 'In the Children's Hospital' was deemed sufficiently impactful to warrant attempts to discredit poem and poet years after its publication.

Contemporary writers offered the movement various benefits. They occupied important positions in antivivisection societies and produced literature-with-a-purpose which reached a wide audience. Tennyson and Browning's contributions to the cause were celebrated long after their deaths. Association periodicals published obituaries which noted the petitions they backed, the meetings they attended, and even reprinted private correspondence with the society's leaders to evidence their wholehearted support.[118] The lives and works of writers long deceased presented new opportunities for a movement keen to exploit the 'repository of ideational, moral and emotional resources' represented by literary traditions past and present.[119]

Building a humane canon

The birth of organised antivivisectionism coincided with a period of mass literacy thanks to new printing technologies and a series of education acts. Men and women of letters took up criticism with renewed urgency and gave advice on what and how to read.[120] Since many of its founders and patrons belonged to this class, the movement had a vested interest in protecting the social status of literary writers and critics, and its supporters were inclined to have faith in literature's moral and social function. The movement grasped the opportunity to guide readers towards literary works which echoed their principles and which presented 'an alternative vision of human and animal

[114] Ibid., 319.
[115] H. S. S., 'The Poet as Philosopher and Peer', *To-day*, 2 (February 1884), 135-47 (p.137).
[116] Samuel Wilks, 'Tennyson's Poem "In the Children's Hospital"' [Letter to the Editor], *BMJ*, 7 March 1903, p.576.
[117] Ibid.
[118] [Unsigned], 'Obituary: Robert Browning', *Zoophilist*, 9.9 (1 January 1890), 206.
[119] Li, 'Mobilizing Literature', p.28.
[120] Li, *Mobilizing Traditions*, p.286.

relations that was not based on utility'.[121] Humane genealogies flagged texts suitable for humane education and presented the longstanding accord between literary writing and animal protectionism as natural and necessary. By conveying that all true literary greats were, or would have been, 'anti's', the 'caring canon' fostered solidarity and encouraged activists to have courage in their ethical convictions. Furthermore, providing critical readings of literary works helped equip readers for the analytical tasks they were invited to undertake as literate critics of scientific material (a topic explored in the following chapter). As antivivisectionists earnestly uncovered and analysed close relations between writers and animals across genres, time-periods, and cultures, 'animal-centred criticism' was born.

'One cannot be a novelist', Robert Louis Stevenson proposed, 'and not like dogs'.[122] Although a seemingly frivolous view, the movement was adamant that all literary persons forged strong sympathetic bonds with animals. Stephen Coleridge, for instance, asserted that '[a]ll truly great poets teach sympathy towards animals' and the writer Sir Arthur Helps agreed that 'the greatest poets in all ages have been great admirers of animals […] their sayings would form a code of tenderness for these our fellow-creatures'.[123] Speeches on topic such as 'The Poets as Protectors of Animals' proved popular at animal protection meetings.[124] Cobbe even wrote two full-length humane anthologies to prove an essential link between humanitarianism and art. In *False Beasts and True* (1875) she examined representations of animals in the visual arts and in *The Friend of Man; and his Friends, - the Poets* (1889) – dedicated to the memory of her 'dear dog Dee' – she surveyed 'literary and artistic traces of the relationship between dog and man' across the centuries and all around the globe.[125] Some epochs proved particularly fertile, however. The period between 1750 and 1830 saw various literary, religious, and social factors converge which altered public manners and mores and sustained a climate in which humane sentiment flourished. In art and literature, animals began to evoke sympathy rather than scorn.[126] Romantic poets expressed a particular (some thought peculiar) gentleness towards animals and nature while sentimental novels featuring virtuous and sensitive heroes became popular from the 1760s. Unsurprisingly, studies of human-animal

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[121] Susan Hamilton, 'Introduction', in *Animal Welfare & Anti-Vivisection 1870-1910: Nineteenth-Century Woman's Mission*, ed. Susan Hamilton, 3 vols (London: Routledge, 2004), I, xiv-xvlii.
[122] Quoted in Chris Danta, 'The Metaphysical Cut: Darwin and Stevenson on Vivisection', *Victorian Review*, 36.2 (2010), 51-86 (p.56).
[123] Stephen Coleridge, *An Evening in My Library Among the English Poets* (London: John Lane, 1916), p.98; Arthur Helps, *Some Talk about Animals and Their Masters* (London: Strahan & Co., 1873), p.106.
[124] W. E. A. Axon, 'The Poets as Protectors of Animals', *Vegetarian Messenger and Health Review*, 7 (June 1910), 189-93.
[125] Frances Power Cobbe, *False Beasts and True, Essays on Natural (and Unnatural) History* (London: Ward, Lock and Tyler, 1876); Cobbe, *The Friend of Man*, p.9.
[126] Ritvo, *The Animal Estate,* p.3.

relations usually focus on late eighteenth- and early nineteenth-century literature when discussing the development of more modern sensibilities.[127]

Victorian animal protectionists celebrated writers' sentimental attachment to their pets, and Romantic literature often contained suitably touching examples. Eulogies or devotional poems were popular. *Animal World* published Robert Southey's poem 'On the Death of a Favourite Spaniel' (1796) and Lord Byron's 1808 poetic epitaph for his beloved Newfoundland Boatswain, who died of rabies.[128] The dogs of Elizabeth Barrett Browning, Mortimer Collins, Charles Lamb, Mary Russell Mitford, Alexander Pope, Charles Read, and Sir Walter Scott were also afforded mentions in this periodical.[129] Human-canine companionship was in vogue, but unusual human-animal bonds such as William Cowper's fondness for his hares, Charles Turner's affection for nightingales and window-flies, and Charles Kingsley's love for dogs, horses, toads, worms and birds, also drew interest.[130] In 1885, apparently in response to popular demand, *Animal World* continued Arthur Reade's essay series 'The Pets of Authors'.[131] Reade's compilation of heart-warming quotations and anecdotes from writers' lives, letters, and works must have provided light relief from the upsetting reports of cruelty contained elsewhere in the periodical. Tellingly, he pays special attention to human-animal interactions during moments of literary production. Discussing Oliver Goldsmith, Reade presents an anecdote about the eighteenth-century writer 'in the double occupation of turning a couplet and teaching a pet dog to sit upon his haunches'. In this instance, the genial interaction between poet and pet inspired the lines: 'By sports like these are all their cares beguiled; | The sports of children satisfy the child'.[132] Elsewhere too, Reade lingers upon encounters between master and dog within romanticised sites of literary labour such as the study and the writing desk.[133] Thereby, he suggested that animals engender a creative spirit and that writers were often, if not always, animal lovers. The literary critic Frederick Harrison made the connection explicitly in his 1904 lecture for the HL. He held up Homer's depiction of Argus (Ulysses faithful dog from the *Odyssey*), Cowper's hares, and Burn's field-mouse to prove that 'the best poetry and thought of the world has been strengthened and inspired by right sense of the claims of brutes, the sympathy and intellect of animals, and Man's communion with the animals'.[134]

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[127] David Perkins, *Romanticism and Animal Rights* (Cambridge: Cambridge UP, 2003); Christine Kenyon-Jones, *Kindred Brutes: Animals in Romantic-Period Writing* (Aldershot: Ashgate, 2001); Peter Heymans, *Animality in British Romanticism: The Aesthetics of Species* (London: Routledge, 2012).

[128] [Unsigned], 'Southey on the Death of a Favourite Spaniel', *Animal World*, 8.96 (1 September 1877), 140; J. McGrigor Allan, '"Only a Cur!"', *Animal World*, 15.173 (1 February 1884), 24.

[129] [Unsigned], 'Remarks on Animals by Various Authors', *Animal World*, 16.187 (1 April 1885), 60.

[130] Andrew James Symington, 'Charles [Tennyson] Turner's Sonnets', *Animal World*, 6.68 (1 May 1875), 70-71 (p.71).

[131] Arthur Reade, 'The Pets of Authors', *Animal World*, 16.185 (1 February 1885), 27-29.

[132] Ibid., p.28.

[133] Ibid., p.29.

[134] Frederick Harrison, 'The Duties of Man to the Lower Animals', *Humane Review*, 5 (1904), 1-10 (p.10).

Laying claim to literary giants like Homer and William Shakespeare required rather speculative criticism. The *Home Chronicler* based its case that 'the grand old father of poetry' loved animals solely upon his portrayal of Argus.[135] *Animal World* went a little further, compiling examples from the *Iliad* to argue that the ancient poet was 'greatly indebted to the animal world'.[136] This critic adopted the language of vivisection when remarking that Homer's epic would be 'sorely mutilated were the allusions to animals cut out'.[137] Shakespeare's life and works received extended attention in *Animal World*. In 1886, a five-part series attempted to recover the bard's attitude by analysing animal imagery in his plays, and by piecing together his opinions about contemporary practices such as bear-baiting.[138] Although the periodical's monthly rhythm allowed some time to find and digest relevant passages, this kind of work was painstaking; Audrey Yoder has counted more than four thousand references to animals in Shakespeare's works, and concludes that the majority of these expressed human 'sensuality, stupidity, and cruelty'.[139]

Indeed, in part three of 'Shakespeare and the Animal World', the critic concedes that Shakespeare's animal related similes 'are not, as a rule, sympathetic', but reassures the reader that it is impossible to deduce his own beliefs from the descriptions of stuffed alligator and tortoise shells in *Romeo and Juliet* (c. 1595-97), and the animal metaphors of *Macbeth* (1606) or *Henry V* (1599).[140] Nonetheless, when the plays contain characters or imagery sympathetic to animal life, such as the banished Duke's concern for the hunted deer in *As You Like It* (1603), this is presented to suggest Shakespeare's personal sensitivity to animals.[141] Indulging in pure conjecture, the critic reads the Stratford portrait physiognomically and deduces that 'the placid, benevolent brow, the expression of gentle humour in the lips […] could scarcely have belonged to a man of cruel or harsh instinct'.[142] Therefore, although he 'might not be much disturbed at the cruel customs of his contemporaries', Shakespeare's 'humanity towards them is much in advance of his time' and he 'would hardly be likely, for his own part, to ill-treat his dog or horse, or to thoughtlessly perpetuate any act of downright cruelty'.[143] Given his exposure to the everyday cruelties of Elizabethan England, the critic warns that one cannot reasonably 'expect from Shakespeare that exquisite sensibility and regard for the value of the inferior creatures which prompted Coleridge to tell the

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135 [Unsigned], 'The Dog Argus', *Home Chronicler*, 79 (22 December 1877), 1255.
136 E. A. W., 'Homer and the Animal World', *Animal World*, 6.70 (1 July 1875), 105-06 (p.105).
137 Ibid.
138 See also Antony Taylor, 'Shakespeare and radicalism: The Uses and Abuses of Shakespeare in Nineteenth-Century Popular Politics', *Historical Journal*, 45.2 (2002), 357-79.
139 Audrey Yoder, *Animal Analogy in Shakespeare's Character Portrayal* (New York: King's Crown Press, 1947), p.69.
140 P. E. N., 'Shakespeare and the Animal World—III', *Animal World*, 17.201 (1 June 1886), 91.
141 P. E. N., 'Shakespeare and the Animal World—V', *Animal World*, 17.207 (1 December 1886), 179.
142 Ibid.
143 P. E. N., 'Shakespeare and the Animal World—III', p.91; P. E. N., 'Shakespeare and the Animal World—V', p.179.

story of the slain albatross'.[144] Elaborating on the humane sentiments ushered in by Romantic writers, the essayist suggests that the bard would have been bemused by Cowper and his hares and adds that it would be unreasonable to expect even 'the colossal genius of the sixteenth century' to 'touch the same chords' as metaphysical dreamers like Wordsworth.[145] Nonetheless, Shakespeare is credited for 'teaching' kindness to animals though writing 'sympathetic words', including the lines, 'In corporeal sufferance | The poor worm that we treat on | Feels a pang as great as when a giant dies'. These, he suggests, were not composed merely for their beauty 'but to impress on us a great and important truth […] that of kindness to animals'.[146] Yet, the final 'Animal World' essay seems to shy away from deliberate authorial intention, remarking that,

> like a true artist, without apparent design, and perhaps unconsciously to himself, does Shakespeare teach us humanity. Not by direct precept and exordiums, for he teaches nowhere in this fashion, but by subtly linking our imagination and feeling to thoughts of their beauty, their gentleness, or courage, the innocent lives they lead, their claims upon our compassion, and the many wholesome lessons they teach us […]. They subserve the purpose of art, and he, in return, sheds on them the clear, mellow light of his genius, whereby we see more clearly the relation in which they ought to stand in our regard.[147]

Although this passage suggests that 'the true artist' teaches humanity by subtly extending sympathetic appreciation for animal life, antivivisectionists certainly did not shy away from the powerful didactic potential of literary works.

Humane education for children and adolescents was promoted across Victorian animal protection movements and underlined a common faith in literature's power to teach 'lessons of love, wisdom, beauty, goodness, and truth'.[148] The Bands of Mercy and RSPCA adopted this as a core part of their mission. *Animal World* advertised humane books, encouraged schools to give them as prizes, and also carried age-appropriate stories, poetry, and puzzles in its pages.[149] Tales such as 'Turn and Turn About – A Story for Boys' and 'A Sad, Sad Story (Told Chiefly for Little Folks)' explicitly targeted a particular age and gender while others tackled a specific topic.[150] For example, a poem titled 'Treatment of Canaries – A Few Plain Rules' provided exactly what one would expect: instructions on proper care for canaries.[151] In 1892, the *Animals Guardian* established

144 P. E. N., 'Shakespeare and the Animal World—V', p.179.
145 Ibid.
146 P. E. N., 'Shakespeare and the Animal World—II', pp 66-67; P. E. N., 'Shakespeare and the Animal World—III', p.91.
147 P. E. N., 'Shakespeare and the Animal World—V', p.179.
148 Symington, 'Charles (Tennyson) Turner's Sonnets', pp.70-71.
149 [Unsigned], 'Notices of Books', *Animal World*, 1.1 (1 October 1869), 12.
150 J. B., 'A Sad, Sad Story (Told chiefly for Little Folks), *Animal World*, 6.66 (1 March 1875), 35; L. P., 'Turn and Turn About: A Story for Boys', *Animal World*, 5.57 (1 June 1874), 88-89.
151 Caroline M. Gemmer, 'Treatment of Canaries: A Few Plain Rules', *Animal World*, 5.56 (1 May 1874), 91; Mason, *Christina Rossetti,* p.121.

a 'Young Folk's Corner' containing short stories and poems for the entertainment and education of children and young people.[152] One imagines that these were often read aloud by caregivers.

The movement hoped that literature would inspire, improve, and instruct adult readers too. Contributors to advocacy journals mined texts for pithy ethical exhortations which captured humanitarian sentiments. By repeatedly reprinting a limited number of these, the movement's press created a powerful set of moral maxims that fed 'the sentimental philanthropy of the reader' and fostered solidarity within and across the societies.[153] The following lines from *The Merchant of Venice* were printed on the cover of each issue of the *Animals Guardian*:

> You have among you many a purchas'd slave
> Which like your asses and your dogs and mules,
> You use in abject and in slavish part
> because you bought them.

Animal Word selected the antepenultimate stanza of Coleridge's 'Rime of the Ancient Mariner' as their motto: 'He prayeth best, who loveth best | All things, both great and small'.[154] These lines appealed widely and were lauded for being suitable for recitation in schools.[155] One correspondent even suggested that the passage be plastered on every classroom wall in the country.[156] Tennyson's assurance that 'nothing walks with aimless feet' and 'that not a worm is cloven in vain' was also frequently called upon to stress the inherent value of all God's creatures.[157] Likewise, Cowper's adage that he would not enter in his list of friends any man who heedlessly stepped upon a worm was often reprinted, along with the following verse:

> The man of kindness to his beast is kind,
> But brutal actions show a brutal mind;
> Remember, He who made thee made the brute,
> Who gave thee speech and reason, made him mute;
> Silent he suffers; but God's watchful eye
> Beholds the cruelty; He hears his cry.
> He was designed by servant and thy drudge;
> But know that his Creator is thy judge.[158]

[152] See F. H. Suckling, 'Practical Lessons in Humanity for Children', *Animals Guardian*, 1.2 (November 1890), 17-18; Mrs Theodore Russell Monro, 'The Repression of Cruelty by Means of Humane Education', *Animals Guardian*, 1.5 (February 1891), 51-52; Mary Howitt, 'Our Four-Footed Friends', *Home Chronicler*, 4.95 (13 April 1878), 229-30.

[153] Joshua Toumlin Smith, *Government by Commissions Illegal and Pernicious* (London: S. Sweet, 1849), p.172.

[154] [Unsigned], 'Cullings from Poets', *Animal World*, 17.206 (1 November 1886), 170.

[155] Coleridge, *An Evening in my Library*, p.84, p.98.

[156] [Unsigned], 'A Few Hints to Teachers by a Teacher', *Animal World*, 18.211 (1 April 1887), 54; [Unsigned], 'Exeter Branch of the RSPCA', *Animal World*, 6.66 (1 March 1875), 45-46 (p.45).

[157] [Unsigned], 'Choral Service at St Michael's Folkestone, in aid of the RSPCA', *Animal World*, 16.195 (1 December 1885), 185.

[158] See for example Thomas Greaves, 'Cruelty to Animals and the Veterinary Surgeon's Duty', *Animal World*, 13.157 (2 October 1882), 147-38 (p.147); G. F. Goddard, 'The Truth Must be Faced' [Letter to the Editor], 4.95 *Home Chronicler* (13 April 1878), 235-36 (p.236); H. Locke, 'Letter to the Editor of the *Stroud Journal*', *Home Chronicler*, 5.107 (6 July 1878), 11.

The limited length and couplet form lends itself to memorisation and helps to impress lower creation's claims upon the reader who can truly 'remember' and 'know' the ethical truths that the poem conveys. Supporters recited these pithy literary maxims in letters to editors where they were often framed as 'lessons'.[159] They even functioned as ready-made retorts and were presented as legitimate counter-arguments to scientific claims during verbal or written exchanges. For example, the *Anti-Vivisectionist* declared that Tennyson's 'In Memoriam', 'supplies an answer' to the fallacy that animals experienced limited pain.[160] Likewise, one letter to the editor of the *Zoophilist* countered suggestions that animals, being mute, were incapable of thought by including a poem about a pet cat called 'Muff'.[161] Activists touted their literary credentials and denigrated scientists and medical men for their ignorance. In a discussion of how medical practitioners justified their own brutality by comparing it to nature's necessary cruelty, the *Zoophilist* sneeringly remarked that,

> [n]o doubt if the general practitioner were – what he very seldom is – a man of literary culture, he would quote Tennyson against the anti-vivisector and say that – 'Nature red in tooth and claw | With ravine, shrieks against his creed.' But this sort of thing is beyond him.[162]

While Romantic poets produced plenty of maxims which affirmed antivivisectionist values, other writers were trickier to fit into a humane canon. Sometimes their lives and works required extensive editing and re-working to evidence the special relationship between literature and animal protectionism. Securing this intellectual connection was only part of the task, imaginative literature needed to be exploited for its ability to 'move' readers' hearts.

From feeling to action

Antivivisectionists believed that art engendered strong sympathetic feelings from which ethical actions followed. *Animal World* extolled literature's power to 'deeply plant in the heart, that love [which] will make cruelty impossible' and later asserted:

> Nothing is more common among humanitarians than the expression of a pious hope that English literature may be pressed into our service, and especially that books [...] should help to awaken public opinion.[163]

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[159] See F. O. Morris, 'Sport and Slaughter' [Letter to the Editor of *The Times*], *Home Chronicler*, 4.87 (16 February 1878), 100; [Unsigned], 'Shooting Pigeons From Traps', *Animal World*, 13.159 (1 December 1882), 180.
[160] [Unsigned], 'An Interesting Anecdote-Affection in an Elephant', *Anti-Vivisectionist*, 6.150 (7 June 1879), 352.
[161] S. E. Clark, 'The Science of Thought' [Letter to the Editor], *Zoophilist*, 7.2 (1 June 1887), 26-27.
[162] [Unsigned], 'Notes and Notices', *Zoophilist* 10.11 (1 March 1891), 208.
[163] [Unsigned], 'Our Object', p.8; [Unsigned], [Notice], *Animal World*, 28 (1897), 190, quoted in French, *Antivivisection and Medical Science in Victorian Society*, p.257.

Although the belief that poetry and fiction could enlarge charity was hardly unique to antivivisectionism or even animal protectionism, literature seemed uniquely fitted to combat the emotional wastage caused by animal experimentation. In his discussion of Robert Louis Stevenson's posthumously published antivivisection fable 'The Scientific Ape' (2005), Danta demonstrates that for Stevenson, amongst others, 'the act of vivisection incapacitates – or anaesthetizes – ethical thinking by disavowing the similarity of animal life' since it required the experimenter to 'sever his ontological ties with the rest of the animal kingdom'.[164] By powerfully affirming the metaphysical connection between human and animal, literature had the opposite effect. 'The novelist is to the aesthetic, to sensation', concludes Danta, 'as the vivisectionist is to the anaesthetic, to the lack of sensation'.[165] Certainly, antivivisectionist leaders were fixated on using literature as a tool to connect reading, feeling, and action.

'Beyond legislation and public functions', wrote Cobbe with characteristic self-assurance, 'the largest influence which sways the emotions of all educated people is undoubtedly Literature'.[166] In her essay 'The Education of the Emotions' (1888) published in the *Fortnightly Review*, she claimed that,

> [t]he power of Books to awaken the most vivid feelings is a phenomenon at which savages may well wonder. The magic which enables both the living and the long departed to move us to the depths of our being by the aid only of a few marks on sheets of paper is a never-ending miracle. It were vain to attempt to do any justice to the subject, or show how the contagion of piety, patriotism, enthusiasm for justice and truth, and sympathy with other nations and other classes than our own, is carried to us in the pages of the poets and historians and novelists of the world. Pitiful it is to think how narrow must be the scope of the emotions of any man whose breast has never dilated nor his eyes flashed over the grandeur of the book of Job, over Dante, or Shakespeare, and whose heart has never been warmed and his sympathies extended, backwards through time and around him in space, by Walter Scott, and Defoe, and Dickens, and George Eliot.[167]

Ironically, Cobbe presented a euro-centric perspective as she extolled literature's ability to radically expand sympathies with other races, classes, and nations. Although, like many antivivisectionists, she was sceptical of evolutionary science, Cobbe's conception of feeling was informed by a Darwinian model which involved widening circles of affection from family, to nation, to mankind and finally to other species.[168] This idea allowed the movement to recast natural hierarchies to include 'emotional sensitivity as a category of evolutionary status' and thereby helped decry scientists who gained 'knowledge at the expense of sympathy […] and intellectual power at the

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[164] Ralph Parfect, 'Robert Louis Stevenson's "The Clockmaker" and "The Scientific Ape": Two Unpublished Fables', *English Literature in Transition, 1880-1920*, 48.4 (2005), 387-403; Danta, 'The Metaphysical Cut', p.62, p.59.
[165] Danta, 'The Metaphysical Cut', p.60.
[166] Frances Power Cobbe, 'The Education of the Emotions', *Fortnightly Review*, 43 (February 1888), 223-36 (p.231). Alongside literature, Cobbe also venerates theatre, music, art, and nature.
[167] Ibid.
[168] Boddice, *The Science of Sympathy,* p.66.

expense of compassion'.[169] In this scheme, the means of promoting and refining tender feelings – namely art, music, and literature – had a definite social and perhaps even 'scientific' function.

Cobbe presented reading as an embodied act. Her emphasis upon the reader's swelling chest and flashing eyes connected mental, emotional, and physical activation. Imaginative literature 'moved' in a double sense: by opening the reader's heart it excited philanthropic acts. As Cobbe put it, emotions were 'the most largely effective springs of human conduct' and should not be divorced from charitable acts.[170] In her essay 'Pity: Genuine and Spurious', first published in the *Forum* (1890) and then in the *Zoophilist* (1891), Cobbe distinguished virtuous pity which has a serious humanitarian purpose from pity which is self-absorbing and maudlin. She wrote that,

> real pity is not only a virtuous sentiment; it is that sentiment without which no social virtue of beneficence can be rightly carried out. For any man to stretch his hand to relieve his brother's wants without sympathising with him is an insolence; [...] The heartfelt pity is the acceptable sacrifice; the physical benefits which it brings in its hand only carry out its meaning.[171]

Just as charitable acts should be motivated by genuine benevolence, ethical and aesthetic matters go hand-in-hand. Feeling and doing needed to be connected in order to ward off the imputation that activists enjoyed the sensations that vivisection evoked. At the IMC, Sir John Simon, a noted surgeon, pathologist, and public health officer, gave a rousing speech defending medical science in which he distinguished between the anti- and pro-vivisectionist world views. 'In certain circles of society', he claimed, 'aesthetics count for all in all'. 'Our own verb of life', he continued, addressing fellow delegates,

> is εϱγαζεσθαι [to work], not αισθανεσθαι [to feel]. We have to think of usefulness to man. And to us, according to our standard of right and wrong, perhaps those lackadaisical aesthetics may seem but a feeble form of sensuality.[172]

Cobbe also warned against prioritising artistry over morality by referring to Tennyson's poem 'The Palace of Art' (1832) and the French physiologist Claude Bernard's *Introduction to the Study of Experimental Medicine* (1865). Bernard had claimed that the experimenter should be so 'possessed and absorbed by the scientific idea that he pursues' that he 'does not hear the cries of the animals' nor 'see[s] their flowing blood'.[173] Cobbe echoed this infamous statement when she wrote that literary aesthetes could become 'absorbed in pleasure, in building a "palace of art"', and so become 'deaf to the cries of pain; blind to the blood and tears'.[174] Thus, she inferred that writers who

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[169] Mayer, 'The Vivisection of the Snark', p.434.
[170] Cobbe, 'The Education of the Emotions', p.223.
[171] Frances Power Cobbe, 'Pity, Genuine and Spurious', *Forum*, 10 (December 1890), 423-32; Cobbe, 'Pity, Genuine and Spurious', *Zoophilist*, 10.11 (1 March 1891), 210-11 (p.210).
[172] John Simon, "An Address delivered at the opening of the Section of Public Medicine," *BMJ*, 6 August 1881, pp.219–23 (p.223).
[173] Bernard, *An Introduction to the Study of Experimental Medicine*, p.132.
[174] Cobbe, 'Pity, Genuine and Spurious', p.210.

abandon the ethical side of their practice begin to resemble animal experimenters. Both figures detach from their subject matter in order to worship at false altars, whether of science or of art.

Cobbe used medico-scientific imagery to describe emotions. Feelings were 'contagion' that could either pass between hosts 'slowly and imperceptibly' or be 'communicated with electric velocity [as] one man conveys to another as if it were a flame, the emotion which burns in his own soul'.[175] She noted that 'base or bad' feelings were also 'contagious' and that 'fictitious feeling' produced 'superficial sensibility' and exaggerated expressive modes. Nonetheless, she maintained that it was worse to repress feelings until they die out for want of 'air' and 'exercise'. Although she wrote that the 'emotion-motor nature' (a term borrowed from George Rolleston, Oxford's Professor of Anatomy and Physiology) was most active when 'men are massed together' and come into '*physical* contact', distantly 'touched' readers could also become 'fresh propagators'.[176] This complicates Paul White's claim that Cobbe 'drew upon a tradition of writing in which feeling arose from an affective inner state, by means of a natural process which could not be externally manipulated'.[177] By suggesting that emotions were more easily transmitted if '*caught* from another mind possessed of the same feeling' than springing in a solitary breast, she highlighted the potential of humane literary works.[178] Despite the inter-personal acrimony that developed, Cobbe and Coleridge both loved literature and held similar views about its function within the movement and, more broadly, within contemporary culture.[179] Coleridge also urged writers to 'advance from the communication of pleasure to the condemnation of evil'.[180] He also worried about the growth of 'superficial sensibility', especially in an age when writers increasingly 'withdrew all veils from their emotions, threw away all the shackles of reserve, and poured their sobs and ecstasies upon us'.[181] Yet, he welcomed that literary masters could exploit the new license for emotional expression to 'take forcible possession of our affections' and draw readers into a greater emotional intimacy with the subject of their work.[182]

Cobbe's discussion of emotional 'contagion' illuminates the crux of the movement's anxieties about emotional expression. Tender feelings were supposed to be transmitted 'naturally' and to flow unimpeded between actors, expanding hearts and motivating charity. Yet, this kind of interpersonal emotional transmission could be associated with irrationality and hysteria. Pamela

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[175] Cobbe, 'The Education of the Emotions', p.223, p.231.
[176] Ibid., 230; Frances Power Cobbe, *The Higher Expediency* (London: VSS, 1882), pp.1-20 (p.230, p.223) [emphasis added].
[177] Paul White, 'Sympathy Under the Knife: Experimentation in Late Victorian Medicine', in *Medicine, Emotion and Disease, 1700-1950*, ed. Fay Bound Alberti (New York: Palgrave Macmillan, 2006), pp.100-24 (p.108).
[178] Cobbe, 'The Education of the Emotions', p.230 [emphasis added].
[179] Stephen Coleridge, *The Glory of English Prose: Letters to My Grandson* (London: G. P. Putnam's Sons, 1922), p.231.
[180] Coleridge, *An Evening in My Library*, pp.52-53
[181] Ibid., p.185, p.184.
[182] Ibid., p.185.

Gilbert and Fred Kaplan note that, alongside an understanding of sympathy as 'a form of fellow feeling processed through individual perception and judgment', a 'model of contagious sentiment, as a wash of feeling that overtopped the boundaries of judgment and perhaps even individuality' remained alive and well in the Victorian period.[183] Nineteenth-century animal protectionists could easily be portrayed as possessed by excessive passions because a large number were women, and some were feminists. Around the turn of the century, their ranks were swelled by socialists and working-class supporters who were also routinely feminised and whose motivations for protest were derided. Since antivivisectionists elevated literature as a progenitor of tender emotions, the language of ethics and animal experimentation quickly overlapped into a potentially problematic 'discourse of "sensibility" already associated with literature and fiction'.[184] The concept that tender feelings for animals were strange and 'self-absorbing' dated back to the previous century.[185] Yet, White argues that the rise in scientific professionalisation prompted a 'special attack' on 'emotions characteristic of Victorian sentimentality' because 'the "sentimental" became a category through which scientific elites defined the "lay public" and dismissed its criticisms as shallow, uninformed and self-regarding'.[186] For example, Thomas Henry Huxley claimed that 'the fanaticism of philozoic sentiment' overpowered rather than furthered true humanity and he fiercely denounced 'the venomous sentimentality & inhuman tenderness of the members of the Society for the infliction of cruelty on Man – who are ready to let disease torture hecatombs of men as long as poodles are happy'.[187] In 1909, the American neurologist Charles Dana claimed that heightened concern for animals was a mental disorder which he termed 'zoophil-psychosis'.[188]

Until the mid-twentieth century, such ideas were perpetuated in academic discourse. In his influential account of crowd psychology (1895) Gustave Le Bon stressed the role of uncontrolled sentiment in whipping up dissent and warned that emotions possessed 'a contagious power as intense as that of microbes'.[189] Studies of protest movements since, have frequently portrayed

[183] Pamela K. Gilbert, *Victorian Skin: Surface, Self, History* (London: Cornell Press, 2019), p.165-6; Fred Kaplan, *Sacred Tears: Sentimentality in Victorian Literature* (Princeton: Princeton UP, 1987), p.17. See also John Mullan, *Sentiment and Sociability: The Language of Feeling in the Eighteenth Century* (Oxford: Clarendon Press, 1988), pp.25-27.
[184] Ivan Kreilkamp, 'Petted Things: *Wuthering Heights* and the Animal', *Yale Journal of Criticism*, 18.1 (2005), 87-110 (p.89).
[185] See for example James Fitzjames Stephen, 'Sentimentalism', *Cornhill Magazine*, 10 (July 1864), 65-75; [Unsigned], 'Sentimental Writing', *Saturday Review*, 10.252 (25 August 1860), 235-36.
[186] Paul White, 'Darwin Wept: Science and the Sentimental Subject', *Journal of Victorian Culture*, 16.2 (2011), 195-213 (p.195).
[187] T. H. Huxley, Quoted in Stephen Catlett, 'Huxley, Hutton and the "White Rage": A Debate on Vivisection at the Metaphysical Society', *Archives of Natural History*, 11 (1983), 181–89 (p.185).
[188] Charles L. Dana., 'The Zoophil-Phychosis: A Modern Malady', *Medical Record*, 75 (6 March 1909), 381-83; Craig Buettinger, 'Antivivisection and the Charge of Zoophil-Psychosis in the Early Twentieth Century', *The Historian*, 55 (1993), 857-72 (p.857).
[189] Gustave Le Bon, *The Crowd: A Study of the Popular Mind* (New York: Macmillan, 1896), p.128.

overpowering emotions and personal trauma as catalysts for mobilisation.[190] Deborah Gould comments that these accounts often 'pathologized those who engaged in contentious politics, viewing that sort of collective action not as struggles over power but rather as the emotionally-driven working out of participants' psychic distress'.[191] She acknowledges that it is challenging to 'attend to the emotional dimensions of collective political action without augmenting that sort of mistaken and derogatory narrative'.[192] Indeed, at the other extreme, studies which favour a 'rational agent model' often fail to consider collective affect as the 'glue of solidarity' and part of effective mobilisation.[193]

We know a great deal more about what activists were supposed to feel than what they actually did. Alongside letters of congratulation, Bayliss and his wife preserved some of the condemnatory correspondence that he received during and after the 'Brown Dog Trial' (*Bayliss v Coleridge*) in a scrapbook. These provide unique insights into expressions of sentiment which are absent from official accounts. One overstretched mother named Celia Maddox launched a particularly vehement attack. In a sprawling letter to Bayliss she declared that '[a]fter seeing the accounts in the papers of the way in which you treat God's poor defenceless creatures, I think it horrible that such as you should live'.

> Whenever Mr Coleridge wants to start his campaign, I am with him at the forefront. I will help him myself to smash the instruments of torture. I will set the victims free. Have you a soul. O base & cruel man is not it enough for you to see an animal in the field, the cat upon the harth [sic] the dog in the back yard. [B]ut that you must cause it to be stolen by a man in your pay, have it anesthertised [sic] or anerthetecercised [sic] or what other wicked name you call it […] tied with ropes & chains, tie a muzzle on his head so tight that it can't holler, but must hold its breathe because of it being so affrighted […] You cruel scoundrel […] I should like you to take my cat. I would bite you to pieces. I am getting so vicious that I can scarcely write. You can understand what it is for a mother of eight children who has to work […] half the week to have to write this letter of mercy but I know I am writing this in the cause of humanity, mercy, & trooth [sic]. I am a Christian woman & I am asking myself what of your soul if you continue to do such wicked acts. What is to be got out of them. Nothing but selfish lust. Do you expect to go to heaven. Never. You will get eternal Damnation. Repent now.
> Yours in Anger.
> Celia Maddox[194]

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[190] Deborah Gould, 'Affect and Protest', in *Political Emotions: New Agendas in Communication*, ed. Janet Staiger, Ann Cvetkovich and Anne Reynolds (New York: Routledge, 2010), pp.18-44 (p.21).
[191] Gould, 'Affect and Protest', p.21.
[192] Ibid., pp.18-19.
[193] Ibid., p.23; James M. Jasper, 'The Emotions of Protest: Affective and Reactive Emotions in and Around Social Movements' *Sociological Forum*, 13.3 (1998), 397-424 (p.397). See also Mary Fairclough, 'The Sympathy of Popular Opinion: Representations of the Crowd in Britain, 1770-1849' (unpublished doctoral thesis, University of York, 2008).
[194] Celia Maddox [Letter to William Bayliss 14 May 1903], UCL Science Collection, MS ADD 273/B1.

The impassioned rhetoric, disjointed grammar, and hasty spelling betray her rising passions. As Maddox's denouncements become surer and the tone more heated, her hand rapidly unravels as, one imagines, her feelings of righteous fury crescendo. She even portrays herself as a vicious animal, becoming a proxy for her cat as *she* threatens to bite Bayliss to pieces. Accounts such as these suggest that the intense emotions triggered by reading about the real or imagined plight of animals could overcome as well as galvanise supporters. As Gilbert comments, '[s]entimentality is a potentially adaptive precursor to sympathy, but without maturing into sympathy itself, it remains a socially dangerous force'.[195] David Agruss adds that 'the relationship between identification and desire is always a precarious and overlapping one'.[196] It was possible that antivivisectionists might become morbidly fascinated by accounts of animal experiments, recoil in disgust, be immobilised by fear, or perhaps experience no response at all, any of which might hamper the movement's progress.

Antivivisection leaders insisted that the cause rested on a strong moral and rational basis. However, they were unwilling to deny the importance of strong feelings as an ethical force – a catalyst for humanitarianism. In response to charges of emotional excess Coleridge asserted that '[o]ur sentimental faculties are far stronger and nobler than our cognitive; feeling must ever be superior to intellect in the work of man, and conscience a better guide of life than calculation'.[197] His brother, also an antivivisectionist, ended a letter to the *Sheffield Daily Telegraph* in 1887 with the following defiant lines:

> You, Sir, have described my views as 'sentimental'. So be it. I glory in it. Sentiment rules the world. Sentiment has been the motive power in all the great reforms involving a moral issue. When a cause is dubbed by its opponents as 'sentimental', then I know it will succeed.[198]

Likewise, Henry Salt, founder of the HL, wrote that sentiment was 'the mainspring of progress […] however fools may decry it'.[199] 'The ultimate word', he wrote, 'will be spoken not by the intellect but by the heart. When once a 'change of heart' has taken place and kinship has been not merely argues and demonstrated but *felt*, any further reasoning will be superfluous'.[200] Just as poetry superseded science, morality trumped reason. At the 1889 annual meeting of the VSS, Cobbe advised members to focus on ethics and avoid the weary question of vivisection's utility. 'But,' she cautioned,

[195] Gilbert, *Victorian Skin*, p.175.
[196] Agruss, 'Victorian experimental physiology and the empire of bodily interiors', p.270.
[197] Stephen Coleridge, *The Idolatry of Science* (London: John Lane, 1920), p 12.
[198] Bernard Coleridge, 'M. Pasteur's Researches', *Zoophilist*, 7.1 (2 May 1887), 6-7 (p.7).
[199] Henry Salt, 'Sentiment', *Humanitarian*, October 1905, pp.172-73 (p.172).
[200] Henry Salt, *Story of my Cousins: Brief Animal Biographies* (London: Watts, 1923), p.70 [emphasis in original].

> study the facts – the *actual cruelties* – which have been done and are doing in England. I know you shrink from this. 'the flesh will quiver when the pincers tear'. It *is* a torture. But cannot *we* bear to *read* what our poor, helpless, dumb friends have to *endure*? Don't say you believe it all and that is enough. No! It is *not* enough; you must *know* it; be able to prove you have really acquainted yourselves with the facts, and so be qualified to speak with the calmness of certainty. *Then* you will make the impression which is needed.[201]

Cobbe's strategy for maintaining political legitimacy – serious study – reflected her own voracious appetite for independent learning. She had spent much of her youth in her family library cataloguing and memorising the teachings of great poets, philosophers, and theologians.[202] The steep demands placed upon *Zoophilist* readers to synthesise and recall scientific information was made apparent when the VSS failed to establish a foothold in France. *Le Zoophile*, established by in 1883, was a short-lived counterpart to the English periodical and included translations of many of the same articles. However, its 'grave and heavy character', religious tone, and dry discussions of scientific matters did not appeal to a French readership.[203] As Cobbe put it bitterly, Parisians 'did not care enough for the Vivisection controversy to read anything which *ennuied* them'. She refused to dilute the contents or liven the style for 'ladies and gentlemen who did not care enough about our work to read a few pages of information', adding haughtily that '[t]he idea is, apparently, yet unknown in France of a serious journal serving as an organ for serious workers in a serious moral or religious agitation'.[204] Cobbe's model activist was a competent and critical reader of dense government documents and scientific works, who was also willing and able to feel keenly for the suffering animal.

Rather than exclude fiction in favour of 'the facts', poetry and short stories were used to control as well as to create emotion. Hamilton claims that the movement's serial media practices supported 'a functional relationship between "feeling" and social action', and Harriet Ritvo agrees that reports of cruelty, such as those published in *Animal World*, were 'intended to move the subscriber to act'.[205] Accounts of abuse in the RSPCA periodical often included the reactions of respectable witnesses who modelled 'proper' responses and reported the offence to the authorities. To generate advocacy remotely, fictional accounts of laboratory experiments were often framed by information about specific bills or parliamentary debates. For example, a poem called 'The Vivisected Dog' (1877), published in the *Home Chronicler,* is prefaced by a note about the abolition

201 Frances Power Cobbe, 'The Society's Annual Meeting', *Zoophilist*, 9.3 (1 July 1889), 76-87 (p.80).
202 Obenchain, *The Victorian Vivisection Debate*, p.16.
203 Frances Power Cobbe, 'The Last Words of "Le Zoophile"', *Zoophilist*, 3.17 (1 April 1884), 285.
204 Ibid.
205 Hamilton, '"[T]o bind together in mutual helpfulness"', p.140; Harriet Ritvo, 'Zoological Nomenclature and the Empire of Victorian Science', in *Victorian Science in Context* ed. Bernard Lightman (Chicago: University of Chicago Press, 1997), pp.334-53 (p.341).

bill recently introduced by a Mr Holt, M. P for North East Lancashire.[206] This frame attempted to transform the 'moral shock' provoked by the poem into agitation for additional legal protections. Furthermore, demands for legislative change were frequently incorporated into the poem's language and form; 'A Caged Lark's Petition' (1883), 'A Canary's Appeal' (1884) and 'A Plea and a Protest' (1884) portrayed animals putting forward their case for justice.[207] Words such as 'petition', 'appeal', 'plea', and 'protest' simultaneously tugged at readers' heartstrings and directed their attention towards Parliament. Thereby periodicals transformed 'inchoate anxieties and fears […] into moral indignation and outrage toward concrete policies and decision-makers' – a vital element of effective protest action.[208] As was common in animal welfare discourses, these poems invariably contained fictional animals who 'obeyed the rules of hierarchical and civilised liberal thought' as members of the political community.[209] Hence, readers were encouraged to see themselves as representatives of worthy weaker subjects rather than as helpless onlookers.

Despite forging such close links with literary culture and extolling the virtues of reading, advocacy periodicals often downplayed their literary contents. The *Animals Guardian* claimed that 'space rarely allows the insertion of verse' yet it carried a considerable amount of amateur poetry and instructed readers on how to submit their contributions to the editor.[210] Similarly, the *Zoophilist*'s subscribers were informed that short stories and poetry sometimes had to be suspended if there was 'much to be said that must be said on serious subjects'.[211] Yet, this announcement was made apologetically, and readers were promised compensation in the subsequent issue in the form of a 'poem from the pen of a lady, which we feel sure will excite great interest when it appears'.[212] In fact, balancing literary and non-literary content was often prioritised. For instance, the February 1878 issue of *Animal World* announced that it contained more poems than usual since subsequent issues would lack literary fare: 'our arrears in this column are accumulated', noted the editor.[213] Remarks about reducing the proportion of letterpress devoted to stories and poems in favour of more 'important' content rarely reflected any lasting change. Instead, these notices were designed to remind readers of the gravity of the crusade and of their duties to remain informed.

Wary that sensitive readers might be put off by upsetting narratives, editors clearly signalled whether poems and stories were suitable for all or too graphic for some. Sometimes the title itself

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206 [Unsigned], 'The Vivisected Dog', *Home Chronicler*, 45 (28 April 1877), 709.
207 R. Coppard., 'A Caged Lark's Petition', *Animal World*, 14.170 (1 November 1883), 164; C. E. Nugent, 'A Canary's Appeal', *Animal World*, 15.177 (2 June 1884), 91; T. Sharp, 'A Plea and a Protest', *Animal World*, 15.178 (1 July 1884), 107.
208 Jasper, 'The Emotions of Protest', p.409.
209 Feuerstein, *The Political Lives of Victorian Animals*, p.3.
210 [Unsigned], 'To Correspondents', *Animals Guardian*, 3.9 (June 1893), 149.
211 [Unsigned], 'To Our Readers', *Zoophilist*, 3.4 (2 April 1883), 53.
212 Ibid.
213 [Unsigned], [Notice], *Animal World*, 9.101 (1 February 1878), 23-24 (p.23).

indicated the appropriate audience: Louisa Robert's poem, published in *Animal World,* was helpfully titled 'A Nursery Rhyme for Grown-Up Children (It Might Frighten the Little Ones!).[214] More commonly, a preamble indicated what kind of material was in store. For example, the *Zoophilist*'s offer of a poem which would 'interest' readers from 'the pen of a lady' guaranteed that the verses would be free from grotesque or shocking content. In January 1833, the year its price was slashed in half, the VSS's periodical established a literary department called 'The Zoophilist's Playground'. This promised to contain 'literary matter of a brighter hue than that which belongs to our leading articles, reports, and reviews' – works, in short, that it would 'pain' no-one to peruse.[215] Loveridge suggests that the playground 'offered an area to register a deep moral response, but from a comfortable distance', adding that, like all playgrounds, it was 'defined by its borders and there were no contributions published from the science profession'.[216] Indeed, the new department was designed to be a safe space – not only because scientific writings were excluded per-se, but also because readers could explore without fear of being unexpectedly shocked or emotionally grazed. For a few months 'The Zoophilist's Playground' carried heart-warming tales of dogs reunited with their owners and poems celebrating nature's magnificence, until the section was abruptly discontinued in April that same year. At this juncture, the *Zoophilist* interspersed stories and poems between named departments which contained reports of parliamentary, legal, and scientific meetings, branch proceedings, notices of new physiological works and experiments, and correspondence.[217] Perhaps, by inserting fiction between these self-consciously serious departments, the reader was afforded some respite from the realities of experimental science and the gruelling analysis of dry documents that this particular periodical notoriously demanded.

The controversy surrounding if or how the *Home Chronicler* should depict vivisection illuminated similar concerns about where responsibility for managing readers' feelings lay. Unlike the unillustrated *Zoophilist,* which decided that graphic pictures would limit its appeal, the *Home Chronicler* printed diagrams which purported to be of a vivisected rabbit and a dog (see Fig. 9-10). These both were taken from the Russian physiologist Élie de Cyon's *Methodik Der Physiologischen Experimente und Vivisektionen: Mit Atlas* [*Methodology of Physiological Experiments and Vivisections: With Atlas*, 1876]. Thus, unlike the *Illustrated Police News* which printed original drawings of vivisection

[214] Louisa Roberts, 'A Nursery Rhyme for Grown-Up Children (It Might Frighten the Little Ones!), *Animal World*, 6.67 (1 April 1875), 59.
[215] [Unsigned], The Zoophilist's Playground', *Zoophilist*, 3.1 (1 January 1883), 3.
[216] Loveridge, 'Historical, Fictional, and Illustrative Readings of the Vivisected Body 1873-1913', p.70.
[217] Hamilton, '"[T]o bind together in mutual helpfulness"', p.142.

between 1877-78 (see Fig. 11-13), the *Home Chronicler* tried to present its images as 'faithful' rather than 'sensational'.[218]

THE

HOME CHRONICLER,

With which is incorporated "The Health Chronicle."

No. 1. SATURDAY, JUNE 24, 1876. Price 4d.

VIVISECTION.—ILLUSTRATION

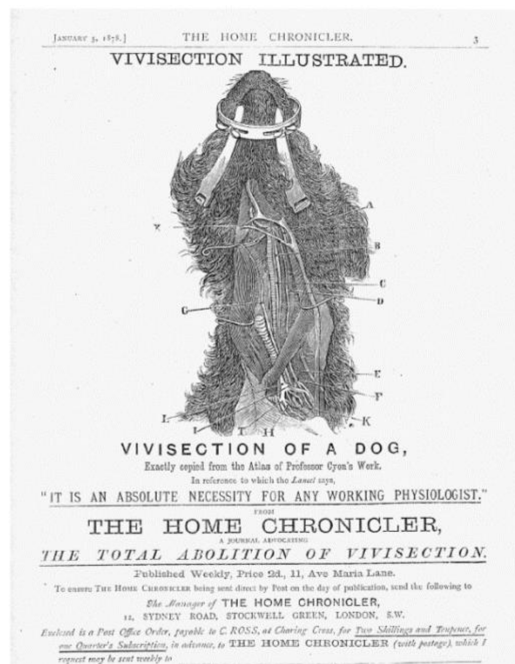
COPIED FROM THE "ATLAS ZUR METHODIK DER PHYSIOLOGISCHEN EXPERIMENTE UND VIVISECTIONEN, VON E. CYON."

It is difficult to convey in a name the character of such a journal as The Home Chronicler is intended to be. This is a disadvantage under which we must be content to labour, until, as we trust will soon be the case, our journal shall have become widely known, and public favour have set upon it the seal of its approval.

Accordingly, we have no intention to make any lengthy or detailed explanation of what we propose to do; but it is necessary to give some idea of what the contents of The Home Chronicler are likely to be.

First and foremost, this journal is established in the hope of affording some additional protection to what are called "the inferior animals" from the cruelties practised upon them, under whatever pretexts and by whatever modes. Especially shall

Figure 9. [Vivisected Rabbit], *Home Chronicler*, 1, (24 June 1876).



January 5, 1878.] THE HOME CHRONICLER. 3

VIVISECTION ILLUSTRATED.

VIVISECTION OF A DOG,

Exactly copied from the Atlas of Professor Cyon's Work.

In reference to which the *Lancet* says,

"IT IS AN ABSOLUTE NECESSITY FOR ANY WORKING PHYSIOLOGIST."

FROM

THE HOME CHRONICLER,

A JOURNAL ADVOCATING

THE TOTAL ABOLITION OF VIVISECTION.

Published Weekly, Price 2d., 11, Ave Maria Lane.

To ensure The Home Chronicler being sent direct by Post on the day of publication, send the following to

The Manager of THE HOME CHRONICLER,

11, SYDNEY ROAD, STOCKWELL GREEN, LONDON, S.W.

Enclosed is a Post Office Order, payable to C. ROSS, at Charing Cross, for Two Shillings and Twopence, for one Quarter's Subscription, in advance, to THE HOME CHRONICLER *(with postage), which I request may be sent weekly to*

Figure 10. [Vivisected Dog], *Home Chronicler*, (5 January 1878), 3.

218 [Unsigned], 'The Horrors of Vivisection', *Illustrated Police News*, 684 (24 March 1877), 1; [Unsigned], 'More Vivisection Horrors', *Illustrated Police News*, 688 (21 April 1877), 1; [Unsigned], 'The Horrors of Vivisection', *Illustrated Police News*, 699 (7 July 1877), 4.

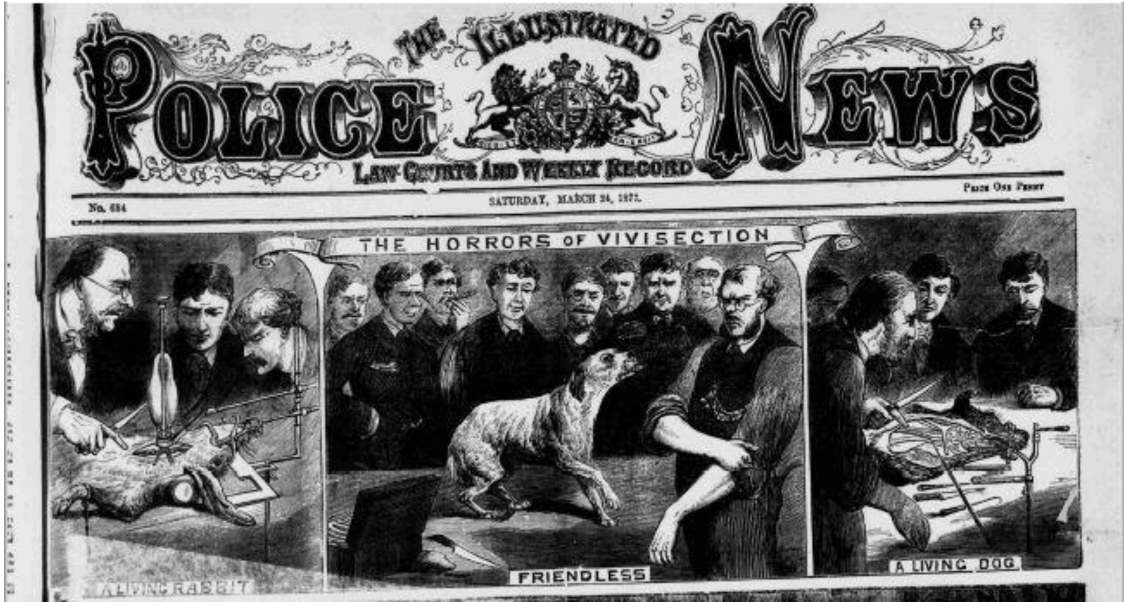


Figure 11. 'The Horrors of Vivisection', *Illustrated Police News*, 684 (24 March 1877), 1.

Figure 12. [Unsigned], 'More Vivisection Horrors', *Illustrated Police News*, 688 (21 April 1877), 1.

Figure 13. [Unsigned], 'The Horrors of Vivisection', *Illustrated Police News*, 699 (7 July 1877), 4.

Even so, they caused uproar in the wider press including in papers which supported legislative restrictions on vivisection such as the *Saturday Review*.[219] Readers of the *Home Chronicler* also complained, prompting a reluctant editorial compromise:

> No doubt, the Illustrations are calculated to cause pain to a mind delicately constructed; and we dare say that not a few have been diverted from giving attention to the subject, shocked by the awful and distressing horrors which these illustrations bring so palpably before the mind's eye, and which they so strikingly portray. Nevertheless, we feel strongly with those who have remonstrated with us on the omission of these illustrations. There is something more to be thought of than 'delicate feelings', when we are fighting against a monstrous iniquity like Vivisection […] We have determined, therefore, to recommence, from our first issue in the New Year, the publication of these illustrations; but, in order that those who wish not to see them, may be spared 'the infliction', we shall insert them on the second and third pages only, – never anywhere else. Those who do not care for

[219] [Unsigned], [Illustrations], *Saturday Review*, 43 (2 November 1877), p.199.

> them, need not cut the first two leaves, and after that they may read their *Home Chronicler* in security, that nothing afterwards shall 'make them afraid.[220]

With this new strategy in place, the *Home Chronicler* included the illustrations in each issue (with very occasional interruption) from January 1878 until it ceased publication.[221] Hamilton notes that by permanently relocating the images, its editor created 'diverse reading paths through the serial itself (shall I cut the leaves or not? this week or next?) – and so the diversity of possible responses to vivisection'.[222] Signalling 'safe' literary spaces produced the same effect. It was commonly believed that repeated exposure to depictions or descriptions of vivisection could fatigue the sympathetic response, and that failure to identify emotionally with the vivisected animal risked a total loss of emotion.[223] By carefully placing and labelling literary content, antivivisection periodicals could protect (or be seen to protect) those who might be diverted from political action or alienated from the cause altogether by having to repeatedly 'know' such horrors.[224]

The movement's rich and multifaceted relationship with literary culture was displayed during a series of protests that sprung up from 1906-10. Although he was euthanised after being vivisected by Bayliss, 'the brown dog' lived on as a powerful symbol, becoming a flashpoint for social conflict. Although *The Shambles of Science* was recalled by publishers, this did not obstruct its popularity with antivivisectionists. The original edition continued to be illicitly sold by the Church Anti-Vivisection League (CAVL) and frequent allusions to the offending chapter, 'Fun', kept the brown dog episode alive.[225] The Animal Defence and Anti-Vivisection Society (ADAVS) – co-founded in 1903 by Lind-af-Hageby and the Duchess of Hamilton – replaced 'Fun' with a revised account of the experiment and of the trial and, by 1913, the work had run to five editions. Lind-af-Hageby and Schuartau were anxious to present themselves as medically-trained and competent witnesses and the *Shambles of Science* as a factual account. Yet, they did not hesitate to borrow moral authority from the humane canon and focus their readers' minds upon the ethical side of the issue by featuring quotations from leading literary figures at the head of each chapter of their last edition. The 'brown dog's' legacy was further secured by an extended controversy following *Bayliss v Coleridge.*

In September 1906, following fundraising by the World League Against Vivisection (WLAV), the BUAV, and the NAVS, a memorial statue was erected in Battersea's Latchmere

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220 [Unsigned], 'Our Illustrations', *Home Chronicler*, 79 (22 December 1877), 1258.
221 Hamilton, '"[T]o bind together in mutual helpfulness"', p.154.
222 Ibid., 158.
223 Hamilton, 'Still Lives', p.32.
223 Boddice, *The Science of Sympathy*, p.57.
224 Ibid., pp.154-55; Hamilton, 'Still Lives', p.29.
225 Kean, *Animal Rights*, p.142.

Recreation Grounds (see Fig. 14). There, the brown dog was amongst friends; the borough of Battersea was a hotbed of radical politics and particularly sympathetic to animal protectionism. It boasted an antivivisection hospital (fondly nicknamed the 'anti-viv' or 'old anti') and a large cats and dogs home that remains a London landmark today.[226] 'In memory of the Brown Terrier dog done to death in the laboratories of University College in February 1903', read part of the inscription, and also 'in memory of the 232 dogs vivisected in the same place during the year 1902'. At the unveiling ceremony (15 September 1906), the radical novelist Charlotte Despard and the playwright George Bernard Shaw made rousing speeches to a large crowd.

Figure 14. The Old Brown Dog Statue by sculptor Joseph Whitehead, 1906.

But the controversy wasn't over. In November and December 1907 and in March the following year, medical students from London's teaching hospitals (who had acquired a reputation for disrupting antivivisection meetings and damaging their propaganda-selling shops) vandalised the commemorative statue of the terrier.[227] During the first attack which took place on 10 December 1907, students tried to topple the monument, but were repulsed by Battersea residents. After failing to reach their second target, the 'old anti', approximately one thousand of the 'brown-doggers' turned towards central London and charged up and down the Strand with a stuffed effigy of the terrier held aloft upon a skewer.[228] Incensed by the statue's inscription, they bellowed

[226] Ibid., pp.5-8. The hospital's antivivisection policy was abandoned in 1935. See [Unsigned], 'Alteration of a Hospital's Objects', *BMJ,* 2.3908 (30 November 1935), 1055.
[227] Hilda Kean, 'An Exploration of the Sculptures of Greyfriars Bobby, Edinburgh, Scotland, and the Brown Dog, Battersea, South London, England', *Society and Animals Journal of Human-Animal Studies*, 11.4 (2003), 353-73 (p.363).
[228] Ibid.

satirical songs about the dog who 'stands and lies' and carries a 'monstrous tale'.[229] Their chorus put the case more straightforwardly: 'Ha, ha, ha! Hee, hee, hee! | Little brown dog how we hate thee'. Street vendors sold handkerchiefs stamped with the words: 'Brown Dog's inscription is a lie, and the statuette an insult to the London University'.[230] Upon reaching Trafalgar Square, a group of the protestors clashed with police and, the following day, some were hauled before Bow Street magistrates' court and handed £5 fines for disturbing the peace.[231] This was the pinnacle of the organised protest, but sporadic rioting broke out over the next few months, and antivivisection gatherings continued to be disrupted, sometimes violently.[232]

In the years that followed, the memorial required extensive police surveillance, concerns about the cost of which were raised in Parliament. Finally, in March 1910, Battersea council ordered for 'the brown dog' to be covertly removed under cover of darkness. Outraged antivivisectionists organised a 3000-strong protest march from Marble Arch to Trafalgar Square. As well as bearing the names of antivivisection organisations and images of the terrier, their placards paid tribute to well-known literary figures. The names of Robert Browning and Alfred Tennyson were splashed across banners, one of which was inscribed with the opening exhortation from one of Tennyson's lesser-known poems, 'Hold Thou No Lesser Life in Scorn' (see Fig. 15).[233] John Ruskin, who had joined the VSS after the controversial establishment of a laboratory at Oxford, also featured.[234] Another flag honoured the recently deceased novelist and activist Ouida as 'the friend of all animals'.[235] Indeed, her well-known passion for animal welfare had been recognised two years earlier by the erection at her birthplace, Bury St Edmunds, of a similarly-styled memorial drinking fountain which also featured a trough for dogs and horses.[236] The 'honorary status and high visibility' of literary celebrities during the protest march illustrates the movement's longstanding strategy of attracting writers and poets to champion their cause and of creating and displaying a close affinity with literary culture.[237]

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[229] Edward K. Ford, *The Brown Dog and His Memorial* (London: Anti-Vivisection Council, 1908), p.3; Lansbury, *The Old Brown Dog*, p.179.
[230] Ford, *The Brown Dog and his Memorial*, pp.9-10.
[231] [Unsigned], 'The Police Courts: Student demonstration', *The Times*, 38514 (12 December 1907), 15.
[232] Ford, *The Brown Dog and his Memorial*, pp.15-17; [Unsigned], 'The "Brown Dog" of Battersea', *BMJ*, 2.2448 (30 November 1907), 1609-10.
[233] [Unsigned], 'The Brown Dog Procession', *Anti-Vivisection Review*, 2 (1910-11), 284-90 (p.290).
[234] [Unsigned], 'Ruskin and the Vivisectionists', *Zoophilist and Animals' Defender*, 1 June 1900, p.49.
[235] [Unsigned], 'The Brown Dog Procession', p.290.
[236] Elizabeth Lee, *Ouida: A Memoir* (London: T. Fisher Unwin, 1914), p.231.
[237] Li, *Mobilizing Traditions*, p.268.

Figure 15. 'The Demonstration on March 19th 1911', *Anti-Vivisection Review*, 1909-10.

From its outset, the movement championed a culture of the heart to combat the forces of unfeeling rationalism. Antivivisectionists feared a future in which 'there is no place for the emotions' and 'an animal is but a bundle of tubes, blood channels, and nerve threads'.[238] For them, sympathetic feeling was an act of protest in and of itself – forming a bulwark against the insidious tide of materialism spearheaded by laboratory science. Literary texts were used to link sympathetic feeling and moral action, to transform the private act of reading into political agitation. However, concerns bubbled up about how to manage feelings which endangered political legitimacy and activists' wellbeing. The cause needed supporters to read voraciously and passionately to evoke 'good and noble emotions to our fellow creatures' which would 'overflow into the hearts of others'.[239] Yet, activists were also required to carefully digest written material – to 'study the facts' in order to make their voices heard. Producing both of these outcomes simultaneously was immensely tricky. Even within the reasonably manageable parameters of protest periodicals, constant reassessments of why, how, and what to read, reveal intense anxieties about the power and pitfalls of using literature as a protest tool. As the movement's principal workers cast an eye over scientific sources, they sought to apply literary-critical strategies in ways that combined feeling and fact to support social action.

[238] [Unsigned], 'True and False Science', *Zoophilist*, 8.5 (1 September 1888), 81-82 (p.82).
[239] Cobbe, 'The Education of the Emotions', p.236.

Chapter 2: The Vivisector

In April 1877, the *Home Chronicler* published the anonymous poem '"Punch" Among the Vivisectors'. Although somewhat sympathetic to animal protectionism and bitingly critical of quackery and medical malpractice, *Punch* 'maintained a faith in the ability of scientists to bring about real social progress', and defended them from accusations of brutishness.[1] '"Punch" Among the Vivisectors" satirised these loyalties by imagining Mr Punch surrendering his loyal dog Toby to a pack of notorious vivisectors. From the fourth stanza, it pursued:

> Now ruthless R_ _ _d may test,
> By his experiments so jolly,
> Which bears extremes of torment best,
> Poor Toby, or a shepherd's colley.
>
> Ninety-cat-B_ _ _n † might be tried
> If he would rather choose to carve him;
> Another S_ _ _ _n might decide,
> Whether 'tis best to bake or starve him.
>
> Says K_ _ _n to *Punch*, "If you invite,
> I've no objection, not the least;
> But, — as he possibly might bite,
> 'Twere best to stupefy the beast."*
> […]
>
> † "When I said I used ninety cats, I should have said that it was in one series, but I am now at the third series." (Blue Book 5747)
>
> * 'I chloroform a cat because I am afraid of being scratched' (Blue Book 3642)[2]

In order to fill in the blanks and name Toby's tormentors, readers needed to be *au fait* with the controversial admissions recently made by experimental scientists. The poem's footnotes or 'key' (marked by the asterisk and dagger) provided excerpts from their statements to the 1875 Commission, the proceedings of which were subsequently published as 'Blue Books'. The Scottish scientists Sir William Rutherford ('Ruthless Rutherford') and Sir Thomas Lauder Brunton are the first to come under fire: the former is condemned for his infamous canine starvation trials, whilst the latter is derided for misinforming commissioners about how many cats he had used ('another Seven might decide | Whether 'tis best to bake or starve him'). The reference to 'baking' recalled the French vivisector Claude Bernard's reviled mechanism for studying death by heat (see Fig. 16)

[1] Richard Noakes, 'Science in mid-Victorian *Punch*', *Endeavour*, 26.3 (2002), 92-96 (p.96).
[2] [Unsigned], '"Punch" Among the Vivisectors', *Home Chronicler*, 45 (28 April 1877), 760.

which featured in the *Home Chronicler*, as well as his description of the 'science of life' as 'a superb and dazzlingly lighted hall which may be reached only by passing through a long and ghastly kitchen'.[3] Finally, Croatian-born Emmanuel Klein, sometimes known as the father of British microbiology, is mocked here for admitting that he only drugged cats in order to protect *himself* from bites and scratches.[4]

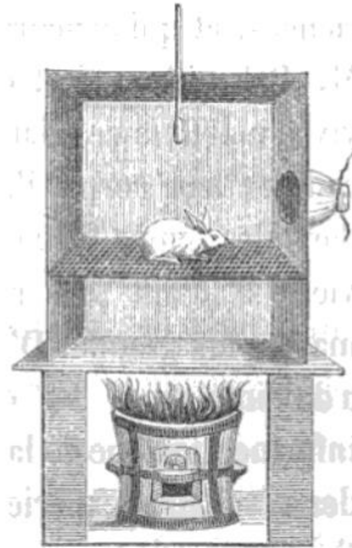

Figure 16. 'Appareil pour l'étude du méchanisme de la mort par la chaleur' ['Mechanism for studying death by heat'], in Claude Bernard, *Leçons sur la Chaleur Animale* (Paris: Bailière, 1876), p.347.

Recent literary critics have also sought to identify the real experimenters supposedly lurking behind representations of vivisectors in nineteenth-century novels, such as Nathan Benjulia in Wilkie Collins's *Heart and Science* (1883) and Dr Moreau in H. G. Wells's *The Island of Dr Moreau* (1896).[5] For Jessica Straley, 'Benjulia ventriloquizes the arch-villain […] Claude Bernard', whom Sherryl Vint and Mark Brumley regard as the inspiration for Wells's Moreau.[6] For Brumley, however, both Benjulia and Moreau represent the Scottish neurologist David Ferrier, whilst Laura Otis proposes that Klein is 'the shadowy foreign presence behind the demonic vivisectors of the

[3] 'A Vivisector's Apparatus for Studying the Mechanism of Death by Heat', *Home Chronicler*, 63 (1 September 1877), 1008; Bernard, *An Introduction to the Study of Experimental Medicine*, p.15.
[4] *RRCV1*, p.330.
[5] Wilkie Collins, *Heart and Science, A Story of the Present Time*, ed. Steve Farmer (Toronto: Broadview, 1997); H. G. Wells, *The Island of Doctor Moreau*, ed. Mason Harris (Peterborough: Broadview, 2009). Subsequent references will be made to these editions and in the main text.
[6] Straley, 'Love and Vivisection', p.349; Sherryl Vint, 'Animals and Animality from the Island of Dr Moreau to the Uplift Universe', *Yearbook of English Studies*, 37.2 (2007), 85-102 (p.87); Mark Brumley, 'Declamation and Dismemberment: Rhetoric, the Body, and Disarticulation in Four Victorian Horror Novels' (unpublished doctoral thesis, University of North Carolina, 2015), p.111.

novels'.[7] Loveridge suggests that 'scientific profiles' published in advocacy periodicals or in pocket-books such as *The Vivisector's Directory* (1884) 'appeared like a casting list for fictional writers' and 'were embellished to create a textual fiend to fit the plot'.[8] The situation becomes even more complicated when critics proffer literary borrowings. For example, E. D. Mackerness suggests that Wells used Collins's Benjulia as a model for Moreau.[9]

Paradoxically, critics who have identified fictional vivisectors as veiled depictions of real physiologists also suggest that these characters are formulaic and two-dimensional. Having drawn parallels between Benjulia and Ferrier, for instance, Otis describes *Heart and Science* (1883) as a 'propagandistic story' that demonises experimentalists.[10] Likewise, Straley suggests that Collins 'gives his readers the rogue they already love to hate': a 'sensational villain' who 'succinctly rehearses all of the caricatures of cruelty that the antivivisectionists had used […] in the years surrounding the 1876 Cruelty to Animals Act'.[11] Others have branded Benjulia 'the stereotypical vivisector' and 'merely a melodramatic monster, a kind of scientific bogeyman'.[12] Steve Farmer and Tony Page, however, agree with Collins himself that Benjulia is 'no gross caricature' (39).[13] Farmer adds that, rather than depend on dramatic situations as he had done in earlier works Collins 'made a concerted effort to create round characters who shaped incident' in *Heart and Science*.[14] The impulse to identify the scientists behind the characters endures partly because the rhetoric of revelation through reading – a mainstay of antivivisection propaganda – is reproduced, equally anxiously, within these works of fiction. Critics are compelled to carry out detective work despite the difficulty of grasping the fictional vivisector, a peculiarly slippery figure who at once invites and resists scrutiny and appears to be both someone and no-one, transparent and opaque.

Unlike scientific writings and antivivisection essays and articles, animal experimentation itself is often curiously absent from antivivisection fiction. Although Keir Waddington claims that antivivisectionists 'believed in the power of literature, especially stories with a sensational quality, to reveal the horrors of vivisection and reach a wider audience', many writers chose not to invite

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[7] Brumley, 'Declamation and Dismemberment', p.111; Laura Otis, 'Howled out of the Country: Wilkie Collins and H. G. Wells Retry David Ferrier', in *Neurology and Literature, 1860-1920*, ed. Anne Stiles (New York: Palgrave, 2007), pp.27-51.
[8] Loveridge, 'Historical, Fictional, and Illustrative Readings of the Vivisected Body 1873-1913', pp.12-13.
[9] E. D. Mackerness, 'Nathan Benjulia, a Prototype of Dr Moreau?', *Wellsian*, 2 (1978), 1-5.
[10] Otis, 'Howled out of the Country', p.28.
[11] Straley, 'Love and Vivisection', p.348.
[12] Gail Levitt, 'Anti-Vivisection writing 1875-1910 and its Cultural Context' (unpublished doctoral thesis, University of Exeter; 2003), I, 7; Dougald B. MacEachen, 'Wilkie Collins' *Heart and Science* and the Vivisection Controversy', *The Victorian Newsletter*, 29 (1966), 22-25 (p.25).
[13] Tony Page, 'From Morality to Medical Danger: Anti-Vivisectionism in the Novels of Three Late-Victorian/Early 20th Century Writers', *MANUSYA: Journal of Humanities Regulator*, 18.1 (2015), 93-114 (p.97).
[14] Steve Farmer, 'Introduction', in Wilkie Collins, *Heart and Science*, ed. Steve Farmer (London: Broadview, 1996), pp.7-27 (p.9).

readers into the laboratory.[15] Explanations range from concerns about propriety to ignorance about scientific procedures. Certainly, restricted access to the 'real thing' raised representative challenges which some writers may have shied away from. Fundamentally, however, it was unnecessary to linger upon actual scenes of vivisection because the vivisector's mind is the true locus of horror in these texts. This, after all, was where scientists were made. As early physiologists emphasised, '[n]ineteenth century [sic] science was as much an attitude of mind as a field of study, an objective discipline where feelings did not intrude'.[16] Writers preferred to explore the experimenter's interactions with other characters which were repeatedly marked by the same paradoxical combination of detachment and absorption through which physiological handbooks described the investigator's relationship with his live subject.

Loveridge asserts that authors who explored human vivisection instead of animal experimentation 'exclude the core message of the movement'.[17] Certainly, Carmina Graywell of *Heart and Science* and Veronica Zaranegra of Ouida's novel *Toxin: A Sketch* (1895) are presented as more significant victims than the monkeys, dogs, and rabbits in Benjulia and Frederick Damer's makeshift laboratories. Yet, because antivivisectionists often framed the anti-cruelty debate in terms of the experimenter's character, human and animal vivisections were inextricably linked.[18] Indeed, contemporary fears that vivisection degraded the practitioner, who then endangered vulnerable people, superseded concerns about individual experimental animals. Amongst many others, Lewis Carroll and George Bernard Shaw warned of a slippage not just 'from scientific experiment to cruel pleasure, but also from vivisection performed on animals to vivisection – or sadism more generally – performed on humans'.[19] Walter Hadwen, the novelist and President of the BUAV, lectured extensively on the rise of 'human vivisection' and many of his speeches were published as penny-pamphlets.[20] This term was used by antivivisectionists to describe unnecessary or experimental procedures on patients or delays in treatment to study disease progression. These fears, though wildly exaggerated, were not entirely baseless: the German physician and microbiologist Robert Koch experimented on paupers and Louis Pasteur suggested using prisoners for research.[21] Although in reality, medical students and qualified physicians were rarely

[15] Keir Waddington, 'Death at St Bernard's: Anti-vivisection, Medicine, and the Gothic', *Journal of Victorian Culture*, 18.2 (2013), 246-62 (p.253).
[16] Bates, *Anti-Vivisection and the Profession of Medicine in Britain,* p.22.
[17] Loveridge, 'Historical, Fictional, and Illustrative Readings of the Vivisected Body', p.14.
[18] Bates, *Anti-Vivisection and the Profession of Medicine*, p.31.
[19] Agruss, 'Victorian experimental physiology and the empire of bodily interiors', p.268; Lewis Carroll, *Some Popular Fallacies about Vivisection* (Oxford: Chapman & Hall, 1875); G. B. Shaw, 'These Scoundrels: Vivisection – the "Science" of Imbeciles: Boiling Babies for the sake of knowledge: St Thomas, "the Half-wit," and the Risen Christ', *Sunday Express*, 7 August 1927, p.7; R. E. Dudgeon, 'Experiments on Human Beings' (London: BUAV, [n.d.]), pp.1-14.
[20] Walter Hadwen, 'Experiments on Living Animals Useless and Cruel. (A Medical View of the Vivisection Question.) An Address' (London; BUAV, [n.d.]), pp.1-28.
[21] Bates, *Anti-Vivisection and the Profession of Medicine*, p.30.

involved in animal experiments, in antivivisection writings – both fiction and non-fiction – the vivisecting-doctor loomed large.[22]

If the 'real' animal victims of vivisection have been obscured by the rich symbolism that their treatment offered other vulnerable groups, their persecutors have practically vanished. Because live experimentation was used by various scientists (e.g. pathologists, neurologists etc.), histories of nineteenth-century medicine and culture do not necessarily examine relevant figures as 'vivisectors' per-se even if they were known as such in nineteenth-century culture. In literary studies, fictional vivisectors are often matched to their 'real' counterpart and then quickly subsumed into gothic villain or mad-scientist tropes as attention turns to their (mostly female) victims.[23]

This chapter examines five novels which engage more thoroughly with this elusive figure. Edward Berdoe and Walter Hadwen plunge readers into marshy ground somewhere between fact and fiction. Their works, *St Bernard's: The Romance of a Medical Student* (1887) and *The Difficulties of Dr Deguerre* (serialised, astonishingly, from 1913 to 1918 in the *Abolitionist* before being published as a single volume in 1926), use heavy-handed techniques to depict their villainous vivisectors, Sir Simon Simpkins and Dr Malthus Crowe.[24] Collins and Ouida negotiate the challenges of effective and entertaining activism for a larger general readership in their respective novels *Heart and Science* and *Toxin,* which pay greater attention to character and plot.[25] Their vivisectors, Benjulia and Damer, are opaque, casting a menacing unseen influence over the two love-interests, Carmina and Veronica. Though no antivivisectionist himself, H. G. Wells uses a vivisecting-protagonist, Dr Griffin, and a discourse about invisibility and optics, to explore similar anxieties in his science fiction novella *The Invisible Man: A Grotesque Romance* (1897).[26]

Antivivisectionist leaders insisted that careful and incisive reading would expose the true emotions and motives of the seemingly unfeeling experimental physiologist. The movement's protest periodicals encouraged activists to intensively analyse vivisectors' textbooks and testimonies, and novelists referred to many of these in order to further articulate concerns first voiced in response to scientific writers. Yet, focusing the microscope on the vivisector himself

[22] Ibid.
[23] Judith R. Walkowitz, *City of Dreadful Delight: Narratives of Sexual Danger in Late-Victorian London* (Chicago: Chicago UP, 1992); Anne Stiles, 'Literature in "Mind": H. G. Wells and the Evolution of the Mad Scientist', *Journal of the History of Ideas*, 70.2 (2009), 317-39.
[24] [Æsculapius Scalpel] Edward Berdoe, *St Bernard's: The Romance of a Medical Student* (London: Swan Sonnenschein, 1888); Walter Hadwen, *The Difficulties of Dr Deguerre* (London: C. W. Daniel Company, 1926), p.242. Subsequent references will be made to these editions and in the main text.
[25] Ouida, *Toxin: A Sketch* (London: T. Fisher Unwin, 1895). Subsequent references will be made to this edition and in the main text.
[26] H. G. Wells, *The Invisible Man*, ed. Patrick Parrinder (London: Penguin, 2005). Subsequent references will be made to this edition and in the main text.

proved problematic. The movement's aggrandizement of textual dissection could become conflated with laboratory operations through a shared discourse of bodily displacement, experimental looking, and heroic discovery. In certain contexts, reading and vivisection began to look like similar activities which threatened to undermine the movement's dualistic rhetorical politics. Some antivivisection novelists mitigated this connection by re-casting flesh as text and by encouraging readers to assume a keen but sympathetic gaze concerned with legible surfaces. By bolstering non-interventionist methods focused on bedside care, they presented true medicine as a healing art rather than a surgical science. Nevertheless, transparent characters and skin-deep readings only went so far. The vivisectors of these novels are not simply objects of scrutiny: they powerfully return the gaze. By regarding surrounding characters as scientific specimens, they induce and interpret artificial psychological and physiological responses and thereby inscribe their own ghastly signatures in the minds, hearts, and bodies of those who attempt to uncloak them.

The unfeeling vivisector

The nineteenth-century vivisection debates occurred during a period of scientific specialisation and professionalisation during which experimenters 'waged a campaign for the autonomy of physiology and laboratory medicine from the dictates of public feeling'.[27] The Victorian medical press dismissed antivivisectionists as sentimental and hysterical, and this attitude remained active in academic discourse for some time; scholars who speculated about the hidden motivations and emotions of those who opposed experimental science were often content with 'transparent reading[s] of historical sources concerning the inner-feelings of medical experimenters'.[28] Recently, however, researchers have sought fresh understandings of the emotions and attitudes of experimental scientists, and often point out that many nineteenth-century physiologists did not regard science and sentiment as mutually exclusive.[29] Mayer suggests that Victorian experimenters were 'involved in deeply emotional relationships with their nonhuman subjects' whereas Boddice maintains that physiologists sought to (and often succeeded in) suppressing responses to animal suffering.[30] Though more nuanced and non-partisan, these efforts to unearth the feelings of

[27] White, 'Darwin Wept', p.195, p.211.
[28] White, 'Sympathy Under the Knife', p.100.
[29] For recent research on the scientific study of emotions see Tiffany Watt-Smith, *On Flinching: Theatricality and Scientific Looking from Darwin to Shell-Shock* (Oxford: Oxford UP, 2014); Paul White, 'Darwin's Emotions: The Scientific Self and the Sentiment of Objectivity', *History of Science Society*, 100.4 (2009), 811-26.
[30] Jed Mayer, 'The Expression of the Emotions in Man and Laboratory Animals', *Victorian Studies*, 50.3 (2008), pp.399-417 (p.399); Boddice, *The Science of Sympathy,* p.72.

experimenters from written accounts mirror the approach encouraged within the nineteenth-century antivivisection movement.

In 1876 the logician William Stanley Jevons commented that antivivisectionists were peculiarly susceptible to 'the minute descriptions of novel and sometimes painful operations in books on practical physiology'.[31] Scientific books and papers were essential to the movement's propaganda strategy, and advocacy journals and pamphlets frequently reproduced excerpts from them, a practice which Hamilton terms 'assemblage'.[32] Thereby, select scientific materials were made available to laypersons who, antivivisectionists insisted, could not only comprehend the results of scientific research but also 'extract rather different conclusions (often moral, sometimes theological) about the meaning of that research'.[33] This strategy helped bolster the value of eclectic general knowledge and erode the discourse of scientific specialisation with social, moral, and aesthetic criticism.[34] The notion that emotions were both 'managed within the scientific investigator' and also 'reconfigured in scientific works for a reading public' enabled activists to claim that they had extracted a truer version of the experimenter from his own published works.[35] Attending to literary and dramatic elements of scientists' language opened up an otherwise esoteric object to new interpretations. Unconvinced by vivisectors' frequent claims to have achieved objectivity by constraining their feelings altogether, antivivisectionist readers were drawn to moments when the experimenter was preoccupied, absorbed even, by details of his work. As he fixated on a particular problem or procedure and delved into deeper parts of the body, he also unconsciously exposed his own inner workings.

In his impactful letter to the *Morning Post*, George Hoggan invited greater scrutiny of vivisector's claims by insisting that written accounts misrepresented the physiologist's true nature. These men were 'always ready to repudiate any implied want of tender feeling', he alleged, yet 'seldom show much pity':

> In practice they frequently show the reverse. Hundreds of times I have seen when an animal writhed with pain, and thereby deranged the tissues during a delicate dissection, instead of being soothed it would receive a slap and an angry order to be quiet and behave itself […] it would receive pity so far that it would be said to have behaved well enough to merit death.[36]

In this passage, an animal's unalloyed communication contrasts with the physiologist's obscured feelings. By juxtaposing what experimentalists say to what they 'show […] in practice', Hoggan

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[31] William Stanley Jevons, 'Cruelty to Animals: A Study in Sociology', *Fortnightly Review*, 19.113 (1 May 1876), 671-84 (p.683).
[32] Hamilton, 'Reading and the Popular Critique of Science', p.75.
[33] Ibid., p.70.
[34] Mayer, 'The Vivisection of the Snark', pp.430-31.
[35] White, 'Sympathy Under the Knife', p.118;
[36] George Hoggan, 'Vivisection', p.177.

connected the secrecy that surrounded animal experiments with physiologists' shrouded inner feelings.

His warning that the public knew no more about the cruel realities of vivisection 'than what the distant echo reflected from some handbook for the laboratory affords', directed suspicion towards the *Handbook for the Physiological Laboratory* (1873).[37] This was described as 'a dangerous book to society' by the editor of the *Spectator* and the *Saturday Review* echoed the movement's rhetoric of reading and emotional contagion when claiming that the work's 'ominous' appearance symbolised 'the introduction into England of a new moral contagion'.[38] These volumes, it added, 'imported […] not only the practices but the *principles*' of experimental science from France and Germany.[39] These allusions to disease were especially pointed since three of the four co-authors (Klein, Brunton, and Burdon-Sanderson) held posts at the Brown Institute, London's recently established centre for physiological and aetiological research. In the preface, Burdon-Sanderson had described the *Handbook* as 'a book of methods' that 'claims a place rather in the laboratory than in the study'.[40] With its matter-of-fact instructions, practical purpose, and illustrative plates, the manual epitomised Cobbe's fears about the relationship between reading, feeling, and action, explored in the previous chapter. Apprehensive that readers would become 'fresh propagators' of the vivisectors' mentality and morality, antivivisection periodicals tried to get to grips with the 'passion' for experiment which Cobbe described as 'the germ of the disease', by identifying the kinds of feelings and attitudes that the *Handbook* promoted.[41]

Although the *Handbook*'s measured tone and practical purpose ostensibly reflected a clinical attitude, the *Zoophilist* suggested that illicit desires actually lay behind the dispassionate descriptions of vivisections. It cast this aspersion, for instance, by likening Burdon-Sanderson's precise instructions on performing an asphyxia experiment to those found in 'a recipe-book for cookery'.[42] This knowing comment recalled Bernard's infamous metaphor of the laboratory as 'a long and ghastly kitchen' and also an apparatus for the study of the mechanism of death by heat. The description attached to a diagram of this machine in Bernard's book, *Leçons sur la Chaleur Animale* [*Lessons in Animal Heat*, 1876], briefly acknowledges – within an uneasy parenthesis – that it is, essentially, an oven (*étuve*) for live animals (see Fig. 17).

[37] Ibid.
[38] *RRCV1*, p.68; [Unsigned], 'Cruelty to Animal's Bill', p.773.
[39] [Unsigned], 'Cruelty to Animal's Bill', p.773 [emphasis in original].
[40] Burdon-Sanderson (ed.), et al., *Handbook for the Physiological Laboratory*, p.vii.
[41] Cobbe, 'The Education of the Emotions', p.223; Frances Power Cobbe, *The Study of Physiology as a Branch of Education* (London: VSS, 1886), pp.3-7.
[42] [Unsigned], 'Notes and Notices', *Zoophilist*, 10.10 (2 February 1891), 189-93 (p.193).

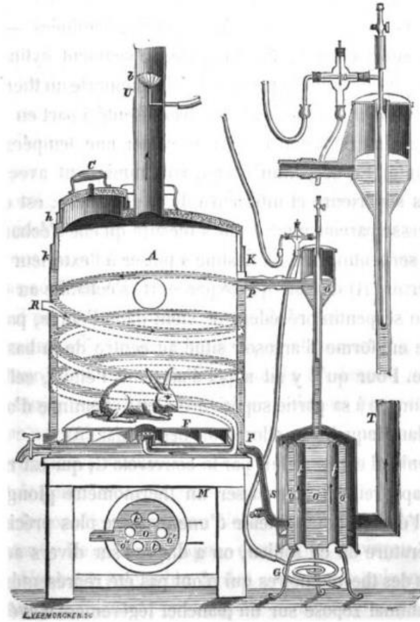

Fig. 8. — Appareil (étuve) pour l'étude du mécanisme de la mort par la chaleur.

Figure 17. 'Appareil (étuve) pour le'étude du méchanisme de la mort par la chaleur', in Claude Bernard, *Leçons sur la Chaleur Animale* (Paris: Bailière, 1876), p.363.

The *Zoophilist*'s comparison of handbook and cookbook also contradicted Burdon-Sanderson's separation of scientific and domestic space (the laboratory and the study). Hamilton suggests that the culinary imagery underlined the complaint that the *Handbook* normalised animal experiments and encouraged unskilled 'beginners' to try their hand at vivisection.[43] Additionally, however, by comparing scientific operations and daily domestic activities, the *Zoophilist* demystified physiological research and legitimised the non-scientific reader's literary-critical analysis. The article executed another spatial sleight of hand by retaining the material 'kitchen' but removing Bernard's transcendental 'dazzling lighted hall'. Colin Milburn explains that, for Bernard,

> the laboratory operates as a book of blood, promising meaning and the light of truth on the other side […] but appearing on its crimson surface as nothing so much as a butcher's block, a wet and grisly place where the 'cutting up of animals' might also entail cooking and eating them.[44]

By disconnecting the kitchen from the lighted hall, the *Zoophilist* denied the laboratory's status as 'the space of the signifier, the carnal surface of incision' and asserted that vivisection merely sated 'unmentionable "appetites"'.[45]

[43] Hamilton, 'Reading and the Popular Critique of Science', p.71.
[44] Colin Milburn, 'Science from Hell: Jack the Ripper and Victorian Vivisection', in *Science Images ad Popular Images of the Sciences*, ed. Peter Weingart and Bernd Hüppauf (London: Routledge, 2012), pp.125-58 (p.148).
[45] Ibid., p.148.

Comparisons between vivisection and cookery were also made in defence of animal experimentation. In 1876, a rare pro-vivisection poem titled 'Vivisection: A Satire' appeared, unsigned, in the *Edinburgh Medical Journal*. It lambasted the '[o]ld women of both sexes' who 'fuss 'bout so-called vivisections' but fail to consider their enjoyment of more common and less useful cruelties. The third stanza pursues:

> That capon you enjoyed got but *foul* play,
> Since, by a painful operation, it
> Was for your sumptuous table rendered fit.
> That oyster, which you swallowed, when in life
> By force was opened with a cruel knife;
> Pepper and vinegar were next applied,
> And then it down your throat alive did glide.
> Perhaps crimped curdy salmon was a dish
> Which in your *menu* formed your course of fish.
> But know you how that crimping was effected?
> 'Twas neither more nor less than vivisected.
> Its quivering muscles, whilst it lived, were cut,
> That you your appetite with them might glut.
> To *Mayonnaise d' Homard* you don't object,
> But even here I'd have you recollect:
> That poor crustacean, upon which you thrive,
> Was in a pot of water boiled alive.
> But, to proceed, I'd next attention draw
> To the prime relish *Paté de foie gras*!
> Oh, what a fearful, horrible abuse
> The torture practised on the wretched goose!
> Boxed closely up before a roaring fire,
> In order that its liver may acquire
> Fatty disease on which *gourmands* may feast
> Oh, cruelty unmatched in man or beast!
> That eels are skinned alive, that we well know;
> Is it not monstrous that it should be so?
> For I am not persuaded that the eel
> To it accustomed – does the less it feel;
> Why should the eel not get by law protection
> From this inhuman torturing vivisection?
> Your veal you don't approve unless 'tis white,
> To gratify your palate and your sight;
> This object to attain poor calves are bled
> By a slow process until they be dead;
> And this, I think, you must allow is really
> Experimenting on a *corpus vile*.[46]

The poem continues in this vein, comparing other middle-upper-class hobbies and practices such as field-sports, tail-cropping, and feather-wearing to vivisection. These comparisons may have

[46] [Unsigned], 'Vivisection: A Satire', *Edinburgh Medical Journal*, 22 (1876), pp.90-93 (p.90-91) [emphasis in original].

amused scientific readers, but Klein's ill-judged testimony before the First Royal Commission showed that many rejected justifications of vivisection on these grounds.

When quizzed about the problem of painful experiments, Klein replied that the physiologist should no more 'be expected to devote time and thought to inquiring what this animal will feel while he is doing the experiment' than the cook or sportsman concern him or herself about the feelings of the lobster in the pot of boiling water or the game in the field.[47] 'His whole attention', Klein explained, 'is only directed to the making [of] the experiment, how to do it quickly, and to learn the most that he can from it'.[48] When shocked commissioners sought clarification, he reasserted that he had 'no regard' for the suffering of experimental animals.[49] Here was 'Cobbe's arch-vivisector incarnate'.[50] Detached and disinterested, Klein 'epitomised scientific cruelty; intense pain, almost too dreadful to gaze on, he seemed ready to inflict with neither qualm nor shudder'.[51] Even staunchly pro-vivisection commissioners such as Thomas Henry Huxley (who was absent on the day Klein testified) were horrified by his brutality. 'I declare to you', Huxley confessed in a letter to Charles Darwin, 'I did not believe the man lived who was such an unmitigated cynical brute', adding that Klein had done more to aid the antivivisection cause than 'all the fanatics put together'.[52] Klein should have been more circumspect: he well knew that 'a very different feeling' existed among the British public than among British and European medical students.[53] No number of physiologists professing to be dog-lovers could patch up the damage he had caused.[54] Claims that misunderstandings had arisen because of a language barrier fell on deaf ears, and Klein's request to retrospectively amend his answers was refused; a modified account instead appeared as an appendix to the final *Report*. The *Home Chronicler* launched its first issue by reprinting Klein's original and edited account side by side as a pointed comment on vivisectors' untrustworthiness. Years later, Cobbe instructed activists to read his testimony in full, warning that even the oft-quoted confession that he had 'no regard' for animal suffering gave 'a very inadequate impression of the whole frame of mind of this gentleman on the subject of the softer emotions'.[55]

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[47] *RRCV1*, p.183.
[48] Ibid.
[49] Ibid, p.328.
[50] French, *Antivivisection and Medical Science*, p.104.
[51] Turner, *Reckoning with the Beast,* p.86.
[52] T. H. Huxley, 'Letter to Charles Darwin, 30 October 1875', in *The Correspondence of Charles Darwin: Vol. 23, 1875*, ed. Frederick Burkhardt and Sydney Smith (Cambridge: Cambridge UP, 2015), p.425.
[53] *RRCV1*, p.183.
[54] *RRCV1*, p.124, p.170. Robert Louis Stevenson regarded it as absurd for men to claim to be 'very fond of dogs' yet 'whet the knife of the vivisectionist or heat his oven'. See *Memories and Portraits* (London: William Heinemann, 1924), p.93.
[55] Frances Power Cobbe, *Public Money* (London: VSS, 1892), pp.1-18 (p.2).

Klein's attitude mirrored that of his mentor Claude Bernard, Europe's most prominent proponent of the experimental method. In his 1865 work, Bernard valorised the vivisector's attitude to research. 'A physiologist is not a man of fashion', he asserted,

> he is a man of science, absorbed by the scientific idea that he pursues: he no longer hears the cry of the animals, he no longer sees the blood that flows, he sees nothing but his idea and perceives only organisms concealing problems which he intends to solve.[56]

While Bernard's 'see nothing' stance, like Klein's 'no regard' attitude, ostensibly represented clinical detachment, his language did not always signal calm objectivity. When extolling the physiologist's ability to focus on the 'scientific idea', Bernard used words such as seized (*saisi*) and absorbed (*absorbé*), which conflated the need for concentration with pleasurable oblivion. Despite adopting 'an exaggerated air of indifference' when demonstrating before a crowd, the scientist – according to his biographer Frederic Holmes – 'reacted to his scientific work with more intense feeling than he would afterward have others believe'.[57] Activists harboured suspicions that the vivisector's 'objectivity' was a front for those who 'chose to hide delight in pain behind a mask of glacial calm'.[58]

Criticism of one of Bernard's colleagues, the Russian-French physiologist Élie de Cyon (born Ilya Fadevevich Tsion and also known as Elias von Cyon) followed the same pattern. As discussed previously, facsimiles of a dog and rabbit from his well-regarded sourcebook for researchers and physicians were reprinted in the *Home Chronicler* and even pasted on placards at railway stations. Passages from Cyon's work were also reprinted in the *Zoophilist* and read aloud at VSS meetings.[59] Antivivisectionists took particular umbrage with the following assertion:

> He who shrinks from the section of a living animal, he who approaches a vivisection as an unpleasant necessity […] will never become an artist in vivisection […]. He who cannot follow some fine nerve-thread, scarcely visible to the naked eye […] with joyful alertness for hours at a time; he who feels no enjoyment when at last, parted from its surroundings and isolated, he can subject that nerve to electrical stimulation […] to such a one there is wanting that which is most necessary for a successful vivisector […]. And the sensation of the physiologist, when from a gruesome wound, full of blood and mangled tissue, he draws forth some delicate nerve branch […] has much in common with that which inspires a sculptor, when he shapes forth fair living forms from a shapeless mass of marble.[60]

Vivisection rendered bodily interiors 'spectacularly and excessively visible' and Lewis Carroll, amongst many others, warned that aversion to live experiment would first turn into morbid

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[56] Bernard, *An Introduction to the Study of Experimental Medicine*, p.103.
[57] Obenchain, *The Victorian Vivisection Debate,* p.41; Frederick Holmes, *Claude Bernard and Animal Chemistry* (Cambridge: Harvard UP, 1974), pp.375-76.
[58] Lansbury, *The Old Brown Dog*, p.156.
[59] Galina Kichigina, *The Imperial Laboratory: Experimental Physiology and Clinical Medicine in Post-Crimean Russia* (New York: Rodopi, 2009), p.272; [Unsigned], 'Annual Meeting of the Victoria Street Society for the Protection of Animals from Vivisection', *Zoophilist*, 2.15 (July 1882), 106-12.
[60] Élie de Cyon quoted in Frances Power Cobbe, 'Vivisection and its Two-faced Advocates', *Contemporary Review*, 41 (1 January 1882), 610-26 (p.611).

interest, then positive pleasure, and finally 'a ghastly and ferocious delight'.[61] Passages like this one convey what Agruss terms the 'hyperbolic visibility produced and required of vivisection' and therefore even reading risks being gratifying.[62] By describing surgical cutting as artistry, comparing his scalpel to the sculptor's chisel, and lingering upon the pleasures of extracting and electrocuting delicate nerves, the Russian physiologist exposed himself to claims that feelings were not at all 'distant,' but part of the allure of animal research. Cyon retorted that neither cruelty nor compassion motivated the operator and that he had merely described the satisfaction of 'vanquishing the many difficulties of the experiment' and finding his 'arduous efforts crowned with success'.[63] Described thus, the animal body resembles a map to be charted and conquered, and vivisection becomes an individualistic and heroic quest.[64] As Charles Richet described it, the true vivisector is motivated by 'scientific curiosity […] alone', and 'cuts the spinal marrow of a dog' and 'poisons a frog' in order to resolve obscure details and establish new facts rather than to cure disease.[65] 'This is why we pass our days in foetid laboratories', he explained, 'surrounded by the groaning creatures, in the midst of blood and suffering, bent over palpitating entrails'.[66]

Of course, some physiologists claimed that they stoically endured the gruesome nature of their work for the good of mankind. Many insisted, without irony, that vivisection was equally 'painful' for them as for the animal.[67] Brunton and Bernard explained the disconnection between the vivisector's cool exterior and warm heart by likening experimenters to surgeons. Doctors who do not shudder or pale at suffering, the former explained, 'have simply learned to disregard their own feelings, and to concentrate their attention on the interests of the patient. They are guided no longer by emotion, but by judgement'.[68] This principle, which Boddice terms 'calculated callousness', became common in the 1870s and '80s; doctors and scientists claimed that it was necessary to switch off their own instinctive responses, in order to inflict suffering for a greater benefit.[69] White notes that, by emphasising the manly control of emotion in the fight against disease, vivisectors gave 'a legitimate and triumphalist gloss to the kinds of passions that their critics denigrated as selfish and inhumane'.[70] This also helped navigate the 'tensions and slippages'

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[61] Agruss, 'Victorian experimental physiology and the empire of bodily interiors', p.268; Carroll, *Some Popular Fallacies about Vivisection*, pp.8-9.
[62] Agruss, 'Victorian experimental physiology and the empire of bodily interiors', p.268.
[63] Élie de Cyon, 'The Anti-Vivisectionist Agitation', *Contemporary Review*, 43 (1883), 495-510 (p.503).
[64] Nicholas Jardine, 'The Laboratory Revolution in Medicine as Rhetorical and Aesthetic Accomplishment', in *The Laboratory Revolution in Medicine*, ed. Andrew Cunningham and Percy Williams (Cambridge: Cambridge UP, 1992), pp.304-23; Agruss, 'Victorian experimental physiology and the empire of bodily interiors', p.273.
[65] [Unsigned], 'Notices of Books', *Zoophilist*, 34 (2 April 1883), 58-59.
[66] Ibid.
[67] See for example, Simon, 'An address'.
[68] *RRCV1*, p.480.
[69] Boddice, *The Science of Sympathy*, p.58.
[70] White, 'Sympathy Under the Knife', p.111.

between the gentlemanliness of amateurism and the new professionalism that vivisection brought into particular focus.[71] Ultimately, however, utilitarian arguments failed to address concerns that animal experimentation either revealed or caused a callous temperament.[72] Besides, the notion that sympathy could be 'turned off' at will discomforted moral traditionalists for whom 'calculated callousness' sounded very much like sacrificing the weak for the strong.

Bernard and his brethren 'offered a portrait of the researcher that was, for animal lovers, nothing less than diabolical'.[73] By paying close attention to small changes in tone and shifts in language, writers of antivivisection propaganda presented physiologists' accounts as full of contradictions and circumlocutions.[74] These men, they concluded, conspired to deceive the public. Contrasting the 'startling self-revelation of the Vivisector […] to his colleagues' with his depiction in the *Nineteenth-century* and *Fortnightly Review*, Cobbe described the vivisector's public and private presentation as 'almost as different as one face of Janus from the other'.[75] Antivivisection periodicals termed physiologists 'human monsters,' 'scientific barbarians,' and 'human demons', condemning their practice as 'a vile pursuit,' 'cruel quackery,' and 'scientific torture'.[76] This discourse of diablerie was reiterated in the wider press.[77] Supporters continued to claim, rather contradictorily, that vivisectors delighted in and were totally inured to animal suffering. Bates points out that '[t]he idea that the vivisectionists' mask of objectivity hid their inability to understand the real consequences of their actions, or even accept their own feelings, persisted in animal welfare writing until at least the late-twentieth century'.[78] Certainly, suspicions about the physiologist's ability to correctly identify his own motivations and emotions were long-lived.

Yet, antivivisectionists were also accused of performing unscrupulous operations behind a mask of 'humanitarianism'. In a passionate article for the *Contemporary Review* (1883), Cyon scolded British physiologists for engaging with those 'fanatics' who disfigured their work to mislead a general audience. He claimed that

> [t]he serious refutations which some men of science had condescended to proffer became fresh weapons in the hands of these unscrupulous persons, thanks to the skill with which they mutilated the texts, distorted quotations, and held up to public animadversion the experiments described in memoirs intended for specialists.[79]

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[71] Rob Boddice, '"Vivisecting Major": A Victorian Gentleman Scientist Defends Animal Experimentation, 1876-1885', *Isis*, 102 (2011), 215-37 (p.218).
[72] Bates, 'Vivisection, Virtue Ethics, and the Law in 19th Century Britain', p.31.
[73] Straley, 'Love and Vivisection', p.349.
[74] Hamilton, 'Reading and the Popular Critique of Science', p.73.
[75] Cobbe, 'Vivisection and its Two-faced Advocates', p.612.
[76] George Gore, *The Utility and Morality of Vivisection* (London: J. W Kolckmann, 1882).
[77] Thomas Watson, 'Vivisection', *Contemporary Review*, 25 (13 May 1875), 867-70.
[78] Bates, *Anti-Vivisection and the Profession of Medicine*, pp.5-6.
[79] Cyon, 'The Anti-Vivisectionist Agitation', p.499.

Cyon complained that his *Methodik* had been thus 'used and abused'. Referring to the passage quoted previously, he asserted that in order to find an avowal of cruel pleasure, 'some few lines have been detached from their surroundings', and 'repeated *ad nauseum*' with comments attached to further 'impair the sense'.[80] The extent of this mutilation and grafting was quickly illuminated, he added, when the excised and displaced passages were restored to their original contexts. He also claimed that the infamous images of the dog and rabbit were 'got up after a fashion of their own' and presented as scenes of agony when, in fact, the creatures were dissected only once deceased.[81]

As some of the literary criticism discussed in the previous chapter shows, antivivisectionists were often guilty of editorial severity.[82] Therefore, it is vital to consider Hamilton's notion of 'assemblage' as a process of taking apart as much as one of putting together. Meanings of scientific works could become so destabilised through repeated fragmentation and reconfiguration (via elliptical breaks or intensive commentary) that a 'Frankenstein' textual body was produced, imbued with a likeness and a life of its own. The brutality of textual operations aside, the very fact that vivisectors' written statements were used to dissect their characters meant that pen and scalpel mimicked each other. This is starkly revealed in Cobbe's satiric tale *Science in Excelsis: A New Vision of Judgement* (1875) which portrays three vivisectors called to answer for their 'crimes' before a cherubim court. The archangels, like Tray's vivisector, are interested in 'what sort of brain secretes these kinds of statements', and so the physiologists are vivisected according to instructions written by themselves.[83]

Cyon warned his English colleagues that 'deigning to enter the arena at all with such adversaries' gave antivivisectionists 'unmerited credit with the crowd'.[84] To avoid providing fodder for their opponents' propaganda, British physiologists described research methods and results more guardedly and, by the *fin-de-siècle*, accounts of experiments were rarely published outside professional and educational circles.[85] Yet, the movement ensured that a fascination with the nature and extent of experimenters' emotions did not wane. The continuing trend towards scientific professionalisation plus dissatisfaction with animal protection legislation, only strengthened their resolve.

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[80] Ibid., p.503.
[81] Ibid., p.500, p.502.
[82] Note, for example, the controversy surrounding G. M. Rhodes (ed.), *The Nine Circles of Hell of the Innocents Described from the Report of the Presiding Spirits* (London: Swan Sonnenschein & Co., 1902).
[83] [Frances Power Cobbe], *Science in Excelsis: A New Vision of Judgement* (London: VSS, 1875), p.16.
[84] Cyon, 'The Anti-Vivisectionist Agitation', p.500.
[85] Hamilton, 'Reading and the Popular Critique of Science', p.70.

Introducing the fictional vivisector

The novels by Ouida, Collins, Hadwen, and Berdoe follow strikingly similar plotlines, briefly outlined below. Berdoe's *St Bernard's* begins by charting the moral decline of Harrowby Elsworth, a medical student at an East End training hospital run by those who care more about their careers than their patients. Eventually, Elsworth has an epiphany whilst reading Browning's 1835 poem *Paracelsus* (of which more later); he rejects scientific materialism and travels across Europe preaching the Gospel, healing the sick-poor, and improving sanitation. Back in London, the vivisector, Dr Crowe, convinced that experiment is 'the only gate to [...] true knowledge', vivisects guinea-pigs, mice, frogs, tabbies, and lap-dogs. To fund this research, he plots to poison his wife and marry the young heiress and antivivisectionist Mildred Lee. Crowe, Lee and Elsworth cross paths in Spain where the latter is ministering to a gypsy community. Crowe murders his wife but fails to woo Mildred. His oily laboratory assistant, the portentously named Mr Mole, detects the toxin used in the uxoricide and gives a paper of his findings, prompting Crowe to commit suicide in his 'inquisition chamber' (118). Elsworth and Lee marry and dedicate their lives to running a sanatorium for the poor.

In Hadwen's *Dr Deguerre*, the eponymous physician eventually sets his mind against experimental science after discussing the topic at length at his debating club. Within this overarching scheme, his antivivisectionist daughter Marjorie falls ill with tonsillitis which his colleague, a vivisecting-doctor called Simon Simpkins, erroneously diagnoses. Marjorie's aunt protests against Simpkins's recommended course of treatment and eventually restores her niece's health 'naturally'. In a plot turn similar to that involving Dr Crowe, the vivisector here tries to marry the love interest Marjorie who, like Mildred, rejects him. Instead, she becomes engaged to Simpkins's reformed laboratory assistant, the naval surgeon Dr Drew (a replica of George Hoggan) who is also the long-lost son of the animal-loving debater Mr Devereaux.

In Collins's novel, the surgeon Ovid Vere falls in love with his sick, hypersensitive cousin Carmina, whose brain disease attracts the interest of a vivisector called Dr Benjulia. Lusting for fame and knowledge, and keen to study the rare condition progress, Benjulia permits Dr Null to continue his ineffective medical treatments. Serendipitously, a dying doctor gives Ovid a book which happens to indicate the cause and cure of Carmina's disease. Ovid assumes command over Carmina's treatment and, when he publishes his findings, Benjulia realises that all his efforts to solve the 'grand problem' of brain disease have been futile; he, like Crowe in *St Bernard's*, commits suicide in his laboratory, and the young couple marry.

The villainous vivisector of Ouida's *Toxin* is a surgeon called Frederick Damer, a cruel, contemptuous atheist who practises 'physiology to reach through it that power and celebrity for which his nature craves' (32). Whilst Damer has 'all the vices', his companion, the Sicilian prince Lionello Adrianis, 'monopolises all the graces'.[86] Adrianis falls in love with a Venetian Countess called Veronica Zaranegra. Yet, although she returns the Prince's affections and despite the fact that Damer performs investigative surgery on one of her beloved servants, the vivisector wields an uncanny power over her. After gallantly diving into a dirty canal to save a drowning pauper-child, Adrianis catches diphtheria. Attentive nuns improve his condition but Damer is driven to experiment and injects the Prince with a lethal dosage of diphtheria toxin under the pretence of administering serum. After the death of Veronica's young lover, Damer's unnerving power fructifies and she becomes his reluctant bride.

Excepting *Toxin*, each aforementioned novel contains a 'good doctor' who resists the temptations of fame and fortune and is rewarded with the heroine's hand in marriage. The vivisectors of all four works are so driven by ambition and a lust for knowledge that they commit medical malpractice and even outright violence upon themselves and others. To understand these likenesses more fully, we must consider each author's involvement in the movement.

Berdoe and Hadwen were Cobbe's close allies and held leadership roles in both of the societies she founded; Berdoe was an executive member of the VSS and edited the *Zoophilist* while Hadwen was President of the BUAV and a prolific contributor to the *Abolitionist* as well as other provincial and national papers.[87] Medical and scientific men were not numerous within the movement so, as physicians, both men were highly valued.[88] Indeed, Cobbe recruited Hadwen after hiring a private detective to confirm his hard-line stance on abolition, and she furthered Berdoe's author-activist career by personally subsidising the publication of *St Bernard's* (which was advertised in the *Zoophilist*) and by using funds at her disposal to place copies in public libraries.[89] Although she did not live to see the publication of *The Difficulties of Dr Deguerre,* Hadwen's intellectual indebtedness to his patroness is revealed by direct references to her pamphlets and treatises and also through the work's emphasis on seriously studying 'the facts'.

Though already a popular sensation writer, Collins also sought Cobbe's advice about *Heart and Science*, which he described as a 'small contribution in aid of the good cause, by such means as

[86] [Unsigned], 'Toxin', *Saturday Review,* 80.2090 (16 November 1895), 661-62 (p.662).
[87] [Anon.], '12th Annual Report of the BUAV' (London: BUAV, 1910), pp.1-13 (pp.9-10), BUAV Archive, Hull, Hull History Centre, UDBV/3/1.
[88] Cobbe, *Life of Frances Power Cobbe*, p.672; French, *Antivivisection and Medical Science*, p.217.
[89] Mitchell, *Frances Power Cobbe*, p.322.

Fiction will permit'.[90] She sent him some protest material which combined 'forcible statement' with 'moderation of judgement'.[91] The novel's preface to 'Readers in Particular' (i.e. those familiar with the vivisection question) shows his efforts to honour the movement's aims and methods. There, he thanked Cobbe once again for recognising 'the value of temperate advocacy'.[92] Concerns about moderation prompted his decision to leave 'the detestable cruelties of the laboratory to be merely inferred' and instead to trace 'the moral influence of those cruelties upon the man who practices them'.[93] 'The outside of the laboratory', he wrote, 'is a necessary object in my landscape – but I never once open the door and invite you to look in' (38). He explained to Cobbe in June 1882:

> I am writing to a very large public both at home and abroad; and it is quite needless (when I am writing to *you*) to dwell on the importance of producing the right impressions by means which keep clear of terrifying and revolting the ordinary reader.[94]

Like Collins, Berdoe was 'immersed in the literary culture of the anti-vivisectionist movement' and a 'strong believer in the power of combining science with imagination'.[95] Although not a member, Collins attended some VSS meetings at which Berdoe spoke, making it likely that the pair met. Waddington writes that,

> [b]oth were influenced by Cobbe to write romances that melded fact and fiction to win support for anti-vivisection. They drew on the same anti-vivisection motifs […] and the anti-vivisectionist ideas expressed by Lewis Carroll, Cobbe and others.[96]

Contemporary critics also seemed to note the correspondence. Describing *St Bernard's* as 'a novel with a purpose, or rather a purpose with a novel attached', the *Pall Mall Gazette* echoed its review of *Heart and Science* four years prior.[97] However, whereas *St Bernards*' propaganda element roused interest, Collins's novel was judged to be a misdirection of literary talent. In 1889, the poet, fiction-writer, and critic Archibald Charles Swinburne encapsulated a prevailing view of *Heart and Science* in a wry couplet: 'What brought good Wilkie's genius nigh perdition? Some demon whispered –

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[90] Wilkie Collins, 'Letter to Surgeon-General C. A. Gordon, 13 July 1882', reprinted in Wilkie Collins, *Heart and Science, A Story of the Present Time*, ed. Steve Farmer (Toronto: Broadview, 1997), p.371.
[91] Wilkie Collins, *The Letters of Wilkie Collins, Vol 2: 1866-1889*, ed. William Baker and William M. Clarke (New York: St Martin's Press, 1999), p.451.
[92] Wilkie Collins, 'Letter to Frances Power Cobbe, 23 June 1882', reprinted in Cobbe, *Life of Frances Power Cobbe*, p.558.
[93] Ibid., p.559.
[94] Ibid. [emphasis in original].
[95] Waddington, 'Death at St Bernard's', p.253.
[96] Ibid.
[97] [Unsigned], 'A Medical Romance', *Pall Mall Gazette*, 46.7053 (25 October 1887), 3; [Unsigned], 'Mr Wilkie Collins's New Novel', *Pall Mall Gazette*, 37.5641 (27 April 1883), 4; Waddington, 'Death at St Bernard's', p.252.

"Wilkie! Have a mission"'.[98] More recently, Valerie Pedlar described the novel as an 'unashamed piece of polemic cast in fictional form' with 'the tone of a manifesto'.[99]

Marie Louise de la Ramée, better known by her pen name Ouida, was a popular writer of middlebrow fiction whose eccentric life, politics, and works attracted public interest.[100] Her biographer Elizabeth Lee writes that she never hesitated 'to descend into the public arena, and to plead for those who were down-trodden and oppressed, whether human beings or dumb animals', although her opinions were 'rarely on the winning side'.[101] Although Lee's claim that the writer was 'obsessed with an idea of her extraordinary influence in European politics' seems an overstatement, Ouida wholeheartedly believed that novelists like herself could catalyse social change, and wrote voraciously to that purpose.[102] Although she moved to Tuscany after 1871 and returned to England only once thereafter, her letters and her literary and social criticism regularly appeared in the British press, especially the *Fortnightly Review*. Ouida's antivivisection sympathies and love for animals were often a topic of discussion in animal welfare and antivivisection writings. *Animal World*, *Animals Guardian*, and the *Home Chronicler* highlighted her opposition to dog-taxes and muzzling practices while the BUAV included her alongside other notable 'leaders of the anti-vivisection movement' such as Thomas Carlyle, Alfred Tennyson, John Ruskin, and Robert Browning.[103] A notorious cynophile, she was charged several times for failing to handle her thirty pet dogs.[104]

Ouida's resistance to the 'expanding empire of science' was the most significant cause of her animal activism.[105] In her essay 'Some Fallacies of Science' (1885) she claimed 'to fight on the side of the humanities' while in 'The Future of Vivisection' (1882) and 'The New Priesthood' (1893) she warned that animal experimentation led to human vivisection.[106] She unrelentingly slandered the vivisector's character, imploring readers to imagine him 'eating and drinking, jesting

98 Algernon C. Swinburne, 'Wilkie Collins', *Fortnightly Review*, 46.275 (1 November 1889), 589-99 (p.598).
99 Valerie Pedlar, 'Experimentation or exploitation? The investigations of David Ferrier, Dr Benjulia, and Dr Seward', *Interdisciplinary Science Reviews*, 28.3 (2003), 169-74 (p.172, p.171).
100 Celia Phillips, 'Ouida and her Publishers: 1874-1880', *Bulletin of Research in the Humanities*, 81.2 (1978), 210-15; Jane Jordan, 'Ouida. The Enigma of a Literary Identity', *Princeton University Library Chronicle*, 57 (1995), 75-105.
101 Elizabeth Lee, *Ouida: A Memoir* (London: T. Fisher Unwin, 1914), pp.5-6.
102 Ibid., p.108.
103 Ouida, '"Ouida" on Dogs', *Home Chronicler*, 4.87 (16 February 1878), 106-7; [Unsigned], 'The Dog Poisoning in Italy', *Anti-Vivisectionist*, 7.200 (10 July 1880), 430; Ouida, 'Ouida on the Long-Distance Ride', *Animals Guardian*, 3.3 (December 1892), 43; Ouida, '"Ouida" on the Dog Question', *Zoophilist*, 7.6 (1 October 1887), 97; [Anon.], 'Views of Men and Women of Note on Vivisection', p.8.
104 Richard Ambrosini, 'Politicising the Aesthetic: Ouida's Transnational Critique of Modernity', in *Ouida and Victorian Popular Culture*, ed. Andrew King and Jane Jordan (London: Routledge, 2013), pp.166-81.
105 Ouida, 'Some Fallacies of Science', *North American Review*, 142 (February 1886), 139-52 (p.150); Lyn Pykett, 'Opinionated Ouida', in *Ouida and Victorian Popular Culture*, ed. Andrew King and Jane Jordan (London: Routledge, 2013), pp.147-64 (pp.159-60).
106 Pykett, 'Opinionated Ouida', p.159; Ouida, 'The Future of Vivisection', *Gentleman's Magazine*, 252 (1882), 412-23 (p.415); Ouida, *The New Priesthood* (London: E. W. Allen, 1893).

and love making […] then returning to his laboratory to devise and execute fresh tortures, his hands steeped in blood'.[107] 'Let the world realise', she proclaimed, this 'is no fictitious character, no creature of phantasy, no figure of imagination, but is a fact; that he, and such as he, exist in scores'.[108] She denounced his 'temper of absolute callousness to the sufferings of others […] absolute deadness to any consciousness or feeling of his victim' and warned that moral blight was more pressing than physical sickness, that 'cold-heartedness produces more misery than the cholera'.[109] Although Ouida was isolated from some protest activities while abroad, the style of her critique and her vision of art, letters, and literature as means of political intervention mirrored that of the movement's. In Edward Linley Sambourne's 'fancy portrait series' for *Punch*, she is depicted as an eccentric bohemian in Dutch dress with a faithful dog by her side (see Fig. 18). Although known while in London for her extravagant *soirées* attended by notable writers and antivivisectionists including Collins and Browning, the reference to *Hamlet* plays up her apparent misanthropy.

OUIDA.

" O fie ! 'tis an unweeded garden."—*Hamlet*, Act I., Scene 2.

Figure 18. Edward Linley Sambourne, 'Punch's Fancy Portraits', *Punch*, 45 (20 August 1881), 83.

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[107] Ouida, *The New Priesthood*, pp.13-14.
[108] Ibid., pp.13-14.
[109] Ouida, 'The Future of Vivisection', p.420.

Textual strategies

Given Berdoe and Hadwen's positions in the movement and their relationships with Cobbe, it is unsurprising that *St Bernard's* and *Dr Deguerre* require readers to 'study the facts' to unmask the cruel realities of vivisection. Both authors fed 'anti-vivisection's need to constantly solicit and create literate readers of scientific and governmental materials'.[110] Hadwen chose a series of formal debates to structure his text while Berdoe addressed discrete themes in 'episodes'.[111] References to hundreds of ancillary texts, statistics, and contemporary events reflected their intention to educate and persuade more than to entertain. Indeed, Berdoe decided to write 'a story, as interesting as might be, embracing all the facts' because 'a treatise on hospital management would have fallen still-born from the press'.[112] Hadwen was keen to emphasise that his was 'no idle romance' and the characters 'by no means fanciful' (8). 'The incidents are real' he insisted, 'the conversations replete with facts' (8). Indeed, some readers were exasperated by his heavy-handed propaganda agenda, and the extent to which the scientific 'background' compressed the literary 'foreground'.[113] Almost a decade after *Dr Deguerre* was published, one contributor to an American medical journal declared:

> It is apparently an attempt to place the entire case of the antivivisectionist before the general reader in story form. However, the story is conspicuous most of the time by its absence […]. It would be nothing less than cruelty to animals to recommend to any one that he attempt to read this volume.[114]

In the novel, a BUAV pamphlet handed to a member of the 'Argumentative Club' first stokes debate and precipitates a barrage of ancillary texts which punctuate the narrative. With alarming serendipity, characters whip out paperwork to prove their point. Even minor figures just happen to have on their person 'the average annual attack-rate of "Malta Fever" and "Simple Continued Fever" together, for the three populations in Malta – army, naval, and civil – for the nine years, 1897 to 1905' (242). 'These characters instruct one another', complained the *Saturday Review*, 'with long tables of statistics properly selected to make the points in the author's encyclopaedia of dullness'.[115] Hadwen's textual strategy over-determines plot and drains characters of life, but it is crucial to making his point that the inexorable conversion of Dr Deguerre is achieved through an appeal to reason and evidence. Of course, the unspoken hope is that uninitiated readers will be converted along with the doctor.

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[110] Frances Power Cobbe, *A Charity and a Controversy* (London: VSS, 1889), p.2; Hamilton, 'Reading and the Popular Critique of Science', p.74.
[111] Pittard, *Purity and Contamination in Late Victorian Detective Fiction*, p.157.
[112] Edward Berdoe, *Dying Scientifically: A Key to St Bernard's* (London: Swan Sonnenschein, 1888), pp.5-6.
[113] Hamilton, 'Reading and the Popular Critique of Science', p.73
[114] [Unsigned], 'The Difficulties of Dr Deguerre', *Journal of the American Medical Association*, 87.16 (1926), 1325.
[115] Ibid.

Although 'a good, clever, honest fellow' (200), Dr Deguerre is initially complacent about his ability to win the debate. He plans to bamboozle the laymen at his Club with a few choice arguments from Simpkins's book, *The Value of Vivisection*. Yet the paucity of his arsenal and the inadequacy of his research is quickly exposed; Deguerre is routed by his non-scientific opponents who come armed with varied sources, including half-a-dozen blue books, a passage from the Italian Archives of Biology, a copy of the *Abolitionist*, and several pamphlets (250). The Club is an idealised microcosm within which the antivivisection vision of the debate can play out: it is 'open to students of all branches of learning' (19) and the Bishop, stockbroker, Professor, barrister, and editor are a testament to the movement's claim that any intelligent and well-informed layperson could critique specialist and technical topics. Together they 'force' Deguerre to 'study the facts' and he becomes an antivivisectionist 'against all [his] inclinations and medical training' (477). Antivivisection propaganda often included staged 'debate' scenes.[116] The device allowed writers to strictly define the parameters of the question, assemble a limited number of materials for assessment, and offer readers a sense of active participation. Hadwen extended the usual conversion arc across his entire plot rather than presenting it as a discrete episode (as Collins did in chapter 32 of *Heart and Science*). Dr Deguerre's daughter, the antivivisectionist heroine Marjorie, provides some relief from the profit-and-loss antivivisection arguments by delivering the emotional and ethical side of the issue.

Berdoe also used ancillary material. Rather than pepper the pages of his novel, however, he published 'details of cases reported in medical journals' and 'statements made by lecturers of distinction' in a separate reference compendium titled *Dying Scientifically, A Key to St Bernard's* (1888).[117] Cobbe regarded this digest, which allowed readers to figuratively 'unlock' the doors to the teaching hospital, as even more important than his 'remarkable book'.[118] Berdoe further alluded to fiction's revelatory power via his literary borrowings. Despite claiming that three quarters of *St Bernard's* was 'stern reality' whilst the remaining quarter of romance was 'a concession to the weakness of our nature', he 'plundered other literary texts and genres' which sold well for popularisers of science.[119] In fact, literary allusions often playfully reiterate the novel's factual basis. For instance, the narrator teases that the coincidental meeting of Crowe, Elsworth, and Lee in Granada – that 'familiar triangle of hero, heroine, and villain' – would 'appear far-fetched and absurd if transferred to the pages of a novel' (239). Furthermore, by using a series of curious medical case-histories to present accounts of negligence, Berdoe set the gothic interest in taboos

[116] See, for example, George Savage, 'A Working Man on Vivisection: Vivisection – what is it? A Popular Dialogue between two working men', *Home Chronicler*, 49 (26 May 1877), 774-75 (p.775).
[117] Quoted in Frances Power Cobbe, 'The Scientific Spirit of the Age', *Contemporary Review*, 54 (1888), 126-39 (p.136).
[118] Ibid.; Graham Mooney and Jonathan Reinarz, *Permeable Walls: Historical Perspectives on Hospital and Asylum Visiting* (Amsterdam: Clio Medica, 2009).
[119] Berdoe, *Dying Scientifically: A Key to St Bernard's*, p.9; Waddington, 'Death at St Bernard's', p.257.

and abuses of power alongside a 'realist clinical discourse' that bolstered the impression that he was writing about actual patients.[120] He even incorporated elements of detective fiction to reveal Crowe's crime.[121] By intermixing these borrowings, Berdoe forwarded the movement's rhetoric of revelation through attentive reading and sanctioned literary approaches to scientific works.

*St Bernards'*s generated 'considerable alarm' in swathes of the middle classes 'wearied by hospital appeals, [and] worried about the need for hospital reform'.[122] The Society for the Protection of Hospital Patients was founded a decade after the novel's publication, and by the 1900s numerous writers, including Hadwen, were objecting to the treatment of the sick poor and highlighting problems such as overcrowding and high infection rates.[123] Although the *BMJ* cried slander and the *Lancet* stingingly remarked that the book would 'serve no useful purpose', the wider press was more favourable.[124] The *British Weekly*, a journal of social and Christian progress, declared that *St Bernard's* could not be ignored and the evening newspaper the *Pall Mall Gazette* believed that the account (published pseudonymously under the name of Æsculapius Scalpel) was written by 'one who has had means of knowing [...] [hospitals] intimately'.[125] One surgical registrar tried to rectify this view, writing to the editor of the *Pall Mall Gazette* to defend the care carried out in London's hospitals and to denounce *St Bernard's* as 'a very foolish book' which 'can only do harm among those ignorant of the real work carried on'.[126]

Berdoe, a prolific Robert Browning critic as well as a physician, believed that medico-scientific and literary pursuits were complimentary within their proper frameworks.[127] Like *Dying Scientifically* which provided access to the inside of the hospital, the *Browning Cyclopaedia* (1897) helped readers exceed superficial understandings which 'a careless perusal of the poem would afford' and find meaning which 'lies more or less below the surface'.[128] In the foreword, Berdoe equated the methods required to uncover literary meanings with the scientific skill necessary to establish internal physiological mechanisms and structures:

> When one has spent days in tracing a nerve thread through the body to its origin, and through all its ramifications, a few visits to the library of the British Museum, or a few

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[120] Waddington, 'Death at St Bernard's', p.259.
[121] Pittard, *Purity and Contamination in Late Victorian Detective Fiction*, chapter 4.
[122] Waddington, 'Death at St Bernard's', p.247.
[123] Ibid., p.262.
[124] [Unsigned], 'Notes on Books', *BMJ*, 2 (1887), 865; Berdoe, *Dying Scientifically: A Key to St Bernard's* p.10.
[125] Waddintgon, 'Death at St Bernard's', p.261; Berdoe, *Dying Scientifically*, pp.9-10; [Unsigned], 'A Medical Romance', p.3.
[126] [Surgical Registrar], 'A Medical Romance' [Letter to the Editor], *Pall Mall Gazette*, 46.7056 (28 October 1887), 6.
[127] Edward Berdoe, *Browning's Message to His Time* (London: Swan Sonnenschein, 1890); Edward Berdoe, *Biographical and Historical Notes to Browning's Complete Works* (London: Smith Elder, 1894); Edward Berdoe, *Browning and the Christian Faith* (New York: Haskell House, 1896); Edward Berdoe, *A Primer of Browning* (London: Routledge, 1904); Edward Berdoe, *Browning Studies* (London: G. Allen, 1895).
[128] Edward Berdoe, *The Browning Cyclopaedia. A guide to the study of the works of Robert Browning. With copious explanatory notes and references on all difficult passages* (London: Swan Sonnenschein & Co., 1897), pp.vii-viii.

hours' puzzling over the meaning of a difficult passage in a poem, do not deter him from solving a mystery.[129]

Here, scientific and literary proficiencies resemble each other and are mutually beneficial. Indeed, the narrator of *St Bernard's* opines that 'a purely scientific education' promoted selfishness and insists that a 'hospital education [...] should only be permitted in conjunction with a liberal university training' (109). Literature in particular, 'ennobles and subdues self, and inspires with great and generous thoughts as does no other human learning' (109). Reading *Paracelsus* cures Elsworth's moral and methodological ills (more discussion of this to follow), but fiction can also alleviate physical afflictions. The novel refers to a case of hysteria involving a woman so mentally enfeebled by gynaecological treatment that it is believed that she is paralysed from the waist down. However, when 'a true mind doctor' 'took his seat by the couch of the invalid he soon diagnosed her malady' (101). Upon realising she was of 'high intellectual culture' he reads to her:

> The doctor was an admirable reader, and his rendering of a long and soul stirring passage from one of the great poets made the girl forget her ailment so completely that she sprang from her couch with energy as he paced the room declaiming the poem [...]. The deluded woman found the complete use of her limbs, and a few more readings cured her without other medicine. They don't teach this sort of things in hospitals, – not the curative part at least. Examiners at the colleges would 'plough' the man who ventured to propose readings from Shakespeare three times a week with dramatic action as a remedy for hysteria. (101-02)

This 'mind doctor' is 'an admirable reader' partly because of his poetic rendition, but also because he successfully diagnoses his patient simply by careful observation. His treatment restores her spirits and her limb function without recourse to surgery. Although the scene affirms the value of a literary education, Berdoe does warn against narrow book-learning. He insists that balance between practice and theory is key to medico-scientific training; we are reminded of the 'few books, dictionaries, grammars, and guides' jostling against the medical appliances in Elsworth's 'slender luggage' as he travels across Spain to heal the sick-poor (153).

Unlike Hadwen and, to a lesser extent, Berdoe, Collins 'spares [readers] a long list of books consulted, and of newspapers and magazines mutilated for "cuttings"' (4). Instead, he assures 'readers in particular' of his 'promiscuous reading' (4) and includes a few pertinent details. We are informed that Carmina's condition 'is not (as you may suspect) the fantastic product of the author's imagination' but is based on David Ferrier's research on the 'Localisation of Cerebral Disease' (4), and that Collins submitted his manuscript for correction by an eminent London surgeon (3). Likewise, when Mrs Galilee mentions the Diathermancy of Ebonite, readers are directed to 'a convesazione in honour of Professor Helmholtz (reported in the "Times" of April 12, 1881)' (39).

[129] Ibid., pp.viii-ix.

Yet *Heart and Science* also warns against the fetishisation of knowledge, and especially of slavish devotion to scientific study. The Galilee family library, a shrine to the 'learned lady' (28) whose matriarchal portraits hangs upon the wall, is a scientific rather than a literary space. The books there, such as the *Curiosities of Coprolites,* are written by 'Mr Always Right and Mr Never Wrong', whom Collins's narrator disparages as 'lively modern parasites […] eager to invite your attention to their little crawling selves' (286). Such criticisms were common in antivivisection propaganda and fiction. Collins's bitter castigation of scientists' self-aggrandizement – that they flatter each other 'in terms that would be exaggerated if they were applied to Newton or to Bacon' (286) – echoed Lewis Carroll's chastisement of '"original researchers" who pant for "endowment"'.[130]

In 'Fame's Penny Trumpet', Carroll also compared modern scientists unfavourably to great philosophers like Plato who 'paced serene' or scientists like Newton who 'paused with wistful eye'.[131] Like the toy-instrument of the title, contemporary researchers are attention-seeking, unpleasant, and poor imitations of the 'real thing'. Some of the verses, along with the accompanying illustration by Arthur B. Frost which was included when the poem was published as part of *Rhyme? And Reason?* in 1883, satirise the sorts of scientific soirées that Mrs Galilee hosts (see Fig. 19):

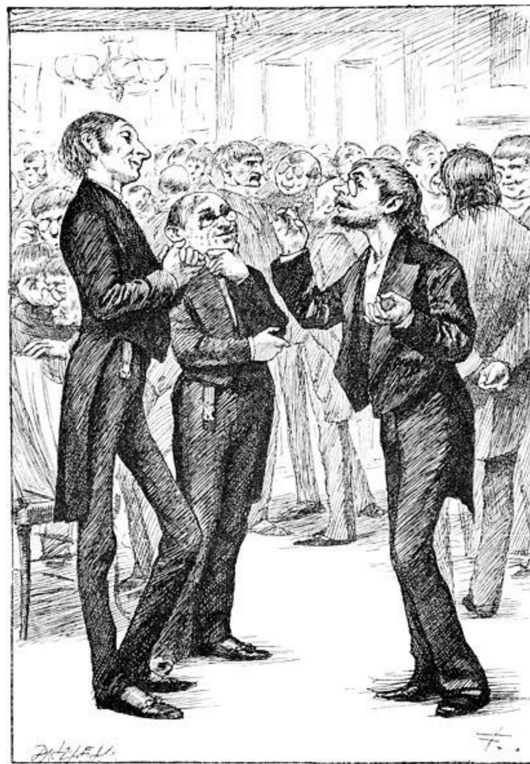

Figure 19. Arthur B. Frost, 'Go, Throng each other's drawing rooms' [Illustration], in Lewis Carroll, *Rhyme? And Reason?* (London: Macmillan & Co., 1883), p.142.

130 Carroll, 'Fame's Penny Trumpet'.
131 Ibid., ll.9-10

Go, throng each other's drawing-rooms,
Ye idols of a petty clique:
Strut your brief hour in borrowed plumes,
And make your penny-trumpets squeak.

Deck your dull talk with pilfered shreds
Of learning from a nobler time,
And oil each other's little heads
With mutual Flattery's golden slime:[132]

Mrs Galilee's narrow and earthly interests, in fossilised dung for example, sharply contrast with 'artistically-inclined' Carmina's passion for poetry.[133]

Yet, Carmina's appreciation of poetry alone cannot shield her from Benjulia and Mrs Galilee's insidious influence. Although the nervous lawyer and amateur horticulturalist Mr Mool is an unlikely hero, his administrative labour and painstaking textual analysis protects Carmina and facilitates the tale's romantic resolution. He prevents mis-readings of Robert Graywell's last will and exposes the 'false report' (236) about Carmina's illegitimacy by conducting interviews and recovering a crucial witness statement. Upon trying to decipher her father's will, Carmina's indebtedness to Mool becomes apparent; the document, which is written in 'an unknown tongue' full of 'strange words', 'perpetual repetitions', and an 'absence of stops', leaves her 'utterly bewildered' (153). Mool is more than 'a middleman who carries information' or the 'the repository of the novel's data': he interprets as well as transports texts.[134] In fact, Straley suggests that Mool 'embodies the ethical potential of the literary text' by translating the vivisector's touch into harmless, even beneficial, sensations.[135] Indeed, Benjulia instructs Mool to transmit his usual message to Zo: 'Put your finger on her spine – here, just below the neck. Press on the place – so. And, when she wriggles, say, "With the big doctor's love"' (220). Mool absorbs and softens the vivisector's unnerving touch and ensures that 'only the gentle pulsations of newfound sympathy and love reach us through the mitigating medium of text'.[136] This not only reflects Collins's desire not to shock his readers, but also projects the movement's vision of fiction expanding feeling.

Like Berdoe, Collins sets narrative firmly at the core of a humane medical practice which, Tabitha Sparks notes, 'positions "proper" medicine within the context of the scholarly and not the

[132] Ibid., ll.29-36.
[133] Erika Behrisch Elce, '"One Remarkable Evening": Redemptive Science in Wilkie Collins's *Heart and Science*', *Journal of Literature and Science*, 7.1 (2014), 41-54 (p.41).
[134] Straley, 'Love and Vivisection', p.371.
[135] Ibid., p.370.
[136] Ibid.

experimental tradition'.[137] At the novel's outset, Ovid and Benjulia are set on parallel paths. Both men are ambitious, overworked, and, like Benjulia who is always coldly polite, Ovid is 'cool' (48) with women. We are told that the young medic could be 'rather abrupt' with patients because 'his quick perception hurried him into taking the words out of their mouths (too pleasantly to give offence) when they were describing their symptoms' (67). Erica Behnisch Elce also notes that both men are secretive about their research: 'Benjulia's laboratory has no windows, while Ovid's unfinished manuscript […] remains "locked up" whenever he is not working on it'.[138] Fortunately, Carmina arrives at the crucial moment to soften Ovid's heart and prompt a change in his medical practice. Indeed, it is his increasingly empathetic bedside manner and his ability to decode medical texts within a literary or narrative framework which cures her. Whilst recovering his health by resting and rambling in the Canadian countryside as the guest of the antivivisectionist Dr Morphew (whose name might be suggestive of the pain-relieving drug morphine) he assists at the bedside of another dying doctor who thanks him by gifting him an old book. Ovid initially thinks the 'obscure' and 'grammatically incorrect' script is without value (141). After finding a pertinent passage on brain disease, however, he studies the text 'hour by hour […] until his mind and the mind of the writer were one' (326). To his astonishment, Ovid discovers that the recently deceased doctor had solved the problem of brain disease, hitherto 'the despair of medical men throughout the whole civilised world' (141). Ovid performs a pointedly literary role both in the discovery of Carmina's illness (foretold by his namesake the Roman poet) and in his efforts to 'translate the import of that book into humane medical treatment'.[139] Upon his return to London, he atones for his previously brusque manner by making house-visits to his patients. As Elce points out, Collins's novel does not castigate all science or scientists as critics like Patricia Murphy, Farmer, and Laurence Talairach-Vielmas have suggested.[140] Instead, the author rejects particular methods, such as vivisection, and forwards medico-scientific practices which encourage 'human sympathies to grow rather than atrophy'.[141]

Benjulia, to his detriment, discards human narrative as irrelevant or obtrusive to medico-scientific practices.[142] When Dr Morphew describes Ovid's patient in a letter, the vivisector angrily reviles him as '"a born idiot" for not having plainly stated what the patient's malady was, instead

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[137] Tabitha Sparks, 'Surgical Injury and Narrative Cure in Wilkie Collins's "Poor Miss Finch" and "Heart and Science"', *Journal of Narrative Theory*, 32.1 (2002), 1-31 (p.17).
[138] Elce, '"One Remarkable Evening": Redemptive Science', p.48.
[139] Sparks, 'Surgical Injury and Narrative Cure', p.23.
[140] Elce, '"One Remarkable Evening": Redemptive Science', p.41; Patricia Murphy, *In Science's Shadow: Literary Constructions of Late Victorian Women* (Columbia: University of Missouri Press, 2006), p.112; Farmer (ed.), 'Introduction', in *Heart and Science*, p.13. Laurence, Talairach-Vielmas, *Wilkie Collins, Medicine and the Gothic* (Cardiff: University of Wales Press, 2009), p.153.
[141] Elce, '"One Remarkable Evening": Redemptive Science', p.41.
[142] Sparks, 'Surgical Injury and Narrative Cure', p.23.

of wasting paper on smooth sentences encumbered by long words' (183). Sparks notes that Benjulia's impatience with story-telling and frustration with bothersome 'long words' are a double slur: 'they depict Benjulia as a bad reader and a doctor divested of the human element of medicine'.[143] Thereby, Collins 'alienates Benjulia further from the (reading) audience, and elects that audience, as good readers, to the privileged side of medical practice – that which implicitly is mediated by and through the literary romance at hand'.[144] The two self-proclaimed antivivisectionists – Mr Morphew, and Benjulia's brother Lemuel (a publisher's clerk) – combine scientific know-how and literary style to launch a double threat. The latter warns:

> Morphew's going to write a book against you – and he asks me to get it published at our place. […] I can lay my hand on literary fellows who will lick his style into shape – it will be an awful exposure! (174)

In fact, it is Ovid's own book that catalyses Benjulia's downfall, prompting him to realise that he has tried to extract information from within the body, that was recorded upon its surface all along. The cause and cure of brain disease has been 'wholly derived from the results of bedside practice' without any resort to 'the useless and detestable cruelties which go by the name of vivisection' (309). Benjulia is, at last, undone; 'You have taken something from me, which was dearer than life' (339) he tells Ovid bitterly. Amongst his possessions, his footman finds medical newspapers 'scattered about in the wildest confusion', including 'a crumpled leaf, torn out': a review of Ovid's book (337). Upon this scrap the footman reads 'some curious things […] especially about a melancholy deathbed at a place called Montreal – which made the Preface almost as interesting as a story' (337). By retaining the story which led to his medical discovery, Ovid embeds science within a narrative-framework.

Yet, as a darkly humorous scene between Benjulia and his cook illustrates, non-scientific characters can also be 'bad readers'. Under the short-lived illusion that he has solved the 'grand problem' of brain disease, Benjulia orders a celebratory meal at three o'clock sharp. His cook, an avid novel-reader, 'put[s] her own romantic construction' (212) upon the trivial gift of a hand-screen and concludes that Benjulia admires her. Becoming lost in Samuel Richardson's *Pamela* (1740), she spoils the dinner. When summoned, the cook, still stirred by Richardson's story of a maid who marries her master, mistakes the vivisector's invitation to sit down as another sign of admiration. As she obligingly recounts the novel's plot at his request, she becomes convinced that Pamela's story will become her reality and her blushing bosom 'showed signs of tender agitation – distributed over a large surface' (213). After giving the synopsis, the servant is surprised that her husband-to-be seems unmoved. The narrator warns:

[143] Ibid., p.20.
[144] Ibid.

> If the cook had been one of the few miserable wretches who never read novels, she might have felt her fondly founded hopes already sinking from under her. As it was, Richardson sustained her faith in herself; Richardson reminded her that Pamela's master had hesitated, and that Pamela's Virtue had not earned its reward on easy terms. (214)

Benjulia, meanwhile, has already started to 'pursue[] his own ends with a penitent cook, just as he pursued his own ends with a vivisected animal' (214). He looks 'experimentally at the inferior creature seated before him in the chair, as he looked (experimentally) at the other inferior creatures stretched under him on the table' (214). Calmly noting her unsuspecting, passionate gaze, he tells his own story, casting himself as 'Mr A' and she as 'Miss B' (215). Being an eager theatre-goer, the woman recognises 'that notable figure in the drama – the man who tells his own story, under pretence of telling the story of another person' (215). She enthusiastically throws her arms around Benjulia's neck and prepares for his declaration of devotion. Unruffled, Benjulia continues with his version of the story:

> And what did Mr. A. do next? […] He put his hand in his pocket – he gave Miss B. a month's wages – and he turned her out of the house. You impudent hussy, you have delayed my dinner, spoilt my mutton, and hugged me round the neck! There is your money. Go. (214)

Upon encountering this unexpected narrative shock, the cook finally loses the plot. First, she stands surprised 'with glaring eyes and gaping mouth […] like a woman struck to stone', before 'rage burst out of her in a furious scream' and she snatches up a knife (214). As Benjulia disarms her and laughs manically, the cook's fury is 'frozen by terror' and 'wild horror' as she sees 'something superhuman in the doctor's diabolical joy' (214). After she retreats to her kitchen, Benjulia realises that he has cut his experiment short: 'a violent moral shock sometimes has a serious effect on the brain – especially when it is the brain of an excitable woman. […] the cook – after her outbreak of fury – might be a case worth studying' (217). To his disappointment, his employee has already found relief by expelling emotion in tearful solitude: 'her brain was safe; she had ceased to interest him' (217).

Collins's suggestion that voracious fiction-reading and theatre-going could provoke extreme emotions or set up expectations about character, role, or plot which impede interpersonal understanding is an odd one for a sensation writer, especially one advocating for a decidedly literary cause. The cook's misinterpretation might point to her lack of consideration for genre, rather than signalling a failure of narrative itself: she imposes a romance story upon scientific subject-matter. Hers is also the common failing of the naïve reader of romance: a more critical approach might have been more fruitful in detecting emotional subtext. Possibly, however, her error lies in having attempted an incisive, in-depth reading at all. Had she focused on what was evident on the surface and interpreted Benjulia's actual appearance and speech, she would not be bawling in the kitchen.

In fact, the cook has performed a kind of physiological experiment. Collins describes how her misplaced confidence grows as she recites the synopsis of *Pamela*. She 'lifted her eyes experimentally' (213), to see if the story had produced any romantic effect on Benjulia's body-language or facial expressions. Albeit benign, this experimental flirtation mirrored contemporary efforts to connect certain stimuli with particular physiological responses. Despite linking reading and medicine, deciphering the vivisector's body seemed to require a different approach to analysing the page. Neither the incisive approach of the critic nor the artless gaze of the womanly reader are presented as appropriate.

Reading the body

Since vivisectors contradicted one another in written and verbal statements, activists regarded their bodies as sites which might unwittingly betray psychological and emotional truths. Antivivisection fiction tended to contain sentimental or melodramatic elements; non-verbal communication is often exalted and somatic gestures presented as authentic indicators of emotional states. These bodily signs were further prized as part of a shared, 'natural' human-animal language.[145] Gilbert notes that the nineteenth century saw a flurry of scientific and philosophical publications on the skin which was no longer just considered a wrapping, but instead 'a substance integral to and having a creative role in the generation of the self'.[146] 'For Victorians', she writes, 'the skin was a text to be read, a medium for the expression and interpretation of interiority'.[147] Many anti-vivisection authors used textual terminology to call readers' attention to the body's surface upon which they might read symptoms of affective states or pathological complaints such as increasing pulse rates or changing skin tone. Whereas a critical eye and an ability to detect and dissect textual meaning was crucial to the antivivisectionist approach to reading books, reading bodies required less invasive strategies to avoid forms of critique which looked too much like vivisection itself.

Anxieties about new medico-scientific access to the body (whether via technological or surgical advances) pervaded the movement against live animal experimentation, as well as the anti-vaccination and social purity crusades in which antivivisectionists also played a large part.[148] Although by the late nineteenth century Louis Pasteur and Robert Koch had convinced fellow

[145] Swinkin, 'The Limits of Sympathy', p.43.
[146] Gilbert, *Victorian Skin,* p.1.
[147] Ibid.
[148] French, *Antivivisection and Medical Science,* p.230; Judith Walkowitz, *Prostitution and Victorian Society: Women, Class and the State* (Cambridge: Cambridge UP, 1890), pp.126-27; Pittard, *Purity and Contamination in Late Victorian Detective Fiction*, p.156; S. E. D. Shortt, 'Physicians, Science and Status: Issues in the Professionalization of Anglo-American Medicine in the Nineteenth-century', *Medical History,* 27 (1983), 51-68.

scientists of 'germ-theory' and its revolutionary implications for public health, the miasmic model remained a potently popular idea of disease. As Christopher Pittard observes, 'miasma was evident to the senses of all' whereas germ-theory posited that sickness was caused by microscopic forces, which meant ceding 'epistemological authority to the scientist who could operate such machinery'.[149] For antivivisectionists, the choice was simple, especially since the former model posited that stamping out vice and improving sanitation reduced disease, whilst the latter was closely tied to Pasteur's rabies experiments. As the family doctor's sympathetic bedside practice was displaced by larger metropolitan hospitals, questions surrounding the surgeon's emotional register and motivations were raised in Britain and the US.[150] Might he, like the vivisector, be keener to claim the 'fame and fortune [that] awaited the surgical pioneer who first laid the knife to some hitherto untouched part' than to act in his patient's best interests?[151] What kinds of treatment (both medical and interpersonal) could one expect at larger clinics with their adjacent laboratories?[152] These worries connect Benjulia's withdrawal of treatment from Carmina and his animal experiments: both result from the 'professional opportunism that surgical medicine increasingly connoted'.[153] Indeed, those vivisectors who compared their motivation to operate to that of the surgeon's might have raised more worries than they assuaged.

Before the mid-century, nursing was regarded as unskilled and even immodest employment. However, as treatment outside the home became commoner, demand for higher levels of care increased and, from the 1860s, training schools produced capable nurses who were welcomed by hospital authorities. Florence Nightingale helped develop and promote a vision of modern nursing which epitomised the observational and interpersonal skills that antivivisectionists prized. For the care-giver's convenience and the patient's comfort, she advocated 'pavilion wards' arranged so that 'the head nurse may have all her sick under her eye at once'.[154] In *Notes on Nursing* (1859), she emphasised the 'vital importance of *sound* observation', and cautioned that,

> it must never be lost sight of what observation is for. It is not for the sake of piling up miscellaneous information or curious facts, but for the sake of saving life and increasing health and comfort. […] It is quite surprising how many men (some women do it too), practically behave as if the scientific end were the only one in view.[155]

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[149] Pittard, *Purity and Contamination in Late Victorian Detective Fiction*, p.173.
[150] White, 'Sympathy Under the Knife', p.116; Martin S. Pernick, 'The Calculus of Suffering in Nineteenth-Century Surgery', *Hastings Centre Report*, 13.2 (1983), 26-36; George Bernard Shaw, *The Doctor's Dilemma* (London: Penguin, 1987).
[151] Roy Porter, *The Greatest Benefit to Mankind: A Medical History of Humanity* (New York: Norton, 1999), p.599.
[152] N. D., Jewson, 'The Disappearance of the Sick Man from Medical Cosmology, 1770–1870', *Sociology*, 10.2 (1976), 225-44.
[153] Sparks, 'Surgical Injury and Narrative Cure' p.2.
[154] Florence Nightingale, *Notes on Hospitals* (London: John W. Parker and Son, 1859), p.6.
[155] Florence Nightingale, *Notes on Nursing: What it is and what it is not* (1859; London: Duckworth, 1970), p.70 [emphasis in original].

Whereas the vivisector or surgeon looked past personhood to inspect a particular body part or problem, the ideal nurse looked at the intact whole. She (and it was invariably a woman), embodied a balanced, holistic approach to medicine. In the antivivisection novels, nurses repeatedly epitomise sound and sympathetic observation and are used to counter the vivisector's way of reading the body.

Berdoe's pseudonym, Æsculapius Scalpel, encompassed the tensions between medicine as an ancient therapeutic art and a modern interventionist science. In addition to sharply contrasting Elsworth's practice to that of his ethically corrupted peers, *St Bernard's* provides two opposing models of nursing: Nurse Podger accepts bribes to turn a blind eye to medical students experimenting on patients, whereas Sister Agnes is disgusted that patients are 'sacrificed to the growing taste for novelty in methods and instruments' (165). Like Cobbe, Berdoe regarded the trend for sending sick relatives to hospital as symptomatic of decaying affective and familial ties.[156] However, Sister Agnes provides a middle ground between home and hospital by founding a charitable antivivisection nursing facility, appropriately named 'The Nightingale Hospital'. This realises Mildred's dream of 'a sort of Hospital University' with 'affiliated colleges of healing. Not a great unwieldy Cathedral of Surgery […] but a Chapel of Ease at every sufferer's door' (254-55). Shared passion for hospital reform fosters Elsworth and Lee's romance as much as their complimentary literary tastes (242) and, upon returning to London, both dedicate themselves to 'The Nightingale Hospital'. Æsculapius' mythological daughters – Hygieia of sanitation, Iaso of recuperation, Aceso of healing, Aglea of the glow of health, and Panacea of the universal remedy – triumph over the scalpel.

In Collins's *Heart and Science*, Ovid, like Elsworth, becomes more nurse than surgeon. Once his 'tremulous nerves had gathered steady strength on the broad prairies and in the roving life' (320-21), he returns to heal Carmina through similarly natural, if rather vague, means: her recovery is 'aided by time, care, and skill' (331). Ovid watches vigilantly for changes to manifest on her body's surface and, when her pulse suddenly increases or her cheeks flush, he removes the offending stimuli to restore calm (331). Although the ever-precocious Zo unwittingly over-excites Carmina, she also acts a nurse's role, and her 'wonderful capacity for minute observation' (256) helps her predict that Carmina's sickness (whether lovesickness or brain disease) would be improved by Ovid's presence. Straley suggests that Zo's 'minute observations' which prompt her to write and beg Ovid to return, 'cure Carmina as much as any medicinal antidote the physician brings with him'.[157]

[156] Cobbe, 'The Education of the Emotions', p.241.
[157] Straley, 'Love and Vivisection', p.264.

Naturally, since antivivisectionists celebrated amateur healing methods that reinscribed familial medical care, the nurse's gaze is not confined to those who wear her uniform. In *Dr Deguerre*, Marjorie's Aunt, Miss Masterman, is 'not a professional nurse but [...] worth a dozen of them' (268), 'a thoroughly practical woman, fearless and capable in sickness, full of sympathy and common sense [...] just the kind of nurse Marjorie needed' (267). Standing in her clean white apron with a 'bright, homely face beaming' (179) and having successfully treated Marjorie with hot towels and a dairy-rich diet, Masterman informs Simpkins that his patient merely had quinsy; the false membrane he thought indicated diphtheria was simply clotted milk (279)! It doesn't matter that Simpkins and Dr Syringham's swab has tested positive for diphtheria bacillus; Masterman's own eyes rather than a microscope have reached the correct prognosis.

In Ouida's *Toxin*, non-professional nursing similarly prevails: the nuns who keep their vigil for Adrianis observe the fungus in his throat loosening and predict that, with regular doses of wine and meat essence, their patient will 'sleep himself well' (148). When his scheme to keep Adrianis's lover, and his mother at bay starts to crumble, the vivisector Damer intervenes. He knows 'the effect of affectation on the nervous system' and fears that familial and romantic love will give Adrianis 'the power of resistance and recovery' (158). The Princess's nursing abilities – her 'skill in illness' – makes her doubly threatening to Damer's designs (158).

Close examination of the body became associated with a discourse of reading which was taken up by both vivisectors and their opponents. Milburn explains that physiologists formed an interpretative community 'conditioned to observe "meaning" in wounds', and that vivisection 'constructed an epistemic frame of reference, a specific hermeneutic horizon, expanding beyond the physiological laboratory and into the media networks of Victorian culture'. He continues,

> the methodically wounded body *signifies*: it gives forth biological secrets from within its organic depths [...]. Enmeshed in the space of the experimental laboratory, manipulated and recreated by the scalpel and the graphical recording instrument, the vivisected body conveys meanings unavailable to the closed and contained body. In other words, the Victorian discourse on experimental physiology rendered vivisection as a media practice, and the vivisected body thereby became a vehicle for scientific communication, a book of blood.[158]

Antivivisectionists rejected the 'book of blood' in favour of the Book of Nature and presented the animal world as pages upon which God's divine Will was recorded. If Creation's secrets were available to the reverent witness, vivisectors were not only ineffective readers but also desecrators who, as Cobbe describes it, 'question Nature by tearing out all the leaves of her book'.[159]

[158] Milburn, 'Science from Hell', p.135 [emphasis in original].
[159] [Unsigned], 'The London Anti-Vivisection Society', *Anti-Vivisectionist*, 7.209 (May 1881), 53-72 (p.64).

In *St Bernard's*, reading *Paracelsus* opens Elsworth's eyes to the correct way to study the Book of Nature. Browning's sixteenth-century physician initially epitomises the antivivisection model of good medical practice; he encouraged physicians to use common sense, value careful observation, and practice humility.[160] As Berdoe noted in his *Browning Cyclopedia,* the Paracelsus of the poem also prefers to learn medicine and surgery from 'an old country nurse than from a university lecturer', mixes with 'the common people', and spurns 'filthy concoctions' to 'remedy in common-sense methods'.[161] His approach, however, lacks a crucial facet. In book two, he argues impetuously with Aprile, Browning's poetic ideal who aspires to love, art, and beauty. 'I am he that aspired to KNOW' he declares, 'and thou?' to which she replies, 'I would love infinitely, and be loved!'.[162] Elsworth has the same epiphany as Browning's Paracelsus: 'he has excluded love, as Aprile has excluded knowledge. They are two halves of one dissevered world'.[163] According to Berdoe, this is the poet's 'one great lesson': 'the lesson of the union of heart and head'.[164] In *St Bernard's,* Elsworth rectifies that which hindered his forbearer:

> Can we expect to reach the heart of Nature except by the royal road of love? Elsworth learned this in his voluntary exile, – learned that he could interrogate Nature, get at her secrets and apply them to the healing of mankind, when he had reverently put off the shoes from his feet and entered her temple as a worshipper rather than as the devastator. (176)

This clearly rejects the Bernardian depiction of the scientist's quest for knowledge as a battle with Nature: the 'drama[] of the human spirit confronting a brute world selfishly trying to conceal and defend its secrets'.[165] Many antivivisectionists complained that animal experimentation 'treated animals as mere matter and ignored the spiritual, aesthetic and moral aspects of life that, though intangible, had to be heeded if humankind's harmony with nature was to be restored'.[166] This raised moral as well as methodological problems; if vivisection was a 'crude and clumsy attempt to wrest Nature's secrets from her by force, rather than through skilful philosophic enquiry', it reflected badly on the 'judgement' and 'finesse' of those who resorted to it.[167] In his pro-science essay 'The Way the World is Going' (1927), H. G. Wells argued that antivivisectionists objected to 'the quiet determination of the clean-handed man with the scalpel', who 'is not driven by his feelings or cravings to do what he does, but by a will for abstract lucidity'.[168] 'The real campaign', he writes,

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160 Joseph F. Borzelleca, 'Profiles in Toxicology. Paracelsus: Herald of Modern Toxicology', *Toxicological Sciences*, 53 (2000), 2-4 (p.3).
161 Berdoe, *The Browning Cyclopaedia*, p.313, p.315.
162 Robert Browning, *The Paracelsus of Robert Browning*, ed. Christina Pollock Denison (1835; New York: Baker & Taylor, 1911), p.103.
163 Berdoe, *The Browning Cyclopaedia*, p.319; Browning, *The Paracelsus of Robert Browning*, p.63.
164 Berdoe, *Browning's Message to his Time*, p.155.
165 Lansbury, *The Old Brown Dog*, p.155.
166 Bates, *Anti-Vivisection and the Profession of Medicine*, p.5.
167 Ibid., p.24.
168 H. G. Wells, 'Anti-Vivisection: Popular Feeling and the Advancement of Science', in *The Way the World is Going: Guesses and Forecasts of the Years Ahead* (London: Ernest Benn Ltd., 1928), pp.221-30 (p.228).

> is against the thrusting of a scientific probe into mysteries and hidden things which it is felt should either be approached in a state of awe, tenderness, excitement, or passion, or else avoided. It is, we begin to realise, a campaign to protect a world of fantasy against science, a cherished and necessary world of fantasy.[169]

As well as rejecting unfeeling invasion with scalpel or 'scientific probe', antivivisection narratives advocated alternative therapies which required careful, external observation and set feelings centre-stage.

Whereas vivisection required the body to be opened to unearth its secrets, other branches of science like physiognomy (sometimes termed anthroposcopy) operated on the basis that character, emotion, and psychology corresponded with the body's external surface. As Sara Murphy points out, this was one of the 'modalities endangered by the rise of the cutting-edge practices of experimental physiology'.[170] Indeed, as chapter three will explore, physiological understandings of automatic responses which mimicked feeling-states undermined such direct correspondences between the internal and external body. The reframing of 'fear, horror and disgust in the language of nerves, reflexes and evolution' threatened to revise the criteria for detecting and analysing emotion in ways that were suspiciously convenient for vivisectors.[171] White explains:

> By denying an identity between an animal's bodily performance and its inner experience, physiologists effectively revised the basis for evaluating feeling. They removed the legitimacy of behavioural analogies between humans and animals, and installed a new definition of feeling that derived from their own research on bodily functions. […] vivisection was an act in which scientific men could be sympathetic without showing it, while their animal subjects could make a display of feeling without having any.[172]

Physiognomy dismissed physiology's 'expert' vision of animal behaviour and offered 'a spiritual guarantee that anyone could read the appearances of things in the world and then form a judgement on the basis of their essential though hidden value'.[173] 'This knowledge is complex', Lucy Hartley explains, 'but it is, nonetheless, accessible to everyone because it involves what actually exists in the organic world' and only requires a process of reduction.[174] Physiognomy also aligned with the antivivisectionist reading strategy: both required practice but no formal training, were preoccupied with the communication and interpretation of emotion, and were premised on accessing hidden meanings by studying external signs. Furthermore, physiognomy and

[169] Ibid.
[170] Sara Murphy, 'Heart, Science, and Regulation: Victorian Anti-Vivisection Discourse and the Human', *Law & Literature*, 26.3 (2014), 365-87 (p.381).
[171] Watt-Smith, *On Flinching*, p.4.
[172] White, 'Sympathy Under the Knife', pp.111-12.
[173] Lucy Hartley, *Physiognomy and the Meaning of Expression in Nineteenth-Century Culture* (Cambridge: Cambridge UP, 2001), pp.1-2.
[174] Ibid., p.2.

pathognomy appealed because they bridged literary and scientific, theological and materialist perspectives. Racing pulses and dilating pupils could signal 'moral passions' and 'arrive at a definition of man which mapped an individual's inner soul or being onto their external appearance' to improve man's knowledge of himself, others, and ultimately his Creator.[175] Although scientists largely abandoned physiognomy earlier in the century, the public had not quite dismissed it as quackery.[176] Therefore, it offered authors a (pseudo)scientific method which, for the general reader at least, was a compelling alternative to vivisection.[177] Collins, Hadwen, Berdoe, and Ouida capitalised on this ambiguity by playing up similarities between feeling and sickness. Elsworth's lovesickness is a 'subtle and insidious malady, with very pronounced and persistent symptoms' (272), 'a kind of zygmotic disease' like hydrophobia or smallpox from which the doctor expected to have developed immunity after his 'mild "cultivation" of the bacillus' with his old flame, Linda (272-73). His worldly gypsy friends are 'capable physicians in this branch of practice' and see at once that Elsworth has received an 'inoculation from a well-aimed bolt of Cupid' and is now host to 'Love germs' (273). Though light-hearted, the implications are serious: an intuitive understanding of passions and personality, the very thing that vivisection passed over, is essential for diagnosis and treatment.

Hadwen and Berdoe use physiognomic and pathognomic strategies to make moral character visible. Antivivisectionist characters and the vivisector's victims are legible texts: open, outward facing, and expressive, they facilitate the transmission of tender feelings. Just as Mildred's 'robust and healthy frame' supports 'a vigorous and healthy mind' (232), Elsworth's 'graceful bearing and manly carriage' (3) mirror his character. Unlike his 'rough, rowdy, and decidedly unintellectual' (7) peers, Elsworth has a

> full, deep, earnest, clear and honest eye, by which you could look into his soul. At a glance you took this in; there was no mistaking that, in the handsome young fellow who confronted you, there dwelt a spirit as brave, strong, and well braced as the frame that held it. (3)

Elsworth's transparent face epitomises unencumbered access and exchange: characters can 'see into' him, and reciprocally 'take him in'. Even when 'utterly reckless' practices have 'blunt[ed]' his 'fine sense of humanity' (66), and even when the narrator claims that 'our doctor was now given wholly to the material side of his work' (108), the reader never doubts that a 'a deep under-current of poetry ran through his soul' (111). Deep secrets of character and the heart are advertised on the surface. No very expert reading is required for assessments of physiognomy; the issue here is not

175 Ibid., p.33.
176 Gilbert, *Victorian Skin*, p.280.
177 Hartley, *Physiognomy and the Meaning of Expression*, p.1.

the level of readerly attention but the existence of a common heritage which understands links between appearance and character. What is outward, or only skin-deep, is not superficial.

Just as Elsworth's moral substance is immediately discernible, Dr Crowe's deficiencies are permanently stamped across his features. The vivisector's 'perfect pitilessness' and 'utter dissociation from any genial or loving characteristics' is

> boldly recorded on the lines of his face, and the very carriage of his body. Hard was not the word for it, cruel was not wide enough to comprehend his character. Disregard of all pain in others, contempt for those who professed to care for what troubled others; these were the distinguishing traits of Mr Malthus Crowe's moral character, and his face advertised it. (120)

The animal dealers and stealers from whom Crowe purchases his victims also bear physical and emotional marks of their trade: they are 'brutalized by their ghoul-like work', 'scarred and furrowed about the hands and arms with bites, cuts, and scratches, which had healed badly, and, to the skilled observer, sufficiently stamped them with the trade mark of the hospital' (118). By using terms like 'recorded', 'advertised', 'marked' and 'stamped', Berdoe imposed ideas surrounding printing and display upon the flesh. Thereby he encouraged readers to approach bodies like texts which made character available in a manner which recalls the Greek etymology of the word 'character', *charassein,* meaning 'to make sharp, to cut into furrows, to engrave'.[178]

Hadwen similarly draws attention to bodily marking and makes certain characters extra-legible: the medical men of the novel include the aptly-named Drs Syringham and Kneifer, accompanied by Surgeons 'Slashett', 'Chippaway', and Cuttensaw', while antivivisectionist characters include 'Bishop Middlepath', 'Mr Vigor', 'Mr Pleadwell' (a campaigner against muzzling) and the jovial 'Colonel Merribhoy'. The vivisector, Simpkins, requires more careful study. Marjorie rises to the challenge and implores her mother to re-examine his 'restless' 'shifty' eyes, 'beetle brows', and 'thin, bad-tempered lips with their sardonic expression, fixed in a sallow, cadaverous frame of inexpressive meanness'. 'You've only seen him at the dinner-table, or perhaps in casual intercourse' she remarks:

> Of course you don't get to know people then. You have to catch the features at rest and quietly watch the play of the muscles and the expressions they produce when the creature thinks nobody is quizzing them. I've watched him, mother, and I don't like his face. (57-58)

Paradoxically, Simpkins's 'inexpressiveness' is expressive to a vigilant spectator. Marjorie explains that faces betray character since muscle use or wastage shapes the features. Nineteenth-century anatomical and neurological discoveries 'tended to move the study of character closer to the study of expression […] and away from phrenology – away from the body structure of the skull to the

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[178] *OED.*

soft tissue of the skin and neuromusculature of the face'.[179] Anatomists argued that 'habitual expressions […] traced lines in the countenance that then became permanent, reinforcing the character in question – even producing the emotions they expressed'.[180] Hadwen uses these concepts to chart Simpkins's habit of meanness and to secure Marjorie's trustworthiness. She is, like all antivivisectionist heroines, a manifestly 'open' and emotive character, whose skin flushes and eyes glisten expressively, and whose subjectivity lies on the surface, always available to the gaze.

Heart and Science's non-scientific characters share this reactive quality. Carmina has 'a sensitive changefulness in the expression of her eyes' (13) and her face reflects minute fluctuations in emotion:

> Whatever the feeling of the moment might be, Carmina's sensitive face expressed it vividly. Who could mistake the faintly-rising colour in her cheeks, the sweet quickening of light in her eyes, when she met Ovid's look? […] her artless eyes spoke plainly. (53)

Blushing and paling were omnipresent in the literature of the period, and were significant in contemporary scientific studies of the emotions.[181] They often signalled authentic, 'moral' feeling because they were involuntary and thought not to be excitable by physical means.[182] Gilbert writes that 'blushing was evidence of "sympathy" as well as a means of engaging in it', and that '[t]hose who advocated divine design found in blushing the proof of a celestial plan of emotional communication and communality of sensation between all living beings'.[183] Carmina's guileless blush leaves no room for misinterpretation. Likewise, although Mary Snodgrass suggests that Ovid's masculinity is denigrated by his hypersensitivity, the 'marked change[s]' (10) in his face confirm his capacity for communicative sympathy.[184] Fearful for her beloved Carmina, Teresa examines him 'with close and jealous scrutiny' and pleads with her holy patron: 'Show me that man's soul in his face!' (68). Divine intervention is unnecessary as Ovid openly displays his virtuous nature and Carmina's duenna can soon declare: 'I've read you like a book. You're quick to see, sudden to feel – like one of my people' (84). Only a few pages later, Carmina's visage 'tell[s] its tale of a wakeful night' (51). Collins ensures that the faces of sympathetic characters constantly offer up information and speak plainly to each other and to readers.

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[179] Gilbert, *Victorian Skin*, p.280.
[180] Ibid.
[181] Ibid., p.67.
[182] Ibid., p.64; Thomas M. D. Burgess, *Physiology or Mechanism of Blushing; Illustrative of the Influence of Mental Emotion of the Capillary Circulation; General view of the Sympathies, the Organic Reactions of those structures with which they seem to be connected* (London: John Churchill, 1839).
[183] Gilbert, *Victorian Skin*, p.64, p.69.
[184] Mary Ellen Snodgrass, *Encyclopaedia of Gothic Literature* (New York: Library of Congress, 2005), p.251.

Furthermore, Collins constructs a series of physiological and emotional human-animal mirrorings to hint at cross-species communication. Zo, whose name, according to Straley, suggests ‘a universal bestiality’, is often associated with cats, dogs, birds, and monkeys.[185] Most notably, she exhibits the same response as Tinker, Ovid’s terrier, when Benjulia presses on her spine.[186] This bodily harmony anticipates what Straley terms the ‘transparent visibility of emotion’ common to human and animal.[187] Zo and Tinker try to gain Ovid’s attention respectively by pulling at his coattails (60) and jumping up to be patted (78). When rejected by a distracted Ovid, Tinker’s eyes and ears ‘expressed reproachful surprise’ (78) whilst ‘big tears of indignation’ rose in Zo’s eyes (93). Unsure what to make of her brother’s anomalous response, Zo carefully watches him during a visit to London’s Zoological Gardens. After a while, she declares:

> ‘I saw another man look like Ovid.’
> ‘When dear?’ Carmina asked – meaning, at what past date.
> ‘When his face was close to yours,’ Zo answered – meaning, under what recent circumstances. (61)

It transpires that Zo has spied the footman, Joseph, courting their maid, Matilda, and matches the signs of romantic love splashed across the faces of both couples. Their involuntary affective expressions show their true feelings. Straley comments that the child ‘uncovers the secrets of love by performing a kind of comparative anatomy’;[188] because emotion is written on the body and therefore easily read, surgical or narratological vivisection or dissection is circumvented: the reader can connect cause and effect, and can diagnose by simply observing.[189] The fact that Zo’s methods present an alternative to vivisection is further underlined by the location of the scene: the Zoological Gardens. Crucially, the creatures there were studied by sight rather than by scalpel and were on show to any curious amateur rather than cloistered in the laboratory which, in the antivivisectionist mind, was figured as ‘a weighty symbol of science’s withdrawal from public, accessible places’.[190] Thus Collins emphasised the benefits of non-invasive scientific study, and placed the young couple within a greater web of expressive cross-species communication.

Reading the vivisector

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[185] Straley, ‘Love and Vivisection’, p.363.
[186] Terriers were a favoured breed in antivivisection novels. Unlike most of his literary peers, Tinker is never threatened by vivisection. See Loveridge, ‘Historical, Fictional, and Illustrative Readings of the Vivisected Body’, p.97
[187] Straley, ‘Love and Vivisection’, p.363.
[188] Ibid., p.364.
[189] Ibid.
[190] Hamilton, ‘Reading and the Popular Critique of Science’, p.72.

Characters who are adept at reading and reacting to one another are, however, less literate when confronted with vivisectors, whose emotional workings have often been gradually dulled and therefore become more difficult to read. For example, in *St Bernard's*, a medical student called Wilson, embarks upon his medical training as 'tender, kind, and a lover of the lower animals' (91). He shudders terribly when he first slices into, and rubs caustic on a live frog's eye, but the narrator states that 'he shuddered less the next time' and soon 'conquered his aversion to the torture of living dogs which licked his hands before he began' (91). In *Heart and Science,* Benjulia is markedly unresponsive. When he sees Carmina in distress, 'not the vestige of a change' appear on his features (245), and when reticently discussing his research his 'great head bent slowly over his broad breast' until 'the whole man seemed to be shut up in himself' (70). Composure, as much as cruelty, distinguishes this vivisector, and Collins repeatedly describes Benjulia's manner of talking in this way (103, 109). His rigid self-possession and wilful estrangement from the emotional economy is 'awful' (212) and 'intolerable' (131) because it disrupts interpersonal relations and undermines social bonds.

In addition to his 'customary composure' (109), Benjulia's body and 'weird look' (63) also make him tricky to read. His 'immense bones' and 'massive forehead' jar with a 'hideously thin' frame, 'great gloomy gray eyes', and gaunt cheekbones (63). His body, face, and lips are repeatedly described as fleshless and his eyes as hollow and lifeless (63, 109). In addition to cementing his general gothic 'otherness', these descriptions suggest an incorporeal and therefore inscrutable quality. His face is cryptic and abstruse – 'like the face of the impenetrable sphinx' (102) – and, as Carmina and the cook can testify to, the penalties for misinterpretation are similarly high. Like the mythological creature, Benjulia's body is a series of ill-fitting parts. We are told that he resembles a 'Native American' although his complexion is 'of the true gipsy brown' (63) and some contemporary reviews identified him as Jewish.[191] Benjulia's body, however, is not particularly monstrous, and the *Pall Mall Budget*, a London weekly digest, even praised Collins's moderate portrait:

> Dr Benjulia is six feet six high; but that is not libellous. He is also abnormally thin; but even the extreme sensitiveness of M. de Cyon himself can find no intolerable imputation here. He has a bamboo stick which is sometimes clotted with unpleasant stains: but this is almost the only transgression of strict equity of portraiture.[192]

Typically, however, in antivivisection fiction, the source of the vivisector's uncanniness is not his monstrous appearance, but that the other characters are unable to get a good 'read' of him. For example, Dr Lamb of *The Octave of Claudius* is described as

[191] [Unsigned], 'Mr Wilkie Collins's New Novel', *Pall Mall Budget*, 4 May 1883, pp.14-15.
[192] Ibid., p.14.

> an astonishing grotesque figure; the short holland jacket did not seem to go well with the bald head, with its fringe of auburn hair. Curious traces of scientist, sensualist, and poet, seemed to flit across his face, hopelessly inconsistent and passing in a moment.[193]

Dr Lamb is hideous because he evades the gaze. Just as his clothes are at odds with his appearance, his identity is eerily fragmented into different 'personalities' (scientist, sensualist, poet), expressions of each appearing too fleetingly to properly inspect. Likewise, Benjulia's strange semblance leaves Teresa speculating wildly about his occupation and class. His long-frock coat, baggy trousers, and untied neck collar are 'recklessly loose and easy' (63) and his hard, black hat 'might have graced the head of a bishop' yet also resembles those worn by early nineteenth-century dandies (63-64). 'The manners of a prince, […] and the complexion of a gipsy', she wonders, 'Is he a nobleman?' (64). Only Benjulia's hands hint at his history. Though his fingertips are soft as satin (95) and 'handle the frailest objects with the most exquisite delicacy' (95), small patches of chemical stains and later dried blood contradict this gentleness, 'silently telling their tale of torture' (98). Lansbury argues that 'it is not what the vivisector does that is so appalling but what he is as a man. The real terror in *Heart and Science* is not in the locked and secret laboratory but in the mind of Benjulia'.[194] This is true, but not for the reason Lansbury gives: that animal and human experiments gratify perverse sexual desires. Instead it is the surrounding characters' failure to access the vivisector's psychology that is most troubling. No wonder little Zo is unable to fathom how she feels towards the 'big doctor' (65). Even Ovid, with his 'surgeon's practised eye' (110) struggles to make out Benjulia.

Like Benjulia, Mrs Galilee has 'deliberately starved her imagination, and emptied her heart of any tenderness' (67) by eschewing 'gentler and wiser training' (39) for science. She disguises this paucity of feeling while attempting to perfectly 'play the part' of doting mother (29). Collins signals Mrs Galilee's inauthentic presentation of self by emphasising how she literally 'makes up' her face. By painting on an amenable expression, she hides her inner substance much like the beautifully bound book Carmina picks up only to find '[s]cience again […] inviting [her] in a pretty dress' (111). Yet, the reader is not long fooled; staged emotions barely break her body's surface – her laugh is 'hard in tone, and limited in range – it opened her mouth, but failed to kindle any light in her eyes' (114). Occasionally 'something seemed to move feebly under her powder and paint' (32), but the narrator declares it 'impossible' that this might be 'soft emotion trying to find its way to the surface' (32). The feelings that do briefly manifest are tricky to catch. Upon discovering her inferior position in her brother's will, Mrs Galilee's face morphs, unbeknownst to Ovid and Mr Mool:

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193 Barry Pain, *The Octave of Claudius* (London: Harper, 1897), pp.59-60.
194 Lansbury, 'Gynaecology, Pornography, and the Antivivisection Movement', p.431.

> If they had looked at Mrs Galillee […] they might have seen the incarnate Devil self-revealed in a human face. They might have read in her eyes and on her lips, a warning hardly less fearful than the unearthly writing on the wall which told the Eastern Monarch of his coming death. 'See this woman, and know what I can do with her, when she has repelled her guardian angel, and her soul if left to Me.' But the revelation showed itself and vanished. Her face was composed again, when her son and her lawyer looked at it. […] All those formidable qualities in her nature, […] were now driven back to their lurking-place; leaving only the faintest traces of their momentary appearance on the surface. Her breathing seemed to be oppressed; her eyelids drooped heavily – and that was all. (39-40)

Collins employs typical textual terminology to describe Mrs Galilee's authentic feelings; her eyes and lips can be 'read', and her threat to Carmina is a transparent portent – 'writing on the wall'. But Ovid and Mr Mool aren't paying attention, and when they do, can only make out remnants of emotion upon her features. Like his stepfather who misreads physical signs of his wife's anger as symptoms of a headache (53), Ovid tenderly enquires whether his mother feels faint (39-40). Mrs Galilee's true temperament is revealed in the final chapters when she cannot suppress her manic rage. This fit of fury is a literal unmasking: 'in certain places the paint and powder on her face had cracked, and revealed the furrows and wrinkles underneath' (248).

Wells's long-unnamed experimental investigator, Dr Griffin in *The Invisible Man* (1897), unnervingly demonstrates the limitations of antivivisection's favoured interpretative mode when dealing with 'scientific' bodies. Griffin experiments with chemicals and radiation until he alters his body's refractive index and becomes invisible. When this transformation proves unexpectedly permanent, Griffin steals clothes and bandages and arrives as a cloaked figure in Iping, a Sussex village, where he hopes to reverse his condition. The villagers' suspicions blossom into animosity after they correctly suspect that he has robbed the vicarage. During an angry confrontation with his landlady, Griffin briefly reveals his invisibility before taking off. Next, he coerces the vagrant Thomas Marvel to do his bidding. When ordered to recover some important papers, the terrified tramp gives Griffin the slip and reports his ordeal to the police. Griffin is shot in his attempt to avenge Marvel, and seeks refuge with Dr Kemp, a former classmate from medical school. He tells the whole history of his invisibility to this old acquaintance, including his plans for a murderous 'Reign of Terror'. Kemp secretly sends for the authorities, but Griffin narrowly escapes. Kemp and the local police make plans to capture the fugitive and prevent his killing spree, yet these go awry; Kemp finds himself injured, sprinting towards Port Burdock with Griffin in hot pursuit. The townspeople, on high alert for an invisible man, corner Griffin and beat him to death, after which the invisible man's battered body becomes visible once more.

Animal experimentation is an essential element of Griffin's characterisation. Early on, he gives a neighbour's cat drugs which 'bleach the blood' and does 'certain other things' which leave the animal 'bandaged and clamped' (97). Although Griffin claims the feline is insensible (97), her

pitiful cries and his own painful transformation – 'a night of racking anguish, sickness, and fainting' – suggest otherwise (102). The cat's owner, 'a drink-sodden old creature, with only a white cat to care for in all the world' (97), suspects he has been vivisecting and alerts his landlord. Griffin awakes to 'threats and inquiries':

> I had been tormenting a cat in the night, he was sure. […] He insisted on knowing all about it. The laws of this country against vivisection were very severe, – he might be liable. I denied the cat. […] He edged round me into the room, peering about over his German silver spectacles, and a sudden dread came into my mind that he might carry away something of my secret. (99)

But the landlord detects nothing extraordinary, only the usual 'bare walls' and 'uncurtained windows […] and that faint ghastly stinging of chloroform in the air' (97). Griffin has already turfed the invisible cat onto the street after 'processing' (97) her. 'You don't mean to say there's an invisible cat at large!' Kemp protests (99). 'It's very probably been killed', Griffin replies nonchalantly, 'It was alive four days after I know, and down a grating in Great Titchfield Street' (99). Though Griffin's early experiments are only afforded a brief mention, Wells furnishes him with the vivisector's tell-tale emotional hallmarks. As his indifference towards others implies, Griffin is 'intensely egotistical and unfeeling' (137) and 'incapable of any strength of feeling' (99). He readily admits to this loss of sympathy and to a 'strange sense of detachment' (96). 'He's mad', Kemp warns, 'the man's become inhuman', 'he is pure selfishness' (131). Indeed, Kemp's collaborative scientific practice sharply contrasts with Griffin's rogue research methods, monomania, and criminality. Whilst Dr Moreau's transgressions take place on an isolated island, Griffin's are set within a very real social world.[195] He and Kemp studied medicine at University College, London's centre for animal research and Griffin haunts the area after becoming invisible, pacing from Bloomsbury Square, running around Russell Square and down Great Portland Street, revelling in the 'extraordinary advantage' of being 'in a city of the blind' (105). This lust for power combined with utter inscrutability plays into antivivisectionist fears about the difficulty of keeping track of experimenters and their places of work, prompting the VSS to produce a 'vivisector's directory'.[196]

Unsurprisingly, *The Invisible Man* is preoccupied with bodily concealment and exposure. Like Benjulia who is compared to a sphinx, the name 'Griffin' recalls another mythological creature whose body consists of miscellaneous parts. Elaborate costuming furthers Griffin's incoherent appearance. He is 'wrapped up from head to foot', a collar is turned up over his neck, 'a bushy side-whisker' completely obscures his cheeks (1-2), and bandages leave 'not a scrap of his face […]

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[195] Bernard Bergonzi, *The Early H. G. Wells* (Manchester: Manchester UP, 1961), pp.112-22.
[196] Benjamin Bryan (ed.), *The Vivisector's Directory* (London: VSS, 1884); [Unsigned], 'To Our Readers', *Zoophilist*, 2.12 (1 November 1883), 190.

exposed' (3-4). Gazing at his new reflection, Griffin sees a man 'grotesque to the theatrical pitch, a stage miser, but […] not a physical impossibility' (122). Although the landlady Mrs Hall immediately senses he is 'an unusually strange sort of stranger' (11), she can only detect that his bright pink nose is oddly shiny and that his thick hair hangs in a 'curious' and 'strange' manner (3). As Tarryn Handcock points out, the invisible man's body is not transparent but, as his elaborate costuming stresses, 'concealed, corrupt, and transgressive'.[197] Whilst Benjulia and Damer's impenetrable and unruffled appearances reflect the ascendancy of head over heart, Griffin is prone to fits of rage in which 'things were snapped, torn, crushed, or broken in spasmodic gusts of violence' (19). These passions, however, never materialise upon his features: his face 'cannot act as a mirror for others in the world, retuning a projected image of the body to an audience who may perceive with empathy a flush upon his cheek or emotion in his eyes'.[198] The villagers, on the other hand, openly display their virtues and vices. Mrs Hall's face is 'eloquent' (11) and though also a stranger to Iping, Marvel's visage, speech, and makeshift clothes make his vagrant life apparent. Just as his 'nose of cylindrical protrusion' reveals his penchant for liquor (43), his emotions are 'ingrained in his shifting skin tone' (49). By contrast, '[Griffin's] living skin cannot be read as a text – it neither confesses personal qualities nor acts as a surface that communicates false information'.[199] Like Collins, Wells creates a racially ambiguous vivisector and, when Mr Hall and Mr Fearenside glimpse 'skin' beneath his costume, the former theorises that he has black legs and the latter that he is 'a piebald […] black here and white there – in patches […] a kind of half breed' (18). Even Griffin's snowy footprints gesture to a non-Caucasian identity; they are 'as isolated and incomprehensible […] as Crusoe's solitary discovery' (100).[200] To the villagers' great surprise, death reveals Griffin as an albino – a defamiliarizing device which furthers his unreadability.[201]

Wells mocks the physiognomic efforts encouraged in antivivisection fiction. Faced with an invisible man, the villagers' ocular efforts are fruitless. Mr Gould's ineffective 'detective operations' 'consisted for the most part in looking very hard at the stranger whenever they met' (21). When Mr Henfrey tries to study Griffin, his gaze is disrupted by the lingering effect of a green light that shone into his eyes. Feeling as if he is being watched, Henfrey turns to find an 'uncanny-looking' (9) sight: 'the bandaged head and huge blue lenses staring fixidly, with a mist of green spots drifting in front of them' (9). Mr Hall suffers a similar visual impairment, although this time caused by

[197] Tarryn Handcock, 'Revelation and the Unseen in H. G. Wells's *The Invisible Man*', *Colloquy: Text, Theory Critique,* 25 (2013), 40-57 (p.41).
[198] Ibid., p.56.
[199] Ibid., p.45.
[200] Robert F. Fleissner, 'H. G. Wells and Ralph Ellison: Need the Effect of One Invisible Man on Another be *itself* Invisible?', *Extrapolation*, 33.4 (1992), 346-50 (p.347).
[201] Bonnie Tusmith, 'The Inscrutable Albino in Contemporary Ethnic Literature', *Amerasia Journal*, 19.3 (1993), 85-102.

Griffin's gaping eyes and mouth. Upon sneaking into Griffin's room, he glimpses 'a face of three huge indeterminate spots on white' (14). The spots which float across Henfrey and Hall's eyes obstruct a proper reading; they only glimpse 'indeterminate' and 'indecipherable shapes' (14) and come away with an indescribable 'impression' (15). Dr Cuss's efforts at a medical examination leave him traumatised, downing large quantities of the vicar's cheap sherry. Intrigued by tales of an 'experimental investigator' (30), the doctor visits Griffin and mentions the bottles and chemicals strewn about. As Griffin rebuffs questions he moves his arm, and Cuss is confronted with an astonishing sight: 'No hand – just an empty sleeve' (31). His rationale, that Griffin is deformed or an amputee, is soon shattered as Cuss receives a vindictive pinch on the nose. He reacts like the others: 'It was worse than anything. […] They were prepared for scars, disfigurements, tangible horrors, but *nothing*!' (35).[202] In life, Griffin is never forcibly uncloaked; he chooses to reveal himself.

After Griffin's dead body discloses very little, the villagers puzzle over his possessions, yet these too are beyond their reasoning powers. A 'box of books, – big, fat books, of which some were just in an incomprehensible handwriting' (13) contain crucial details of Griffin's invisibility experiment. He urgently tells Kemp that,

> for the most part, saving certain gaps I chose to remember, they are written in cipher in those books that Tramp has hidden. We must hunt him down. We must get those books again. (96)

A short while later he repeats, '[h]e has hidden my books, Kemp. Hidden my books! If I can lay my hands on him!' (126), and, again, '[w]e must get those books; those books are vital' (127). Yet Griffin need not have feared that his research secrets would be leaked. Although Dr Cuss and Reverend Bunting pore over Griffin's manuscripts, they quickly realise that they are 'all cipher' – a hodgepodge of maths, Russian, and Greek (52). Just before the nervous Reverend is forced to reveal his rudimentary Greek, Griffin snatches back his private memoranda. Unlike the qualified laymen of *Dr Deguerre*, Bunting and Cuss are ineffective readers despite their religious and medical training. In fact, they are no more successful than Marvel, into whose hands Griffin's stolen notebooks find themselves. The tramp turned publican spends Sundays alone, drinking gin, and 'gloating' over the inscrutable pages that have become 'weather-worn and tinged with an algal green' (156). With comic solemnity, Marvel knits his brow and vainly turns the leaves forward and back, whispering 'fiddle-de-dee. Lord! what a one he was for intellect!' (156). In his smoky room, he dreams of detecting 'the subtle secret of invisibility and a dozen other strange secrets written therein': '[f]ull of secrets', he says, '[w]onderful secrets! Once I get the haul of them – *Lord*!' (156).[203]

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[202] [emphasis in original].
[203] [emphasis in original].

Griffin's battered diaries are as impenetrable as his battered body. Both are 'colourless, ambiguous text[s]'.[204] His skin is as blank as those pages that have been washed clean by ditch water, and his reflective garnet-coloured pupils give nothing away. When the villagers finally see him, they encounter a terrifying lack of meaning and quickly conceal him once more: '[c]over his face' begs an onlooker, '[f]or gawd's sake cover that face!' (154).

Antivivisectionist-approved modes for reading character were not effective when directed toward experimenters whose hardened hearts and unresponsive bodies unsettled emotional economies within these texts. Whereas the therapeutic bedside care of the family doctor, nurse, or relative relied upon personal connection, vivisectors practiced 'a brand of medical research that denied the immaterial realm of human feelings'.[205] However, though personally divorced from the heart's passions, vivisectors submitted emotions to scientific study. As new reflex models emerged from the physiological laboratory, fresh questions were raised about how feelings such as sympathy operated.[206] As White explains, 'the crux of the late Victorian debate was not just about whether particular feelings were present in the experimenter or the animal but the nature of emotion itself; its role in science and medicine – and in human society generally – seemed open to question'.[207] The most troubling 'experiments' in these novels are not carried out by the scalpel. Just by 'looking scientifically' at those trying to decipher them, fictional vivisectors induced foreign feelings and thereby 'wrote' their own meanings.

The vivisector's gaze

The novels' vivisectors look at surrounding characters through a laboratory lens. Like Bernard, they are 'possessed and absorbed' by scientific ideas. In Wells's *Invisible Man,* chemical experiments on optical density literally alter the way Griffin's body absorbs and refracts light. In a more usual fashion, Crowe in *St Bernard's* is 'absorbed' in his work (226) whilst pathological and physiological problems become Simpkins's 'absorbing interest' in *Dr Deguerre* (69). Collins's Benjulia is also 'completely absorbed […] in brains and nerves' (72), whilst Mrs Galilee 'absorbs' (286) her mind in scientific subjects (286). The focus that fosters absorption in such specialist interests is necessarily narrow. Like Bernard, who does not hear the animal's cries or see it bleed, Damer, the vivisector of Ouida's *Toxin*, is deaf and blind to extraneous sights and sounds when engrossed in

[204] Handcock, 'Revelation and the Unseen in H. G. Wells's *The Invisible Man*', p.45.
[205] Sparks, 'Surgical Injury and Narrative Cure', p.14.
[206] Paul White, 'Introduction: The Emotional Economy of Science', *Isis*, 100.4 (2009), 792-97 (p.796).
[207] Ibid.

the *Journal de Physiolgie*. As he reads, he becomes oblivious to the 'gilded room behind him, the gilded water below', and deaf to sounds of laughter and music which float past his window (40). He has substituted moonlight for a study lamp, company for solitude, and art, beauty, and love, for science. Berdoe also makes the social cost of an all-consuming scientific interest explicit. Simpkins claims to have found, in science, fulfilment akin to that provided by family life; science is his 'wife and children', his 'world', 'home', 'whole domestic circle', 'recreation', 'amusement': in short 'everything' (69). Yet, Dr Deguerre warns that, due to the 'very nature of [his] scientific pursuits', Simpkins views everything 'from a microscopic standpoint' (71). Because he is 'eternally occupied with the infinitely small' he is debarred from seeing 'the big universe' (71). Or, as Ouida put it, '[t]he most intricate social problems wait unresolved, yet the scientists think that the whole key of "study" and "knowledge" lies in a rabbit's rectum or a dog's pancreas'.[208]

When the vivisector is loosed from the laboratory, his absorbing gaze becomes contagious. In *Toxin's* sole scene of vivisection, Damer experiments upon a young sheepdog whose vocal cords he has severed. The narrator comments that even for those animals that were not made aphone, the 'clang of hammers and the roar of furnaces' helped drown out their cries, and 'the people of the quarter were too engrossed in their labours to notice when he flung down into the water dead or half-dead mutilated creatures' (93). The Venetian masses, preoccupied with mechanical routines, are like Wells's Londoners; in each 'city of the blind', Damer and Griffin's actions go largely unnoticed by inhabitants.[209] Antivivisection propaganda poems, such as Weeden's 'The Poet and the Vivisector' (1920), published by the EDAVL, conjured similar images of London's 'toiling masses', ignorant of the abuses inflicted in their midst but hidden just out of sight.[210] The poet alone 'separate[s] from the shoal' to expose the urban experimenter.[211]

The vivisector's eye, sharpened by its limited scope, indiscriminately transforms organic and inorganic matter into objects of scientific enquiry, regarding patients as cases and animals as 'shrubs or vegetables, to be pruned and minced by the knife of the gardener'.[212] Crowe 'looked upon all mankind from a pathological point of view' (226); women's bodies are to Damer 'but subjects of investigation, like cats' (105); and Benjulia regards his cook as any other 'inferior creature' (214). He even observes Carmina as he would a man, a monkey, or 'the picture of a girl instead of the girl herself' (245). Indeed, art is not exempt from the vivisector's destructive vision;

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[208] Ouida, 'The Future of Vivisection', p.413.
[209] Dorothy Wisniewska, 'My Humanity is Only Skin Deep: The Monstrous Body, The Monstrous Self as Portrayed in Literary and Film Horror', in *Interiors: Interiority/Exteriority in Literary and Cultural Discourse*, ed. Sonia Front and Katarzyna Nowak (Newcastle: Cambridge Scholars Publishing, 2010), pp.191-98 (p.192).
[210] Weeden, 'The Poet and the Vivisector', l.5.
[211] Ibid., l.60.
[212] William Drummond, *Vivisection Forty Years Ago* (London: Williams & Norgate, [1876.]), p.15.

when Adrianis sees Damer gazing at the statues of the horses of St Mark's Basilica, he imagines the vivisector is 'longing to dissect' them (99). Similarly, when Crowe gazes at the gorgeous view from the Alhambra, he remains 'unthrilled by emotion' and 'untinged by one ray of the romance or poetry which the surroundings should have imparted' (227). Instead of admiring how the sinking sun produced a 'glorious wealth of colour and a momentarily varying richness of shade […] he thought but of the spectrum, of Frauenhofer's lines, of refraction and the absorption of light' (228). Crowe's gaze atomises the vista just as he breaks up the bodies of experimental animals. We are told that he slowly 'stifled, suppressed, and killed' the love of goodness itself by 'coldly formulating, analysing, and materialising, till the sentiments of wonder and worship are dissipated into their elements' (227-28). Ouida is even more explicit, noting that noble emotions are 'no more to [Damer] than the soft thick fur of the cat in his laboratory, which he stripped off her body that he might lay bare her spinal cord' (81). In *St Bernard's,* Simpkins takes a special interest in scrutinising emotional expression and, explaining his preference for city life, tells Marjorie,

> I like to read the faces as I go along, the anxious looks, the thoughtful expressions, the business airs, the very despairs that you can trace on the features of a London crowd, with the sharp contrasts of joy and fear and every other emotion, passing like a moving panorama before you at each step you take – that is the sort of thing I like. (155)

By the late nineteenth century, panoramic cameras using flexible film and clockwork drives captured images with horizontally elongated fields of view. Exotic landscapes and grand ceremonies were typical subjects. The camera was also used to give experimenters privileged powers of vision and to capture facial expressions or motions. Moving panoramas, however, like that which Simpkins refers to, were closely associated with melodramatic plays. Thus, perhaps Berdoe's simile blends scientific and theatrical watching to emphasise the vivisector's malevolent interest in studying and even artificially producing emotion.

Certainly, Benjulia and Damer's looks 'vivisect' in this manner. Carmina is initially unaware that she has become an 'object of medical inquiry, pursued in secret', and Benjulia can leisurely note each 'nervous movement [in] her eyes and lips' (242). Yet, as she deteriorates, the girl notices that the doctor's 'coldly-inquiring eyes exercised some inscrutable influence over her. Now they made her angry; and now they frightened her' (243). In a climactic scene Carmina becomes hysterical: 'It's your fault if I'm excited', she whimpers exhaustedly, '[i]t's your dreadful eyes that do it' (245). Even Mrs Galilee fires off 'annihilating' (33) glances and Mr Mool feels her 'eyes go through [him] like a knife' (38). At the music hall, her eyes 'flashed into' Carmina's, causing her to faint and 'to lose all sense of [herself] as if [she] was dead' until she awakens to 'a dreadful pain' (92). Mrs Galilee's knife-like look causes her niece to slip out of consciousness like an anaesthetized

animal before shuddering painfully back to life, her nerves still frayed from the metaphorical operation.

Toxin provides a pseudo-scientific explanation for the vivisector's strange influence over the heroine. Damer's looks don't kill, but his piercing stare creates 'a vague, dull fear' (109). His sway over the Countess peaks after Adrianis's death, and the pair wed. The narrator remarks that,

> she shrank from him, she feared him, she abhorred him, but the magnetism of his will governed hers till he shaped her conduct at his choice, as the hand of the sculptor moulds the clay. He became master of her person, of her fortune, of her destiny. (184)

Like an animal being vivisected, Veronica is first immobilised by Damer's gaze, rendered like a trembling bird too petrified to take flight (112). Ouida describes his coercion as mystical and cultish, alien to, yet more powerful than, love, 'an influence as the confessor obtains over the devotee; against which husband, lover, children, all natural ties, struggle altogether in vain' (89). Veronica even attributes her plight to supernatural forces; she weeps into her cursed opals, and cries, '[p]ierres de malheur! Pierres de malheur! […] Why did you bring that cruel man into my life?' (90). She has a 'morbid fancy' that 'the eyes of the strange Englishman could see her and lay silence on her lips and terror on her heart' (109):

> She felt something of what the poor women in the Salpêtriére had felt when he had hypnotised them and made them believe that they clasped their hands on red-hot iron, or were being dragged by ropes to the scaffold. She strove to resist and conquer the impression, but she was subjugated by it against her will. (90)

The golden age of French hypnosis (1882-92) coincided with a period of active antivivisection agitation.[213] The Salpêtriére, a large Parisian teaching hospital, was where the neurologist Jean Martin Charcot used mesmerism to treat hysteria. He believed that he could better reproduce and interpret symptoms when patients were put in an 'experimental state'. For antivivisectionists, mesmerism represented the ultimate loss of authority and agency over one's medical treatment since it required complete submission to the medical practitioner. As Benjulia puts it, 'the brain of an excitable woman' (217) is most vulnerable to experiment, and Veronica is experimented upon without the slightest slip of the scalpel. Emotional transparency and expansive feelings, though essential in these texts, are ripe for adulteration.

The role of vivisector and scrutinised subject is only reversed in *Dr Deguerre*. Before retiring to bed, Simpkins admires a portrait of Marjorie, which soon begins to exert a strange influence over him. He becomes 'fascinated', unable to avert his eyes and incapable of freeing himself from her 'spell' (168). An 'uncanny' (169) ball of light appears out of which the victims of his 'scientific

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[213] See Frank Barrett, *Found Guilty* (London: Ward & Downey, 1877) for another example of a vivisector who practices hypnosis.

lust' (175) emerge. When a dog called Flossie 'fixe[s] him with her steady gaze' 'with those soft, reproachful eyes that he knew so well' (168), Simpkins is overcome with fright:

> His face turned ashy white, and a cold, damp sweat stood in beads on his forehead; he tried to rise from his seat but failed to do so; he endeavoured to reach his pocket-handkerchief but his hand lay paralysed by his side; he longed to shriek for Miss Deguerre [...] but his tongue refused to move, and his eyes were so glued [...] he could not drag them away. (168)

As Flossie's broken body fades back into the ball of light, her 'sad face with its burning eyes remain fixed on the horror-struck vivisector' (168). Another dog called Jack appears:

> It was a black head this time [...] But the eyes, oh, those eyes looking out as if from depth of living thoughts, they were lit up with an unnatural blaze until they flashed like meteors from their dark setting. Slowly the eyes drew near, looking down, ever down into those of the trembling occupant of the big armchair. [...] those two pairs of eyes [Flossie & Jack's] seemed by their united silent eloquence to burn into the very soul of Dr Simpkins; and he quailed before their steady, unflinching gaze. (170)

Subsequent animals appear: a cat, rabbit, monkey, and mouse. Simpkins's reactions re-enact their fate. He 'quails' (170) and 'shrinks' (175) before their stares which paralyse or penetrate different parts of his body. Jack's gaze leaves the vivisector 'helpless, speechless', unable to escape (172). Tom, a blind Persian cat concentrates his 'opaque', hollow stare 'at an angle' upon Simpkins's face (173). A paralysed rabbit looks steadily at his persecutor with 'large, bright, prominent eyes' (174) and the body of Jacko the monkey fades until 'nothing but a pair of sad eyes, human in their pathos, stared into those of Dr Simpkins' (175). In 'deathlike silence' the ghastly *cortège* pin their oppressor beneath spooky stares which 'seemed as if they would pierce his very soul' (175). Suddenly, Marjorie steps from her portrait and enacts her own metaphorical vivisection; she 'enslaves' and silences Simpkins with 'that straight, piercing look of hers that he almost feared' (175-76). The apparition eventually fades until Marjorie and the mutilated animals vanish into the miniature portrait. The following morning, an uneasy Simpkins 'found himself asking seriously, "Can she read me?"' (176). This strange scene gives the reader the satisfaction of retributive justice. Hadwen's temporary 'exposure' of Simpkins which allows him to be 'read' is facilitated by hallucination, hypnotism, or supernatural forces. The spirit Marjorie can tower over the vivisector with terrible piercing eyes, but not the real girl at the breakfast table. If too controlled, cutting, and powerful, rather than reactive and sympathetic to others, her vision would become like the vivisector's.

By presenting the body's surface as a legible text where emotional or medical truths were recorded, antivivisectionist writers insisted there was no need to slice the skin. Novelists avoided penetrating reading strategies which bore problematic resemblances to the practice they sought to condemn, and stringently directed the reader's gaze towards exterior appearances. Nevertheless,

the movement's rhetoric of revelation through reading often recalled images relating to bodily exposure and experiment. Gilbert reminds us that although skin communicates 'it must, like any signifier, be read and interpreted'.[214] While antivivisectionist writers used a discourse of legible surfaces and presented their non-scientific characters as transparent, 'visibility both invites the gaze and evades certainty' because demanding 'attention to visual detail through a scrupulous, almost clinical, articulation of the body's surface and reactions directed a reader's focus to the process of interpretation'.[215] Hence, another set of problems arose. By presenting the body as 'the site of self' and by paying careful attention to surface verisimilitude, these texts risked articulating a materialist theory of body and mind. This was typical of a realist mode and did not align with the aesthetic values antivivisectionists held dear.[216] Additionally, like the experimental scientists they abhorred, by regarding bodies as sites where meaning was available for extraction, antivivisectionist authors risked turning *beings* into mere *bodies*. Meanwhile, the vivisectors of the novels 'uncomfortably impinge upon realms of character and nature' while remaining, themselves, inscrutable.[217] By eliciting unnatural and foreign physiological or psychological states, whether via the scalpel or by mesmeric force, fictional vivisectors threaten to rewrite, overwrite, or even erase meaning altogether.

The fascination with the feelings of physiologists, and the desire to uncover and measure them, mirrored the intense interest in the ability of different animals to feel and express pain. Despite the revelatory potential seemingly presented by documents such as the First Royal Commission's *Report* and early laboratory handbooks, these first-hand accounts did not clearly reveal how experimenters responded emotionally to the challenges of research. Yet, while activists capitalised upon this ambivalence and carved out a space for new interpretations of physiologists' 'true' emotions, the same uncertainty was deeply unhelpful when animal feelings were scrutinised. Just as antivivisectionists usually doubted the veracity of experimenters' accounts of their feelings, so too did vivisectors claim that the signs of pain displayed by animals were bogus. As the following chapter explores, understandings of harm were challenged by physiologists who interrogated the link between experience and expression, and between pain as *thing* and pain as *sign*.[218]

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[214] Gilbert, *Victorian Skin*, p.21.
[215] Ibid.
[216] Ibid., p.22.
[217] Sparks, 'Surgical Injury and Narrative Cure', p.1.
[218] Javier Moscoso, *Pain: A Cultural History*, trans. Sarah Thomas and Paul House (New York: Palgrave Macmillan, 2012), p.82, p.84.

Chapter 3: Signifying Pain

During the mid-to-late nineteenth century pain was redefined by scientific researchers, and the connection between its experience and its expression loosened significantly. In the late eighteenth century British chemists such as Humphry Davy and Thomas Beddoes experimented with anaesthetic gases, while writers such as Samuel Taylor Coleridge and Percy Bysshe Shelley interrogated pain's nature and meaning.[1] Jeremy Bentham's 'felicific calculus' continued to shape Victorian utilitarianism. However, it was the 'discovery' of sulphuric ether and chloroform in 1846 and 1847 respectively that prompted a 'watershed in the history of medical, theological, and political-economic accounts of pain'.[2] Original sin, individual transgressions, and tests of faith were no longer widely acceptable explanations for earthly suffering.[3] For the first time, pain seemed superfluous and avoidable, and the responsibility to explain its function increasingly fell to medical practitioners and scientists.[4] The 1875 Commission revealed this growing reliance upon scientific expertise. Despite cries of partisanship, scientists were called as expert witnesses on animal pain while simultaneously being regarded as suspects. As anaesthesia became commonly used in medicine, patient accounts of the kind prized in antivivisection fiction became less central to clinical care. After all, descriptions of painful sensations sometimes misled the medic about the seat of the trauma or the best course of treatment. Similarly, animal sounds and gestures often appeared unconnected to feeling-states such as pleasure or pain. While antivivisectionists tried to discover – as chapter two has explored – how the experimenter felt, vivisectors were beset by a similar problem. They too were disturbed by what Watt-Smith terms 'the queasy slippages between seeming and being which troubled any easy assertion that a particular feeling or action was truly *there*'.[5]

This chapter explores how physiologists and antivivisectionists tussled for the authority to interpret feeling-states during a time when accounts of pain were being revised throughout diverse fields, including medicine, science, theology, and politics. In particular, it examines how both groups navigated the representative challenges that pain posed, especially when dealing with animals which lacked linguistic capabilities. It begins by considering how animal pain was defined and managed within the physiological laboratory. Although physical suffering was never a research

[1] Joanna Bourke, *The Story of Pain: From Prayer to Painkillers* (Oxford: Oxford UP, 2014), p.173.
[2] Rachel Ablow, *Victorian Pain* (Princeton: Princeton UP, 2017), p.1.
[3] Lucy Bending, *The Representations of Bodily Pain in Late Nineteenth-Century English Culture* (Oxford: Oxford UP, 2000), p.67.
[4] Ablow, *Victorian Pain*, p.2.
[5] Watt-Smith, *On Flinching,* p.7 [emphasis in original].

aim, it was more than a by-product since 'pain in animals was the base for physiological experiments and for a long time remained the tool for obtaining knowledge of the physiology of the nervous system'.[6] Some experimenters sought an objective measure of harm by systematically applying painful stimuli as an interrogative instrument. By using 'purely mechanical procedures' and new technologies, they sought to establish 'a natural and direct correspondence' between the intensity of stimuli and the magnitude of sensation, and even between emotions and expressive signs.[7] To reveal these biological laws, the personal and private facets of harmful experience needed to be removed. Physiologists focused on that which seemed more quantifiable and universal, i.e. biological data. This attention to what pain produced rather than the person- or animal-in-pain threatened to erase the suffering self – the being inside the body. Other powerful distancing forces were at play: anaesthesia, the practice of pithing, and reflex action each showed that facial expression and bodily gesture did not necessarily relate to anatomical lesions, and that signs of suffering could be divorced from actual experience. The biological laws governing painful sensation seemed increasingly elusive. Sometimes intense suffering did not materialise externally, just as minor discomfort could produce great external effects.[8] Scientific signs such as movement, changes in colour, and secretive action could not always, as Javier Moscoso puts it, 'separate fact from fables'.[9]

Antivivisectionists, however, rejected claims that signs of pain and pain itself were unconnected; it seemed more likely that the scientist was mistaken than that the animal's physiology was faulty. Compassionate observers (like themselves), they claimed, were better equipped to translate animal feelings than those who treated animals as mere matter. The movement countered re-definitions of painful experience, and met the representative challenges of cross-species suffering with, to borrow Rachel Ablow's phrase, 'insistently "literary" or non-instrumental language'.[10] By reaffirming that imaginative sympathy was vital to comprehending another's suffering, antivivisection poetry and fiction counteracted distancing forces set in motion by scientific research. By attempting to re-connect 'sign' and 'thing', writers rejected the physiologist's claim that 'some sufferers did not really suffer at all'.[11] As Mayer notes, sentimental accounts were 'highly effective in eliciting interspecies sympathy in the Victorian reading public'.[12] Nonetheless, like other nineteenth-century writings about animals, antivivisection works also

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[6] Roselyne Rey, *The History of Pain*, trans. Louise Elliott Wallace, J.A. & S.W. Cadden (Cambridge, Mass: Harvard UP, 1995), p.191.
[7] Moscoso, *Pain,* p.122.
[8] Ibid., p.243.
[9] Ibid., p.89.
[10] Ablow, *Victorian Pain*, p.8.
[11] Ibid., p.3
[12] Mayer, 'Ways of Reading Animals in Victorian Literature' p.351.

displayed concerns about bridging the species divide.[13] Activist writers often occupied uneasy positions as translators or editors of animal experience. Since the process of cross-species transliteration was always vulnerable to misinterpretation, antivivisection fiction and poetry called attention to the process of reconstructing and communicating another's pain. The movement was essentially vexed in the same way as experimental science was: language, like pain, seemed equally troubled by the gap between signifier and signified.

H. G. Wells exploited the ambivalence surrounding inter-species pain perception produced by vivisection debates. Unlike many literary counterparts, he defended regulated animal experiments and his fiction and non-fiction works undermined the generic expectations of both scientific and literary writings about the subject. For instance, the 'question-and-answer' format typical of the 1875 Commission intermingles with fantastic, philosophical, and satiric elements in his short novel *The Wonderful Visit* (1895). *The Island of Doctor Moreau* (1896) is also a hybrid text; Wells borrows from a range of literary genres and contemporary discourses to tease out the implications of contemporary biological theories and practices to scientifically consider literary and linguistic expressions of pain. Evolution and practical physiology informed his explorations of the uneasy relationship between injury, experience, and expression, as well as his musings on the essential versus the superfluous nature of suffering. Yet, Wells also encountered the same problems relating to visibility, perception, and access to other minds that Victorian physiologists and antivivisectionists grappled with. Animal pain strained at representative limits and seemed to be a phenomenon which neither graphic expression nor language, man nor machine, pen nor scalpel, could fully capture.

Communicating animal pain

Oz Frankel notes that by the turn of the nineteenth century, expressions such as 'bluebook' and 'bluebookishness' had come to 'denote dry, tediously factual texts and individuals'.[14] Yet, the Royal Commission's 1876 *Report* recorded unexpected and impassioned exchanges relating to the diverse and competing assumptions that underpinned scientific beliefs about interspecies pain perception. Despite complaints that such a subordinate creature did not warrant serious consideration, conflicting accounts of the frog's susceptibility placed this humble amphibian – nicknamed 'the

[13] Ibid., p.349.
[14] Frankel, *States of Inquiry*, p.68.

physiologist's animal' – at the centre of debates about pain perception.[15] Some agreed that frogs felt pain in the same way as did dogs or horses: large or small, amphibian or mammal, cold- or warm-blooded, all suffered similarly.[16] Conversely, physiologists such as Michael Foster, Emmanuel Klein, and Joseph Lister insisted that frogs could not suffer very greatly, while at the very end of the spectrum G. H. Lewes, amongst others, suspected that they didn't feel pain at all.[17] Some attributed the frog's diminished pain sense to its lesser brain mass, underdeveloped cerebral hemispheres, and relatively small brain-to-body ratio, while others faulted the amphibian's 'diffused' vertebrate system for its 'twilight' consciousness.[18] Foster remarked that chloroforming such a creature was 'absurd', and his colleague E. A. Schafer declared that the distress that administering anaesthesia caused this animal outweighed the benefits.[19] However, the biochemist and veterinarian Arthur Gamgee routinely anaesthetized frogs by placing them in water into which chloroform had been diffused.[20] This haphazard approach to sedation, and the various rationales given for why the frog did or did not suffer, exposed major gaps in contemporary scientific theory and practice.

The First Commission was established in response to the 'growth of moral sentiment in the direction of a greater carefulness in the infliction of pain', and it tried to establish a universal measure of harm in order to recommend a framework for legislation.[21] However, when asked to distinguish between pain sensitivity on biological lines (e.g., cold- versus warm-blooded) and to consider social factors (e.g., domesticated versus wild), some scientists stringently avoided making definitive statements. When pressed about whether the wriggling of a worm impaled on an angler's hook implied pain, William Sharpey answered: 'I cannot venture to say as to that […]. Not unequivocally. I am unable to say. It is rather a hazardous thing to say'.[22] Time and again, the 'Father of British Physiology' refused to speculate about how the test subjects might feel or whether their pain truly hurt: 'I cannot well tell what they feel,' he exclaimed, 'I do not know, for instance, what *you* feel'.[23] One experiment described by Foster in the controversial *Handbook* brought tensions to a head.[24] It involved placing a frog into a water bath, gradually raising the

[15] *RRCV1*, p.217, p.219. In the 1830s and '40s British scientists preferred to vivisect reptiles rather than mammals. Frogs were popular in the later nineteenth century and the era of the 'lab rat' begun around 1909 when a particular strain of the animal, the Wistar rat, was bred for scientific purposes. See Kean, *Animal Rights,* p.97; Bates, *Anti-Vivisection and the Profession of Medicine in Britain,* p.180.
[16] *RRCV1*, p.39, p.296.
[17] Ibid., p.126, p.183, p.219, p.312; James Peter Warbasse, *The Conquest of Disease through Animal Experimentation* (London: Appleton & Co., 1910), p.17.
[18] Ibid., p.133, p.232, p.217, p.60, p.231, p.190.
[19] Ibid., p.126, p.190.
[20] Ibid., p.263.
[21] *RRCV1*, p.64.
[22] Ibid., p.26.
[23] Ibid. [emphasis in original].
[24] Burdon-Sanderson (ed.), et al. *Handbook for the Physiological Laboratory*, p.411.

temperature, and recording energetic movement. Commissioner Richard Holt Hutton, the longstanding and well-regarded antivivisectionist editor of the *Spectator*, interpreted the creature's motions as efforts to escape being boiled alive.[25] Conversely, Foster, Lister, and other physiologists, such as Dr. Frederick Pavy, argued that motor rather than sensory nerves were responsible for the frog's actions.[26] 'Struggling does not always signify pain,' warned one witness; 'movement does not necessarily imply suffering,' agreed Lister.[27] Lewes explained that sensitivity to injurious stimuli could remain without the presence of that 'special form of nervous sensibility' called 'pain'.[28] After all, anaesthetized patients often grimaced or squirmed during surgery yet, upon gaining consciousness, recalled no pain. Unfelt or instantly forgotten pain – in short, pain without experience, a fleeting 'mathematical moment' – didn't seem to qualify as pain at all.[29]

The fact that decerebrated or decapitated frogs also attempted to get out of heated water and would wipe corrosive acid from a limb in which no sensation should remain, seemed to confirm that the signs of discomfort made by unmutilated frogs were also false alarms.[30] Yet the practice of pithing could also complicate rather than clarify the difference between experience and expression, response and reflex. For example, the concept of the reflex as a mechanical and automatic unit of animal behaviour, utterly void of emotions and awareness, was compromised by David Ferrier's controversial experiments on brain localization. While lecturing on his research, he mimicked the expressions that test subjects had displayed while different brain regions were electrocuted, resulting in charges of cruelty from the RSPCA.[31] Ferrier insisted that the cat's repetitive gnawing action and the monkey's grimace were not signs of pain but 'merely mechanical movements performed during a state of profound unconsciousness'.[32] His colleague, James Crichton-Browne, claimed that specific movements, expressions, and sounds could be predictably reproduced across different animal bodies, adding that scientific investigators could 'play upon the animal as if it were a machine' or 'as if it were a piano-forte when anyone is playing upon its keys'.[33] Before Charles Scott Sherrington's experiments on the brains of cats strengthened the concept of 'pseudo-affective states' in the 1920s and '30s, claims that affective responses could be divorced from consciousness seemed far-fetched. It was one thing to accept the twitching of a frog's leg as

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25 French, *Antivivisection and Medical Science in Victorian Society*, p.52.
26 *RRCV1*, p.113, p.217.
27 Ibid., p.136, p.217.
28 Ibid., p.312.
29 Charles Richet, *Recherches expérimentales et cliniques sur la sensibilité* (Paris: G. Masson, 1877), p.258; Ablow, *Victorian Pain*, p.10.
30 Burdon-Sanderson (ed.), et al., *Handbook for the Physiological Laboratory*, pp.406–10.
31 *RRCV1*, p.171, p.175.
32 Ibid., p.167.
33 Ibid., p.168.

the result of reflex action but another to attribute complex 'emotive' reactions to mechanical movement.

Just as signs of suffering could mislead, pain could exist in still and silent bodies. Although chloroform and ether largely replaced older narcotics and analgesics, an alkaloid variously termed 'urare', 'curare', and 'woorari' continued to spark controversy. Originally used to poison arrows in Central and South America, it was employed in Europe's laboratories because it caused animals to lie conveniently motionless. However, vivisectors disagreed about whether curare destroyed the nerves of sensation or simply paralysed the body.[34] Antivivisectionists suspected the worst and were haunted by the thought that creatures 'drench'd with the hellish oorali', as Alfred Tennyson famously put it, were unable to express their pain or plead for mercy. The possibility that an anaesthetized body somehow felt pain that it could no longer complain about further separated the workings of the body and the mind, undermining any straightforward measure of sentience. It was no coincidence, Moscoso points out, that the London Association for the Prevention of Premature Burial was founded when anxieties about anaesthesia were at their zenith, nor that prominent antivivisectionists such as Walter Hadwen were members.[35] Surgery and vivisection both involved extended interference with an often-inert, quieted, yet not necessarily insensate body.[36] As anaesthesia became routine in hospitals and laboratories, the biological laws governing painful experience seemed increasingly elusive: serious injuries sometimes went unnoticed while the smallest discomforts produced great effect.

The idea of a scale of sensitivity, upon which life forms were ranked, united beliefs in the frog's limited pain perception. Physiologists typically argued that, as 'the very highest species in the range', humans were the most sensitive.[37] 'The lower we go in the scale of animal organisation', Lister stated, 'the lower is the sensibility'.[38] Foster concurred that the 'lower orders of creation' have less 'nervous sensation' and cannot feel a cut or blow as a higher animal would.[39] Some, he added, are so dulled to pain that 'you may pull their limbs off, and they seem to manifest no particular disapprobation'.[40] Nonetheless, the question of how much pain different animals experienced remained unanswered. Referring to frogs, Foster admitted that 'we may take it for granted that in proportion it feels less; but we also take it for granted that it does feel to a certain

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[34] Ibid., p.153, p.285

[35] Moscoso, *Pain,* p.133; [Unsigned], 'Literary Tale: Premature Burial and How it may be Prevented', *Lancet*, 4 March 1905, 577.

[36] Frances Power Cobbe, 'The Medical Profession and its Morality', *Modern Review*, 2 (1888), 296–326.

[37] *RRCV1*, p.132.

[38] Ibid., p.216.

[39] Ibid., pp.131–32.

[40] Ibid. See also Edward Deacon Girdlestone, *Vivisection: In Its Scientific, Religious, and Moral Aspects* (London: Marshall & Co., 1884), p.15; George Augustus Rowell, *An Essay on the Beneficent Distribution of the Sense of Pain* (Oxford: [n.pub] 1856), p.234; Warbasse, *The Conquest of Disease*, p.16.

extent'.[41] Some antivivisectionists criticised the scale of sensitivity as perverting the implications of evolutionary theory. In his essay *Some Popular Fallacies about Vivisection* (1875), Lewis Carroll pointed out that experimental physiologists justified their methods by insisting that, since all species shared basic physiological principles, results could be extrapolated to human beings. It was the height of disingenuousness then, Carroll insisted, to claim that 'man is twin brother to the monkey' and yet to 'presuppose the axiom that human and animal suffering differ *in kind*'.[42] Indeed, human-animal comparisons were frequently summoned to argue that pain was absent yet disavowed when the analogy risked bolstering charges of cruelty. For example, Lauder Brunton warned that 'pain in a frog, is not to be measured by pain in ourselves'.[43] However, when James Paget's claim, that inflammation experiments caused no serious harm, was challenged as 'guess work', the surgeon replied: 'I know what a drop of hot sealing-wax on my finger is; and I should do the same with a bat's wing'.[44]

Some commissioners had reservations about the 'archive of apologies and excuses for pain' drawn upon by witnesses and the '"ingenious metrics" used to determine how organised an organism might be'.[45] Nevertheless, the notion that 'higher' or more 'developed' creatures experienced greater pain sensitivity was generally accepted, as was the idea that sympathy was naturally extended to one's own 'kind' first and subsequently down the chain (from companion mammals such as dogs and cats, to reptiles, insects, etc.). One verse in '"Punch" Among the Vivisectors' exclaimed:

> Oh, *Punch*! For once forsake *The Times*,
> And leave alone the cats and dogs;
> One who so oft the t_ _ _ y plays,
> Might have some pity, – e'en for frogs.[46]

In one fell swoop, the poem caricatured the publication's obsequious alliance with experimental scientists and pro-science papers such as *The Times*, while also suggesting that, as a 'toady', *Punch* should pity its close relative, the frog.

Some physiologists argued that pain perception was influenced by non-biological factors because 'different animals of the same species show very different degrees of sensitiveness to pain'.[47] Greyhounds and spaniels were rumoured to be more pain-sensitive than mongrels and

[41] *RRCV1*, p.127.
[42] Carroll, *Some Popular Fallacies about Vivisection*, p.5 [emphasis in original].
[43] *RRCV1*, p.284.
[44] Ibid., p.17.
[45] Rob Boddice, 'Introduction: Hurt Feelings?', in *Pain and Emotion in Modern History*, ed. Rob Boddice (London: Palgrave Macmillan, 2004), pp.1-15 (p.3).
[46] [Unsigned], '"Punch" Among the Vivisectors', p.760.
[47] *RRCV1*, p.25.

working sheepdogs, and pure-blooded horses more so than cart horses.[48] Some supposed that the 'civilising' influence of domestication could increase sensitivity (especially to 'mental' and 'moral' pain), and Hutton campaigned for dogs and cats to be exempt from vivisection on the grounds of 'special sensibility'.[49] Of course, it was often the 'special sensibility' of human beings which compelled them to seek extra protections for companion animals. The 'scale of sensitivity' exacerbated ideological divisions along class and race lines by denying or distancing the sufferings of particular groups.[50] It was, for instance, explicitly used to justify white supremacy and colonial expansion. When asked why he supposed that frogs did not suffer, Lewes replied that 'among human beings, especially when you descend to the savages, the sensibility to pain becomes less and less'.[51] Frances Power Cobbe agreed that the 'savage' felt less pain than the civilised human, just as wild animals felt less than domestic creatures, although she maintained that humans were no more sensitive to physical pain than the 'higher animals'.[52] While Boddice comments that the sufferings of certain groups (such as infants, women, racial others, and animals) had always been minimalised, mythologised, and condoned, there was now a pseudoscientific rationale for the 'politics of pain' that served Victorian elites.[53]

Experimenters needed to convince the Commission that the same signs meant different things, in other words, that the vocalisations and movements of *some* animals, *sometimes* signified, and furthermore that they alone could distinguish between the two. Yet several commissioners could neither reconcile signs of suffering with a lack of consciousness nor the verbal testimonies of scientific witnesses with the test subject's body language. The proceedings inevitably produced heterogenous voices; the competing ideas created by fifty-three witnesses answering 3,764 questions is captured in the 1876 *Report*.[54] Still, at the heart of this 'clamour' was the deafening silence of the animal subject whose interiority was always tantalisingly beyond both vivisector and anti-vivisector's reach. As one scientist simply put it: 'the animal cannot speak to tell you whether it feels pain or not'.[55] The Commission's summary report recommended that anaesthesia should always be administered and tellingly warned against 'too readily admitting convenient doctrines'; 'proper care should be taken', it concluded, 'to insist upon the removal of the sensibility to pain'

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[48] Ibid., p.150.
[49] Ibid., p.xxii.
[50] Liz Gray, 'Body, Mind and Madness: Pain in Animals in Nineteenth-Century Comparative Psychology', in *Pain and Emotion in Modern History* ed. Rob Boddice (New York: Palgrave Macmillan, 2014), pp.148-63 (p.148, p.158).
[51] *RRCV1*, p.313.
[52] Lori Williamson, *Power and Protest: Frances Power Cobbe and Victorian Society* (New York: Rivers Oram Press, 2005), p.145.
[53] Boddice, 'Introduction: Hurt Feelings?', p.3; Bourke, *The Story of Pain*, p.19.
[54] Frankel, *States of Inquiry*, p.174, p.303.
[55] *RRCV1*, p 22.

in every case.[56] Yet methods to remove discomfort, such as pain relief and pithing, remained fraught with difficulties. By the 1870s and '80s, the diagnostic and therapeutic value attributed to pain, and even the assumption that it was a reliable signalling system, was fast disintegrating.[57] 'New' nervous disorders, such as hysteria and neurasthenia, and those that followed wartime injuries, such as selective paralysis and phantom limbs, loosened the relationship between tissue damage, sensation, and signs of suffering further still. Reports of these strange conditions filled the pages of both popular literature and medical books, wherein discussions about how to separate genuine and fraudulent complaints generated what Moscoso terms 'the metaphysics of suspicion'.[58]

As signs of pain seemed less reliable and insensate and unconscious bodies continued to respond unpredictably, scientists and doctors endeavoured to close avenues for human error. Drawing inspiration from Michel Foucault's *The Birth of the Clinic* (1963) Moscoso and Mary Fissell argue that nineteenth-century British medicine saw 'a crisis of trust in private testimonies' as patients' accounts were rendered 'utterly redundant' by a focus on clinical signs.[59] 'The new physiology', Moscoso writes, 'had always preferred the testimony of the body to the confusing words of a witness'.[60] As medicine became scientific, the laboratory's 'object-oriented role system' threatened to usurp the 'person-oriented role system' of bedside care.[61] The shift of authority from verbal account to bodily gesture and from person- or animal-in-pain to pain as a distinct phenomenon was furthered by new graphic registration and recording technologies. As Lorraine Daston and Peter Galison argue, these symbolised the quest for a more objective, non-interventionist, and mechanical scientific practice governed by biological laws. The qualities required of laboratory workers, such as 'painstaking care and exactitude, infinite patience, unflagging perseverance, [and] preternatural sensory acuity', were epitomised by machines; however self-disciplined, the attentions of human workers would eventually 'wander', their pace would 'slacken', and their hands were bound to 'tremble'.[62]

Self-recording devices such as manometers, kymographs, and sphygmomanometers provided direct and sustained access to the body. Through them, researchers hoped to establish 'a natural and direct correspondence' between the intensity of stimuli and the magnitude of sensation,

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[56] *RRCV1*, p.xix.
[57] Bourke, *The Story of Pain*, p.9.
[58] A. D. Hodgkiss, 'Chronic Pain in Nineteenth-Century British Medical Writings', *History of Psychiatry*, 2 (1991), 27-40; Moscoso, *Pain,* p.123.
[59] Moscoso, *Pain,* pp.83–84; Mary Fissell, 'The Disappearance of the Patient's Narrative and the Invention of Hospital Medicine', in *British Medicine in an Age of Reform* ed. Roger French and Andrew Wear (London: Routledge, 1991), pp.92-109 (p.93).
[60] Moscoso, *Pain,* p.89.
[61] Jewson, 'The Disappearance of the Sick Man', pp.231-32.
[62] Lorraine Daston and Peter Galison, 'The Image of Objectivity', *Representations*, 40 (1992), 81-128 (p.183).

and between emotions and expressive signs.[63] As well as removing the experimenter from a large part of the data collection process, these instruments also offered a way to bypass the subject's consciousness and extract an unfiltered version of their experience – one that might even be unavailable to the subject itself. As Dr Lamb, the sinister vivisector of Barry Pain's novel *The Octave of Claudius* says to the trembling rabbit that he has plucked out of its hutch: '[n]ow you are going to die in a dream, but first you have got to tell me what you know, but don't know that you know'.[64]

These devices also furthered physiology's drive towards universal non-verbal representation. Scientific studies of emotional expression often noted the shortcomings of human language including the lack of a standardised vocabulary for emotions and the unreliability of linguistic reports.[65] Dror notes that in late nineteenth- and early twentieth-century journals of physiology, psychology, and medicine, the argument for 'a semiotically meaningful relationship between representation and affective experience' was often presented implicitly through graphic displays (charts, diagrams etc.) which made 'hidden narratives of emotion' visible.[66] In 1865, for instance, Claude Bernard used the cardiograph invented by another French physiologist called Étienne-Jules Marey to chart the action of the heart.[67] He pointed out that the manifestations of emotions which registered in this organ (such as fear, surprise, and excitement) were 'imperceptible to all, except for the physiologist'.[68] Élie de Cyon made a similar claim in his 1873 lecture, 'The Heart and the Brain'; he reported that each emotion made a 'peculiar and characteristic' curve on the graphic paper.[69] Marey, the scientist who created the polygraph and designed the wearable sphygmomanometer, put the point more directly: '[b]orn before science, and not being made for her', he wrote, 'language is often inappropriate to express exact measures or definite relations'.[70] He dreamed of 'a wordless science that spoke instead in high-speed photographs and mechanically generated curves'.[71] Indeed, numerical and graphic modes of expression seemed to offer a purer alternative to the unstable 'ordinary language' upon which scientists had relied and which had already been (ab)used by adversaries.[72] By avoiding human intervention between nature and representation altogether and by circumventing the slippery qualities of linguistic expression,

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63 Moscoso, *Pain,* p.122.
64 Pain, *The Octave of Claudius*, pp.58-59.
65 Otniel E. Dror, 'The Scientific Image of Emotion: Experience and Technologies of Inscription', *Configurations*, 7.3 (1999), 355-401 (p.366-37).
66 Ibid., pp.375-76.
67 Claude Bernard, 'Sur la physiologie du cœur et ses rapports avec le cerveau', in *Leçons sur les propriétés des tissus vivants*, ed. Émile Algave (Paris: Germer Ballière, 1887), pp.421-71.
68 Ibid, p.469.
69 Élie de Cyon, 'Le cœur et le cerveau', *Revue Scientifique de la France et de l'Étranger*, 21 (1873), 481-89 (p.487); Fernand Papillon, 'Physiology of the Passions', *Popular Science Monthly*, March 1874, p.559.
70 Étienne-Jules Marey, *La méthode graphique dans les sciences expérimentales et principalement en physiologie et médecine* (Paris: G. Masson, 1878), p.iii.
71 Daston and Galison, 'The Image of Objectivity', p.81.
72 Ibid., p.81.

machines that made heartbeats and muscle contractions visible on the page offered a new kind of testimony articulated in 'the language of the phenomena themselves'.[73]

Unearthing accurate animal 'testimony' via physiological signs and equipment required redirecting the gaze away from the experimental subject. Unlike those in French and German publications, British textbooks rarely depicted or described the animal undergoing the operation.[74] White notices that Burdon-Sanderson's *Handbook* prioritised physiological equipment that in the vast majority of cases is isolated from the animal body. A notable exception is the frog pictured below. But, even in this instance, the animal is 'plugged into' the device via a tube leading to its thigh. In fact, the image's description – 'simple spring myograph of Marey, arranged horizontally' – eclipses the animal entirely: the frog has become a working part of the machine (see Fig. 20).

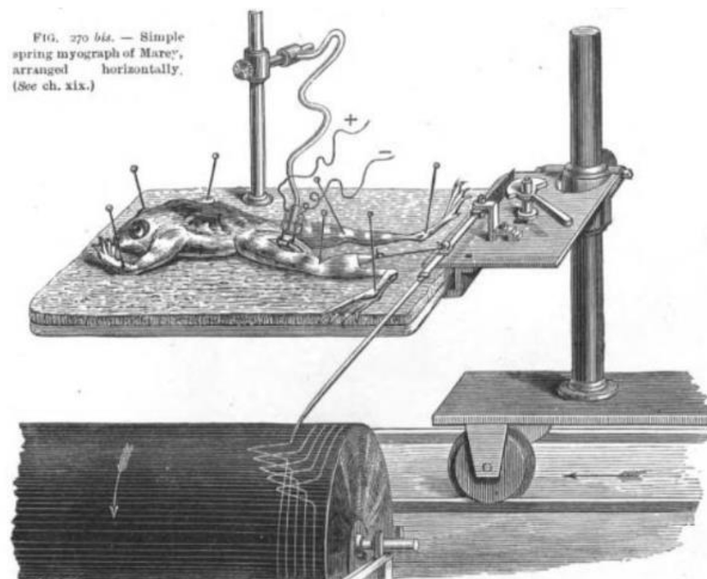

Figure 20. 'Simple spring myograph of Marey, arranged horizontally' [Plate CIII, fig. 270], in Burdon Sanderson (ed.), et al., *Handbook for the Physiological Laboratory*, 2 vols (London: J. & A. Churchill, 1873), II.

As Boddice writes, physiological manuals 'emphasised the output of physiological apparatus – the scratches of the needle in wax – rather than on the input – the excited organs of the living animal'.[75] White notes that, in descriptions of experiments, '[t]he animal subject was addressed only insofar as it was secured to the table. Thereafter, concern was given entirely to the manipulation of

73 Marey, *La méthode graphique*, pp.iii–iv.

74 Paul White, 'The Experimental Animal in Victorian Britain', in *Thinking with Animals: New Perspectives on Anthropomorphism*, ed. Lorraine Daston and Greg Mitman (New York: Columbia UP, 2005), pp.59–84 (p.70).

75 Boddice, *The Science of Sympathy,* p.80.

registering machines, scalpels, forceps, and hooks, and to the intricacy of operations'.[76] According to Mayer, the decision to depict and describe these machines in isolation from the animal body was prompted by the British public's growing sensitivity to the suffering such images implied.[77] Boddice agrees that physiological handbooks' 'diagrammatic gaze' led the reader's eye *into* the bodies of the animals in order to 'avoid the aesthetic sensibilities associated with the bloody wound'.[78] However, this way of looking beyond or through the animal, and the attention that was paid to the biological data it produced could, in fact, reveal that British and European physiologists shared similar attitudes and approaches. By leading the reader's gaze into the animal, the body's mechanics were abstracted and foregrounded. Incisions, for instance, became windows into intricate interiors filled with veins, arteries, glands, and nerves (see Fig. 21).

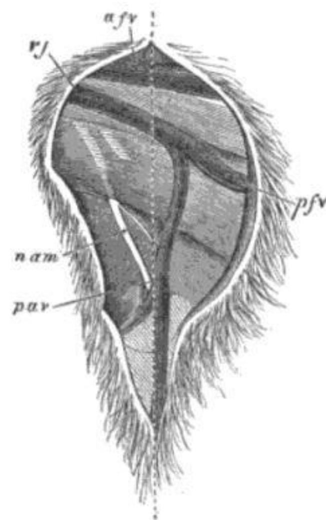

Figure 21. 'Parts exposed in the rabbit by an incision extending from the thyroid cartilage to the root of the left ear' [Plate LXXXIX, fig. 226], in Burdon Sanderson (ed.), et al., *Handbook for the Physiological Laboratory*, 2 vols (London: J. & A. Churchill, 1873), II.

The invitation to observe the wounded body (whether via detailed descriptions or visual displays) meant that readers teetered on the edge of complicity. In his essay, 'Vivisection' published in the literary monthly *Macmillan's Magazine* (1874), Michael Foster thrust the scalpel into readers' hands. Relaying a common operation on an anaesthetized rabbit, he wrote:

> You pull it and pinch it; it does not move. You prick with a needle the exquisitely-sensitive cornea of its eyes; it makes no sign, save only perhaps a wink. You make a great cut through

[76] White, 'Sympathy under the Knife', p.105.
[77] Mayer, 'Ways of Reading Animals in Victorian Literature', p.350.
[78] Boddice, *The Science of Sympathy*, p.80 [emphasis in original].

> its skin with a sharp knife; it does not wince. You handle, and divide, and pinch nerves which, in ourselves, are full of feeling; it gives no sign of pain. Yet it is full of action.[79]

Foster's point here, emphasised by the pattern of semi-colons, is that an animal under the influence of chloral is insensible to pain: 'it does not move', 'it makes no sign', 'it does not wince'. Yet, as Loveridge notes, readers are invited to participate in the operation by the tempting tactility of the description married with the pronoun 'you'.[80] Notably, Foster permits them to perform the basic manual operation – to 'pull', 'pinch', 'prick', 'cut', 'handle', and 'divide' the rabbit – but not to use laboratory equipment or record results. He switches back to the masculine third person singular at this crucial moment, writing that '[t]he physiologist',

> brings to bear on this breathing, pulsating, but otherwise quiescent frame, the instruments which are the tools of his research. He takes deft tracings of the ebb and flow of blood in the widening and narrowing vessels; he measures the time and the force of each throb of the heart, while by light galvanic touches he stirs this part or quiets that; [….] he gathers the juice which pours from one or another gland; he divides this nerve, he stimulates that, and marks the result of each.[81]

The rabbit's body is described as 'full of action', the 'stage of manifold events', and the individual problems that the investigator seeks to resolve form 'a crowd' coming thick and fast, one after the next. This theatrical imagery familiarises the scene and emphasises the reader's later role as eager spectator.

Antivivisectionists quickly spotted the attention lavished upon insensate equipment yet denied to the 'suffering' animal. The *Zoophilist* article discussed in chapter one, which compared the *Handbook* to a cookbook, part quoted and part paraphrased Burdon-Sanderson's description of an asphyxia experiment:

> Proceed as above. Divide the lingual nerve. A cannula having been placed in the carotid, a second manometer is placed, &c. For this purpose [asphyxia], a cannula must be fixed air-tight in the trachea, &c. In these spasms which accompany the final gasps of an asphyxiated animal, the head is thrown back, and they must be carefully distinguished by the student from the expiratory convulsions previously described [and so on through 558 pages].[82]

This passage lingers on two registering machines for measuring pressure and gas: a mercurial manometer and a kymograph. The dog's body parts are mentioned only in relation to the placement of these devices. Michael Lynch argues that this erasure of the animal replicates a consecration ritual whereby the singular body transforms into a 'bearer of transcendental significances' or, as White puts it, 'into a universal (or sacred) ideal: a body of knowledge'.[83] If the

[79] Michael Foster, 'Vivisection', *Macmillan's Magazine*, 29 (1874), 367-76 (pp.370-71).
[80] Loveridge, 'Historical, Fictional, and Illustrative Readings of the Vivisected Body 1873-1913', p.196.
[81] Foster, 'Vivisection', pp.370-71.
[82] [Unsigned], 'Notes and Notices', *Zoophilist* (2 February 1891), p.193.
[83] Michael 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*, 18.2 (1988), 265–89 (p.265); White, 'Sympathy under the Knife', p.106.

animal is reimagined as a repository of meaning, the kymograph (meaning 'wave writer') translates its import. The stylus records the manometer's movements simultaneously with the variations of pressure in the crural artery upon a sheet of paper wrapped around a revolving drum (see Fig. 22). For the *Handbook*'s authors and scientific readers, the detailed illustrations and descriptions of recording instruments, graphic displays, and microscopic sections represented the value gained by an instrumental use of pain: that is, the leveraging of an epistemic product.[84] As Loveridge puts it, 'the wounded vivisected body, when read under the physiological gaze, can be rendered as a medium for scientific communication'.[85] In this context, the inscription generated by the kymograph is presented as a meaningful record. Yet, according to antivivisectionists, the vivisected body cannot be read as a literary object since vivisection destroys rather than generates meaning. The vivisector is neither a 'trustworthy witness' before whom 'inert bodies, incapable of will and bias but capable of showing, signing, writing, and scribbling on laboratory instruments' offer up their secrets, nor is he an interpreter of the semiotics of groans and expressive gestures into clinical signs.[86] He is merely an author of the animal's agony. Likewise, the kymograph has no role in knowledge production, but merely writes out the animal's spasms, convulsions, and arching neck, which appear on the page as a record of pain and injustice rather than valid 'results'.

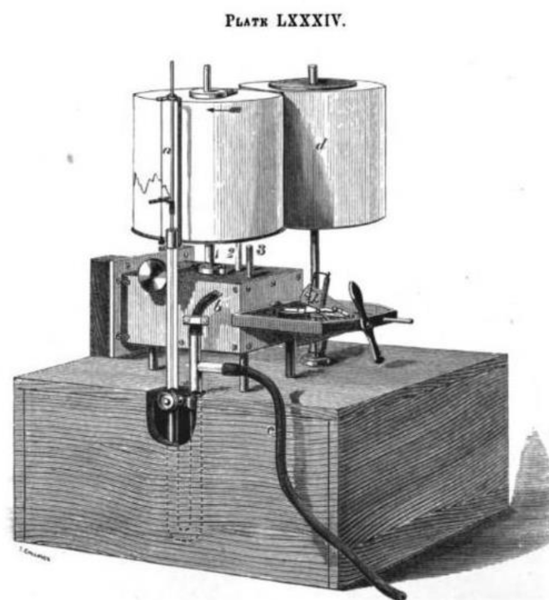

Figure 22. 'The mercurial kymograph' [Plate LXXIV, fig. 202], in Burdon Sanderson (ed.), et al., *Handbook for the Physiological Laboratory*, 2 vols (London: J. & A. Churchill, 1873), II.

[84] Moscoso, *Pain,* p.8.
[85] Loveridge, 'Historical, Fictional, and Illustrative Readings of the Vivisected Body', p.192.
[86] Bruno Latour, *We Have Never Been Modern*, trans. Catherine Porter (Cambridge, Mass: Harvard UP, 1993), p.23.

Amid the hundreds of royal commissions established in nineteenth-century Britain to address pressing social questions and consider the interests of vulnerable groups, the 1875 Commission on Vivisection was unique as it sought to 'give voice' to those who quite literally could not speak for themselves. Animal silence combined with an increasingly destabilised and contested understanding of pain's function caused vivisectors and antivivisectionists to battle over rights to representation. The belief that pain could operate elusively, even invisibly, emboldened scientists' claims that it could not be estimated by the naked eye and, therefore, that specialist tools were required to deconstruct (or reconstruct) animal experiences. Yet, as the Commission's *Report* demonstrated, gaps in understanding remained, and antivivisectionists exploited these spaces in imaginative, often literary, ways. Unlike physiology, literature embraced the limits of human understanding about animals. Karen Edwards, Derek Ryan and Jane Spencer note that the 'blank' or 'shadowed space' in our understanding of animals 'becomes the site for imaginative constructions – of, for instance, what it is to see or think or feel as an animal does'.[87] To stimulate imaginative and affective relationships with animal subjects these spaces needed to be protected. At the same time, however, the movement had to show that animal pain (and other feeling-states) were available to all compassionate observers.

Although antivivisectionists campaigned against unnecessary suffering, their agenda actually relied upon pain's continuance. Because sympathetic feelings were elicited by identification with another's painful experience, many believed that man's ability to suffer incentivised compassion.[88] Chloroform and ether chemically cut the reciprocal exchange of sympathetic pain: '[t]he benumbed object excited nothing in the viewer (operator), eliminating the possibility of projecting sensation back into the object'.[89] Thus, anaesthesia threatened to quell public agitation against vivisection and make operations pleasanter for physiologists, both of which would encourage live experiments.[90] These factors, as well as fears that pain relief was neither long-lasting nor complete, explain why George Hoggan described chloroform as 'the greatest curse to vivisectable animals'.[91]

More broadly, the notion that pain was an eradicable earthly scourge rather than a permanent feature of some cosmic plan challenged a range of traditional theistic and ethical beliefs. Anaesthesia had, as one writer for the *Westminster Review* put it in 1871, demonstrated the need for

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[87] Edwards, Ryan and Spencer, 'Introduction', *Reading Literary Animals*, p.1.
[88] Williamson, *Power and Protest,* p.103.
[89] Boddice, *The Science of Sympathy*, p.90.
[90] See Rob Boddice, 'Species of compassion, aesthetics, anaesthetics, and pain in the physiological laboratory', *Interdisciplinary Studies in the Long Nineteenth-century*, 15 (2012), 1-22 (p.19).
[91] George Hoggan, 'Anaesthetics and the Lower Animals' [Letter to the Editor], *Spectator*, 48.2454 (29 May 1875), 690-91 (p.691); *RRCV1*, p.203. See also George Hoggan 'Anaesthetics and the Lower Animals' [Letter to the Editor], *Spectator*, 48.2456 (12 June 1875), 14-15.

'a complete revisal of the theories of the purposes of bodily pain hitherto held by moralists'.[92] As physiologists stripped back pain's cultural clothing, a modern, materialist idea of pain, 'emptied of meaning and merely buzzing mindlessly along the nerves' emerged.[93] Antivivisectionists, however, tended to spiritualise feelings and wanted to retain the moral and religious meanings attached to suffering. Many still believed that pain was a purposeful part of God's design. Cobbe, for instance, insisted that freedom from sin must precede freedom from disease, and 'demanded that men and women build up their moral characters to withstand suffering' rather than buy bodily ease by the blood of innocent animals.[94] The poem, 'Vivisection', written by the suffragette Warner Snoad and first published in the *Women's Penny Paper* and then in the *Zoophilist*, echoed this sentiment of virtuous self-sacrifice.[95] Similarly, Hutton claimed that he would prefer to watch his wife in agony than treat her with medicine gained by animal experiments.[96] Likewise, Robert Browning assured Cobbe of his willingness to pay the ultimate price: 'I would rather submit to the worst of deaths, so far as pain goes', he promised, 'than have a single dog or cat tortured on the pretence of sparing me a twinge or two'.[97] He reiterated this sentiment years later in a two-septet poem, 'Arcades Ambo' (1889) which appeared on the *Zoophilist*'s cover in January 1890:

> *A*. You blame me that I ran away?
> Why, Sir, the enemy advanced:
> Balls flew about, and – who can say
> But one, if I stood firm, had glanced
> In my direction? Cowardice?
> I only know we don't live twice,
> Therefore – Shun death is my advice.
>
> *B*. Shun death at all risks? Well, at some!
> True, I myself, Sir, though I scold
> The cowardly, by no means come
> Under reproof, as overbold
> – I, who would have no end of brutes
> Cut up alive to guess what suits
> My case and save my toe from shoots.[98]

Browning's 'delicate satire on the cowardice of the advocates of vivisection' is inspired by Virgil's seventh *Eclogue* which narrates a song contest between two Arcadian shepherds.[99] In 'Arcades

[92] [Unsigned], 'The Function of Physical Pain: Anaesthetic', *Westminster Review*, 40.1 (July 1871), 198-200 (p.198).
[93] David. B. Morris, *The Culture of Pain* (Berkley: University of California Press, 1991), p.4.
[94] Williamson, *Power and Protest*, p.172.
[95] Warner Snoad, 'Vivisection', *Zoophilist*, 10.3 (1 July 1890), 57.
[96] Williamson, *Power and Protest*, p.173.
[97] Browning met Cobbe in 1860 when she spent three months convalescing in Florence. See [Unsigned], 'Obituary: Robert Browning', 206.
[98] Browning, 'Arcades Ambo', 192.
[99] Robert Browning, *The Poetical Works of Robert Browning: Volume XV: Parleyings and Asolando*, ed. Stefan Hawlin and Michael Meredith (Oxford: Clarendon Press, 2009), p.384.

Ambo' (meaning 'Arcadians Both'), the bucolic landscape is transformed into a chaotic battlefield in stanza one, and in stanza two 'Virgil's prosperous animals […] become "brutes", mere objects for dissection'.[100] The second speaker's readiness to sacrifice 'no end of brutes' to save his 'toe from shoots' is a cowardly dereliction of duty especially since his gout may be caused by overindulgence.[101] The Rev. F. O. Morris celebrated the 'loud ring of contempt in these lines for the vivisector', and the *Zoophilist* triumphantly declared:[102]

> This then is Mr Browning's last word on our subject; and a strong one! As every one to scorn those other cowards who would sanction vivisection for the sake of the immunity they hope it may bring them from pain and danger.[103]

Although this heavy moralising risked perpetuating the stereotype that they were misanthropic fanatics, antivivisectionists welcomed such conviction.[104] Animals were also sometimes presented as virtuous martyrs, but since lower creation could not sin, suffering did not offer them any of the moral lessons that it could bestow upon human beings. Thus, animal pain, especially when inflicted intentionally, was purely degrading.[105]

In her landmark work *The Body in Pain: The Making and Unmaking of the World* (1987) Elaine Scarry claimed that physical suffering, especially when inflicted deliberately as in cases of torture or warfare, is inexpressible. Pain, she claimed, actively destroys the language that might objectify it.[106] Scarry's work has sparked much debate, and researchers including Moscoso, Ablow, and Barbara Korte have argued that, in fact, literary writing is uniquely capable of capturing and conveying pain.[107] Korte writes that literature 'has represented and reflected pain for centuries' and that fiction 'provides a discursive space in which the possible meanings of suffering can be explored extensively and sometimes in more radical terms than in actual experience'.[108] Ablow adds that pain strains against and alters rather than destroys language: 'it rearranges common protocols, often becoming lyrical, poetic, or rhapsodic in ways that clearly call attention to themselves as literary'.[109] As Joanna Bourke observes, claims that one's anguish is 'beyond words' is often

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[100] Browning may have drawn his warfare imagery from the discussion of vivisection by [Vernon Lee] Violet Paget, 'Honour and Evolution', *Baldwin: being dialogues in views and aspirations* (London: T. Fisher Unwin, 1886), pp.127-84 (p.150, p.157). See Browning, *The Poetical Works of Robert Browning: Volume* XV, ed. Hawlin and Meredith, p.386.
[101] Browning emphasises this by changing the final line from 'secures my head from shoots' to 'my toe'. See Browning, *The Poetical Works of Robert Browning: Volume* XV, ed. Hawlin and Meredith, p.387, n.14.
[102] F. O. Morris, [Letter], *Zoophilist*, 9.10 (1 February 1890), 225.
[103] [Unsigned], 'Science in Poetry', [reprinted from BMJ 5 October 1889], *Zoophilist*, 9.8 (2 December 1889), 177
[104] Williamson, *Power and Protest*, p.172.
[105] Obenchain, *The Victorian Vivisection Debate,* p.31.
[106] Elaine Scarry, *The Body in Pain: The Making and Unmaking of the World* (Oxford: Oxford UP, 1985), p.161, p.11.
[107] Moscoso, *Pain,* p.2, p.55.
[108] Barbara Korte, 'The Semantics of Physical Pain in Science Fiction', *English Studies*, 90.3 (2009), 294-304 (p.294).
[109] Ablow, *Victorian Pain*, p.8.

rhetorical.[110] For instance, in her essay 'On Being Ill' (1930) Virginia Woolf claimed that 'language at once runs dry' when a sufferer is asked to describe their pain, but then continues:[111]

> There is nothing ready made for him. He is forced to coin words himself, and, taking his pain in one hand, and a lump of pure sound in the other (as perhaps the people of Babel did in the beginning), so to crush them together that a brand new word in the end drops out.[112]

As this passage implies, barriers to communicating pain can catalyse linguistic creativity. Certainly, antivivisectionist writers used inventive methods to make animal suffering accessible.

In *The Descent of Man* (1871) Charles Darwin proposed that 'language owes its origin to the imitation and modification of various natural sounds, the voices of other animals, and man's own instinctive cries, aided by signs and gestures'.[113] Debates about whether animals might one day evolve to 'speak' like humans ensued.[114] The anti-evolutionary linguist and philologist F. Max Müller did not believe so; 'The one great barrier between the brute and man is *Language*', he claimed, '[l]anguage is our Rubicon and no brute will dare to cross it. […] no process of natural selection will ever distill significant words out of the notes of birds or the cries of beasts'.[115] As the antivivisection movement was well aware, animal 'self-expression would be an act of self-definition' which would disrupt species hierarchies with the 'dignity-defining' power of words.[116] Henry Salt of the HL wrote bitterly that 'it is convenient to us men to be deaf to the entreaties of the victims of our injustice; and, by a sort of grim irony, we therefore assume that it is they who are afflicted by some organic incapacity – they are "dumb animals" forsooth!'[117] Some wondered whether a biological deficiency was responsible for thwarting cross-species communication. For example, *Animal World* mused that perhaps men could not hear fish speak or sing because they lacked the auditory organ needed to do so.[118] Others wondered whether human beings simply weren't paying enough attention to animals. For example, in an unsigned article, titled 'Dog Language', *Animals Guardian* scoffed at those who 'foolishly imagine that a dog makes but one

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[110] Bourke, *The Story of Pain*, p.28.
[111] Virginia Woolf, 'On Being Ill', in *The Moment and Other Essays* (1926; New York: Harcourt, Brace & Co., 1948), p.11.
[112] Ibid.
[113] Charles Darwin, *The Descent of Man* (1871; London: Penguin, 2004), p.109.
[114] For discussions of speech as a marker of human uniqueness see Christine Ferguson, *The Brutal Tongue: Language, Science and Popular Fiction in the Victorian Fin-de-Siècle* (New York: Ashgate, 2006); Stephen Alter, *William Dwight Whitney and the Science of Language* (Baltimore, MD: John Hopkins UP, 2005); Gregory Radick, *The Simian Tongue: The Long Debate about Animal Language* (Chicago: University of Chicago Press, 2007).
[115] F. Max Müller, *Lectures on the Science of Language, Delivered at the Royal Institution of Great Britain in April, May, and June, 1861* (London: Longman, 1861), p.357.
[116] Jennifer Esmail, *Reading Deafness: Signs and Sounds in Victorian Literature and Culture* (Athens: Ohio UP, 2013), p.108; Robert McKay, 'The Murkiness of Mercy: The Discourse of Species and the Ethics of Feeling in Michel Faber's *Under the Skin*', *British Animal Studies Network Meeting* (Glasgow: University of Strathclyde, 25 April 2014).
[117] Salt, *Animal Rights Considered in Relation to Human Progress*, p.14.
[118] [Unsigned], 'The Language of Animals', *Anti-Vivisectionist*, 6.155 (12 July 1879), 432-33 (p.432).

remark – "bow-wow-wow" and declares that '[i]n point of fact, the dog not only has a large vocabulary of spoken words, but he adds to these a system of gestures by the aid of which he can express almost any thought'.[119] Like Salt, Cobbe believed that some species possessed 'language, or at least, an advanced communicative ability with humans [and] only those blinded by tradition or hardened by scientific cruelty could dismiss their unmistakeable articulations'.[120] Therefore, antivivisection societies promoted 'listening' to animals in order to remedy their mistreatment and writers echoed this message by regularly featuring an 'animal, only too eloquent if properly listened to, wilfully silenced by a stubborn human refusal to hear and recognise its earnest speech'.[121] Whether the animal's inability to communicate was biologically determined or imposed by mankind's shortcomings, antivivisectionist writers determined to 'give voice to the voiceless' and 'speak the word for beast and bird'.[122]

Animal autobiography was one avenue. Anna Sewell's best-selling children's book, *Black Beauty: His Grooms and Companions, the Autobiography of a Horse* (1877), remains the most notable example, but many animal protectionists experimented with this burgeoning genre. Association and advocacy periodicals often included short stories from a dog's perspective which were suitable for both children and adults.[123] Much like a human autobiography, the teller in these works provides an account of significant situations they have experienced over their lifetime leading up to the moment of narration.[124] As Herman notes, there is 'a kind of doubled or layered relationality' at work in these texts:

> That between the human author of the narrative and the nonhuman agent whom the author projects as telling it, and that between the animal narrator and the range of others, human as well as nonhuman, to whom the animal teller, in turn, orients in recounting, contextualizing, and explaining or justifying the actions and reactions that make up the story of the teller's life.[125]

Victorian animal autobiographies often navigated the relationship between human author and non-human teller by presenting the former as a mediator or mouthpiece for the latter, typically a 'translator' or 'compiler'. For example, Cobbe's animal autobiography, *The Confessions of a Lost Dog* (1867) is 'reported by her mistress' and Ouida's 'dogography' *Puck* (1870) is 'related by himself and

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119 [Unsigned], 'Dog Language', *Animals Guardian*, 3.4 (January 1893), 75.
120 Ferguson, *The Brutal Tongue*, p.105.
121 Ibid., p.115.
122 Mayer, 'The Vivisection of the Snark', p.443; Ella Wheeler Wilcox, 'Poem', *Anti-Vivisectionist Review*, August 1909, p.56.
123 See E. C. Phillips, 'Only a Mongrel: An Autobiography', *Animal World*, 7.76 (1 January 1876), 3-5; Bertha Von Hacht, 'The Dogs of Fiction', *Animal World*, 18.214 (1 July 1887), 102-04.
124 David Herman, 'Animal Autobiography; Or, Narration beyond the Human', *Humanities*, 5.82 (2016), 1-17 (p.1).
125 Ibid.

edited by Ouida'.[126] Likewise, in the preamble to the poem 'A Horse's Petition to his Driver' (1876), published in *Animal World*, we are told that the animal,

> spoke to his driver; not perhaps as Balaam's ass did, but certainly either personally or by deputy. His words were taken down by a reporter, who handed them to the Society in Jermyn Street [the RSPCA]. […] the society printed them, and has circulated many thousand copies.[127]

The biblical reference recalls the donkey carrying the prophet Balaam which, upon seeing an angel, refuses to comply with his rider's orders.[128] When Balaam begins to punish this disobedience, the donkey is miraculously granted speech to complain about his ill-treatment. *Animal World* admits that, perhaps, this contemporary beast of burden was not literally granted the same power but instead communicated 'by deputy' – i.e. via a human representative. This whimsical account of the poem's appearance emphasised the point that, to effectively represent suffering creatures, one must perceive the world through their eyes.

Antivivisection poems also foregrounded the animal's 'voice' by presenting human writers as translators of whimpers, barks, and screeches into eloquent appeals for mercy and justice.[129] 'The Vivisected Dog' (1877) published in the *Home Chronicler* features a speaker who watches a vivisection in horror.[130] It begins,

> He lay, poor creature, panting on the ground
> His tongue lolled out, his eyes were shot with blood;
> And from his lips escaped a moaning sound,
> As he rolled, writhing, in the crimsoned mud (ll.1-4)

Despite the dog's gasps of pain, the poem's speaker paints a picture of heroic fortitude, claiming that the animal 'had scorned to whimper like a cur, or bite; | But suffered silently, resolved to bleed | Without a groan, without a snarl of spite' (ll.18-20). These contradictory statements about the animal's sound and silence are further complicated in later verses:

> Oh, how he moaned, and to me standing by
> His moaning seemed to grow articulate,
> And bending down until my ear was nigh
> His quivering lips, they murmur'd his harsh fate
>
> Methought I heard him groaning his regrets
> […]

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126 Frances Power Cobbe, *The Confessions of a Lost Dog, Reported by her Mistress* (London: Griffith & Farran, 1867); Ouida, *Puck: His Vicissitudes, Adventures, Observations, Conclusions, Friendships, and Philosophies Related by Himself and edited by Ouida*, 2 vols. (Leipzig: Bernhard Tauchnitz, 1870).

127 [Unsigned], 'The Horse and his Critics', *Animal World*, 7.84 (1 September 1876), 134.

128 Numbers 22:28.

129 Mayer, 'Ways of Reading Animals in Victorian Literature', p.354; Mary Sanders Pollock, 'Ouida's Rhetoric of Empathy: A Case Study in Victorian Anti-Vivisection Narrative', in *Figuring Animals: Essays on Animal Images in Art, Literature, Philosophy, and Popular Culture*, ed. Mary Sanders Pollock and Catherine Rainwater (New York: Palgrave Macmillan, 2005), pp.135–59 (pp.142-43).

130 [Unsigned], 'The Vivisected Dog', 709.

The time came back to him when he had braved
The cold, black river running deep and fast,
And thus his drowning master's life had saved –
But what cared Science for his noble past? (ll.29-40)

Notably, the poet departs from the immediate scene of vivisection to flesh out the dog's backstory before returning to the present moment in the closing stanzas. Thus, like the author of an animal autobiography, he provides a more rounded account of the individual animal including his virtuous deeds and relationship with his master. Tentative language such as 'seemed' and 'methought' suggest that the speaker is actively reconstructing the dog's feelings and memories from movements and expressions. Yet, at other times, it appears that the animal himself 'groaned' and 'murmured' his tale of martyrdom. The description of his lolling tongue and attempts to lick the hand of the speaker are common habits of the species, yet there is a sense of orality and his 'lips' seem anthropomorphic. In the final line, the poem's speaker kneels before the dog and watches a tear roll down his cheek.

Antivivisectionist poets often used the terminology of speech to describe communicative gestures and therefore their fictional animals were presented as simultaneously mute and speaking creatures. In C. E. Rowe's poem, 'Vivisection' (1887) published in the *Zoophilist*, '[d]umb victims' 'plead' with 'strained eyes'.[131] In Lewis Morris's 'To the Tormentors' (published in the *Zoophilist* as 'Song of two Worlds'), the animal kingdom is 'wordless', 'dumb', and 'mute', and yet the speaker's dog makes a 'loud petition' for his master to throw a stick.[132] Christine Ferguson comments that antivivisection writers

> manipulated the linguistic, intellectual and emotional characteristics of vivisectional subjects in order to gain maximum sympathy from their readers, declaiming poignantly on the sufferings of animals that plead [sic] through their eyes, spoke with their howls, and orated by means of their cries.[133]

Pre-verbal utterances and signs signalled the authenticity of the animal's painful experience by mirroring the sincerity of nature as opposed to 'the deceptive drapery of culture and language'.[134]

In 'To My Cat, "Muff"' (1877) which appeared in the *Academy* and a month later in the *Zoophilist*, the Welsh poet John Owen presents body language as more truthful and articulate than linguistic expression.[135] The poem begins,

Thou art not dumb, my Muff,
In those sweet pleading eyes and earnest look
Language there is enough
To fill with living type a goodly book.

[131] C. E. Rowe, 'Vivisection', *Zoophilist*, 7.8 (1 December 1887), 128.
[132] Lewis Morris, 'A Song of Two Worlds', *Zoophilist*, 3.2 (2 February 1883), 83 (l.14).
[133] Ferguson, *The Brutal Tongue*, p.115.
[134] Swinkin, 'The Limits of Sympathy', p.25.
[135] John Owen, 'To My Cat, "Muff"', *Academy*, 784 (14 May 1887), 342.

Wherein who read might see
What tones unheard, and forms of silent speech
Are given that such as thee
The eloquence of dumbness men might teach.

No need of vocal noise
To tell thy varied range of wish and thought:
Thy every glance a voice
Whose sweet inflections trustful love hath taught.

More legible to me
Than human accents, words with vague intent,
Thy tacit speech is free
From the reproach 'to hide thought speech was meant'

Doubtful man's symbols are,
Masked his face, his words with glozing tainted;
But naught is there to mar
The truth serene on thy sweet features painted.[136]

By insisting that bodies are open and legible – that 'mute thought on [Muff's] brow doth clearly show' (l.44) – Owen uses similar techniques as the antivivisection novelists discussed in the previous chapter. In marked contrast to man, feline thoughts and feelings are authentic and incorruptible. Muff's silence is virtuous, whereas man's incessant, oppressive wordiness hampers his access to the universal language that binds Creation together. In the face of man's 'doubtful symbols' (l.17), ingratiating rhetoric, 'ear-splitting din' (l.21), 'uncouth clamour' (l.24), and 'wordy hubbub', Muff sits, dignified, in 'speechful silence' (l.27). This cat occupies the same position as the tortured animals in Thomas Hardy's poem 'Compassion: An Ode to the RSPCA' (1924) who convey their 'hunger, thirst, pangs, prisonment, | In deep dumb gaze more eloquent | Than tongues of widest heed'.[137] Likewise, Muff resembles the eponymous canine of Ouida's animal autobiography, *Puck*, who begins his life-story by declaring that 'animals only do not speak because they are endowed with a discretion far and away over that of blatant, bellowing, gossiping, garrulous Man'.[138] Thus, antivivisectionist writers suggest that 'language, repeatedly identified as the great sign of human superiority, also marks our limitations'.[139]

Although animal silence powerfully signified and body language told all, antivivisection organisations justified their own existence and compelled supporters to take ameliorative action by suggesting that animals were unable to make themselves properly heard. The following

[136] Owen, 'To My Cat, "Muff"' quoted in Clark, 'The Science of Thought', 26-27.
[137] Thomas Hardy, 'Compassion: An Ode. In celebration of the Centenary of the RSPCA', *The Collected Poems of Thomas Hardy* (2 January 1924; Ware: Wordsworth, 1944), pp.764-65.
[138] Ouida, *Puck*, p.1.
[139] Edwards, Ryan and Spencer, 'Introduction', p.6.

exchange between two antivivisectionist characters in Gertrude Colemore's novel *Priests of Progress* (1908) succinctly pinpoints the distinction:

> 'It's absurd to call them dumb in that sense', she answered. 'An animal can show when it's in pain just as well as a human being'.
>
> 'Yes, but it can't put its sufferings into words, it can't appeal to the public, it can't hold meetings or write letters to the papers. It is dumb in the bitterest sense of the word – shut into a world whence the history of its sufferings can never be issued'.[140]

This point was reiterated throughout protest periodicals. *Animals Guardian* declared that animals were 'vocal' and 'eloquent' rather than 'dumb', but although 'they need no interpreter […] their cause is in our hands'.[141] *Animal World* couched its role in terms of Christian stewardship, reflecting that if man really was the only animal capable of language, then this 'monopoly on speech',

> would seem to imply a responsibility resting on him as speaker for all other animals and hence the injunction 'Thou shalt open thy mouths for the dumb'. […] If they possessed the gift of speech, a monthly journal might be superfluous; but this has been withheld and it is incumbent on us […] to become an organ of speech on their behalf.[142]

Poems, such as this one published in the *Anti-Vivisectionist Review*, responded directly to this call:

> I am the voice of the voiceless;
> Through me the dumb shall speak,
> 'Till the deaf world's ear be made to hear
> The cry of the wordless weak.[143]

Because animals of antivivisection poems cannot literally 'testify', 'appeal', 'accuse', or 'charge' their abusers, activists are compelled to become 'witnesses', 'defenders', and 'advocates' on their behalf.

By presenting animals as silenced rather than silent, antivivisection poetry capitalised on the agonies of both expressible and inexpressible suffering. The vivisector's practice of muzzling, gagging, or cutting the animal's vocal chords to avoid loud disturbances provoked a very strong reaction. As one commentator in the *Spectator* wrote, 'it is a very base, barbarous puerile cowardice, to torture God's dumb creatures, and even to cut their throats to *rob them* of the only avenue by which they can relieve and express the infernal cruelties practised on them'.[144] One American physiologist responded to what was regarded among scientists as hysterical reactions to gagging by photographing his young granddaughter wearing one.[145] The point, however, was not that the

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140 Gertrude Colemore, *Priests of Progress* (London: Stanley Paul & Co., 1908), pp.104-05.
141 [Unsigned], 'Our Programme', *Animals Guardian*, 1.1 (October 1890), 1-2 (p.1).
142 [Unsigned], 'Our Object', p.8.
143 Wilcox, 'Poem', p.56.
144 [*Spectator* article], in 'Pamphlets, Vivisection' [From Dr Lauder Brunton's Scrapbook], Wellcome, London, Box 1, SA/RDS/A/3. [emphasis in original].
145 'Dr Keen's granddaughter with gag so denounced by the anti-vivisectionists' [Photograph], Wellcome, London, Box 1, S/PHY/A/1-6, Item GC 53/4.

gag itself hurt, but that the animal should at least be permitted to express its anguish. Swinkin explains that,

> [s]uffering animals are seen as almost bursting with a pain they are powerless to relieve, and this powerlessness only intensifies the perceived pain. In turn the man of feeling who identifies with the suffering animal feels powerless to help it. Thus, powerless suffering identifies with powerless suffering and the perceived agony of the animal reinforces the sensitive soul's sympathetic agony. [...] Pain builds up in the animal because it lacks the power to verbally express its pain outward. […] And so pain accumulates like water behind a dam.[146]

Just as some sufferers claimed that pain was 'beyond words' before describing the experience in detail, F. B. Doveton ends a long antivivisection poem with the mournful lines: 'Condemned a cruel lingering death to die, | Without one pen to paint the pangs they feel'.[147]

By inhabiting the perspective of a fictional animal, antivivisectionist readers ideally gained 'a unique appreciation of what it is to know another's pain' but, as Linda Raphael claims, as with any fictional being, there is an awareness of their alterity.[148] Animal otherness challenged nineteenth-century politics and antivivisectionist writers tried to minimise disruption by ensuring that their fictional animals participate in liberal notions of morality and order. Most crucially, the animals of these texts affirm their happy subordination to human masters in exchange for good treatment.[149] Another equine appeal, titled 'A Few Words From the Dumb' (1878) and published in the *Home Chronicler* is typical in its tone and content: 'Please remember', begs the horse who promises obedience if only his rider would loosen his reins, 'we can always hear your voice, and shall understand what you want us to do much more quickly if you speak to us quietly than if you roar at us, and drag our tender mouths about. We get so puzzled and frightened'.[150] Antivivisectionist writers sometimes promoted anthropomorphism, even speciesism, to create empathy for animals and, according to Cynthia Huff and Joel Haefner, 'animalographies' construct 'an other that looks, talks, and remembers in our own image'.[151] Indeed, speaking animals might be more accurately considered as a creation rather than a revelation of the animal perspective.[152] Nonetheless, the movement encouraged writers and readers to think outside of their own skin and to really inhabit the animal narrator's point of view. One contributor to *Animal World* wrote:

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[146] Swinkin, 'The Limits of Sympathy', p.26.
[147] F. B. Doveton, 'Traps and Torture', *Animal World*, 16.187 (1 April 1885), 56.
[148] Linda Raphael, 'Imagining Another's Pain: Privilege and Limitation in Parent and Child Relations', in *Pain and Emotion in Modern History*, ed. Rob Boddice (New York: Palgrave Macmillan, 2004), pp.220-42 (p.222).
[149] Feuerstein, *The Political Lives of Victorian Animals*, p.8.
[150] [Unsigned], 'A Few Words from the Dumb', *Home Chronicler*, 4.103 (8 June 1878), 362; [Unsigned], 'Only a Dog; or Trim's Autobiography', *Animal World*, 7.80 (1 May 1876), 67-68; [Unsigned], 'The Autobiography of a Fowl', *Animal World* 13.150 (1 March 1882), 38-39.
[151] Cynthia Huff and Joel Haefner, 'The Master's Voice: Animalographies, Life Writing and the Posthuman', *Biography,* 35.1 (2012), 153-69 (p.154).
[152] Edwards, Ryan and Spencer, 'Introduction', *Reading Literary Animals*, p.8.

> If the dog is to be really, and not only ostensibly, the chief centre of interest, the tales must be written 'from the inside' as it were. Everything must be looked upon from the canine point of view; the writer must be able to imagine himself in the dog's place, and to describe his feelings in a manner which can be attained only by careful and loving study of the animal.[153]

Thinking across species lines is always challenging. As Adam Gopnik writes, it requires us to consider 'what it's like to be in the head of a being that has no language' but as creatures of language 'we can't really imagine what it would feel like to be a creature for which thoughts are smells'.[154] When animal autobiographies are written for protectionist purposes (as they often were in the Victorian period) authors had to balance efforts to capture the authentic voice and consciousness of a nonhuman, non-speaking creature, with their ultimate aim: to present the nonhuman experience in sufficiently palatable and familiar terms so as to trigger a sympathetic response in the reader and make their suffering available to amelioration via established channels.

Antivivisection poetry and short stories can be politically and aesthetically radical even while conforming to certain liberal norms. For instance, by engaging with cross-species self-narration and by 'narrativizing the experiences of subjects who communicate via resources that extend beyond human language systems', animal autobiographies raised a range of questions about truth, genre, perception, and the politics and possibilities of narrative representation.[155] By offering direct and sustained access to the nonhuman consciousness, some antivivisection texts presented themselves as literary rivals to self-recording devices. Whereas graphic representations were 'a modern and particularly masculine form of communing and exchanging emotions', stories about or 'by' animals offered different channels through which to access the animal's feelings.[156] Whereas writers and readers of physiology textbooks must look away from or through the animal, animal autobiography requires the very opposite. The oft-named, individual animal, self-recorded in the pages of antivivisection poems and stories is entirely absent from the graphic paper upon which the manometer scribbles. Whereas literary texts provide contexts for and attribute meaning to specific pains, joys, memories, and relationships, the graphic instrument identifies the general physiological manifestations of such experiences, such as fear in the pattern of the heartbeat. By presenting themselves as conduits for animal consciousness and translators of sounds and gestures into words, antivivisectionist writers risked reinscribing human-animal hierarchies. However, as the co-authors of *Reading Literary Animals, Medieval to Modern* (2020) point out, it is important to acknowledge that literary works which seek to foreground the animal 'voice' are, whether

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[153] Von Hacht, 'The Dogs of Fiction', pp.102-04.
[154] Adam Gopnik, 'Dog Story: How Did the Dog Become Our Master', *New Yorker* (8 August 2011), [n.pag].
[155] Herman, 'Animal Autobiography', p.2
[156] Dror, 'The Scientific Image of Emotion', p.394.

successful or not, 'seeking to relinquish the dominion inevitably conferred by the power to name and speak *for*'.[157]

H. G. Wells was also captivated by the tangled relationship between pain and linguistic expression.[158] The following section examines how he exploited the ambivalence towards experimental science characteristic of the 1890s reading public.[159] By fusing the results of contemporary animal experiments with the possibilities presented by evolution, he fleshed out the debate about inter-species pain in different terms.

'The warp and the woof of life': H. G. Wells and the pain problem

H. G. Wells described his *Experiment in Autobiography* (1934) as 'the history and adventures of a brain'.[160] He shunned the 'babbling inconsequences' of the 'staid' and 'formal' genre, and instead examined his developing mind with 'relentless objectivity'.[161] In a chapter titled 'Dissection', he 'eviscerated the dead rabbit of [his] former self' by discussing the painful breakdown of his first marriage.[162] 'I am being my own rabbit', he explained, 'because I find no other specimen so convenient for dissection. Our own lives are all the practical material we have for the scientific study of living; the rest is hearsay'.[163] Decades earlier, during a period of marital turbulence, Wells published a *Textbook of Biology* (1893), part of a preparatory series for University of London science examinations which began with instructions on how to dissect rabbits. In a copy belonging to Amy Catherine Robbins, the pupil with whom he was 'launching on a desperate experiment', Wells sketched the usual laboratory scene in reverse: he once more became the experimental subject, but this time was sliced open by a large hare (see Fig. 23).[164] As well as seeking to amuse his future wife and enliven his 'cram book', Wells's diminutive drawing fleshed out his enduring metaphor of scientific self-examination as experimentation.[165] Both cartoon creatures seem very much alive –

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157 Edwards, Ryan and Spencer, 'Introduction', in *Reading Literary Animals*, p.6 [emphasis in original].
158 Mason Harris, 'Introduction', in H. G. Wells, *The Island of Doctor Moreau*, ed. Mason Harris (Peterborough: Broadview, 2009), pp.13-58 (p.22).
159 Ibid., p.48.
160 H. G. Wells, *Experiment in Autobiography: Discoveries and Conclusions of a Very Ordinary Brain (since 1866),* 2 vols (London: Jonathan Cape, 1969), I, 337.
161 H. Levy, 'The Autobiography of H. G. Wells' [review], *Supplement to "Nature"*, 134.3397 (8 December 1934), 882-84 (p.884).
162 Wells, *Experiment in Autobiography*, II, 424.
163 Ibid., p.417.
164 Ibid., p.430.
165 H. G. Wells, [Letter to Grant Richards 6 November 1895], in Grant Richards, *Memories of a Misspent Youth, 1872-1896* (London: Heinemann, 1932), pp.327-28 (p.327); Wells would scribble hundreds of 'picshuas' for Amy, often accompanied by cockneyisms and private jokes. See Gene K. Rinkel and Margaret E. Rinkel, *The Picshuas of H. G. Wells, a Burlesque Diary* (Chicago: University of Illinois Press, 2006).

the scene is one of vivisection rather than dissection – yet their smiles are placid, and the anguish that usually accompanied such scenes is absent.

Figure 23. [Illustration] in H. G. Wells, *Textbook of Biology* (London: W. B. Clive & Co., University Correspondence College Press, 1893).

Although the *Textbook* does not directly discuss experimental physiology, and examinees did not require experience in this field, Wells had already begun to engage with issues of pain and consciousness that engrossed vivisector and anti-vivisector alike. In a passage concerning reflex action, Wells echoed the line taken by contemporary apologists for vivisection: he argued that many animals lacked a finely developed sense of pain and they reacted rather than consciously responded to noxious stimuli. He concluded that '[p]erhaps, after all, pain is not scattered so needlessly and lavishly throughout the world as the enemies of the vivisectionist would have us believe'.[166] Yet, just three years later, Wells would publish a novel full of excessive pain in which the cries of a vivisected puma sound 'as if all the pain in the world had found a voice'.[167]

Wells was fascinated by the biological laws which governed painful sensation, and critics typically link this to his engagement with evolutionary theory. Robert Philmus and David Hughes, for instance, argue that Wells's approach to 'abiding and recalcitrant ethical questions such as the problem of pain and the relation between moral and natural law' arose from his understanding of

[166] H. G. Wells, *Textbook of Biology*, 2 vols (London: W. B. Clive & Co., University Correspondence College Press, 1893), I, 44.
[167] H. G. Wells, *The Island of Doctor Moreau*, ed. Patrick Parrinder (London: Penguin, 2005), p.38. Subsequent references will be made to this edition and in the main text.

evolution which, they note, 'also provides a model for the tentative solutions he offers'.[168] Investigating the related attention Wells gave to physiological research extends this fruitful line of inquiry . Whilst critics have identified the interplay between evolution and experimental physiology in novels like *The Island of Doctor Moreau* (1896), they tend to argue that Wells uses painful vivisections to symbolise the suffering inherent in natural selection or that his eponymous vivisector personifies the evolutionary process.[169] These readings overlook how the results of contemporary animal experiments underpinned the novelist's understanding of inter-species pain-perception and the 'science' of suffering.

The relentless physical and psychological agony unleashed on Dr Moreau's island fascinated and disturbed readers and critics. One contemporary reviewer warned 'readers of sensitive nerves' that the sensational contents 'might well haunt them only too powerfully'.[170] Despite conceding that the novel was clever, original, and powerful, another refused to recommend the 'unpleasant and painful' work.[171] Although Mason Harris suggests that Wells was 'not entirely aware' of the 'disturbing content' that was emerging during his rapid redrafting, the novelist later asserted that *The Island of Doctor Moreau* was 'consciously grim'.[172] Mindful of the novel's mixed reception, the preface to his omnibus *The Scientific Romances* (1933) advised readers not to begin with that 'rather painful' work.[173] Pain plays a particular role in the inner world of this novel. It is, as David Punter remarks, the text's 'principal problem', and this concept of pain-as-problem proves a useful way into much of Wells's fiction and non-fiction writings.[174] *Dr Moreau*'s 'confused and violent world' both calls for and rejects efforts to detect some central allegory buried within dense layers of religious, philosophical, and scientific symbolism.[175] From Wells's claim that the book reflects a 'vision of the *aimless* torture of creation' to Prendick's challenge to Moreau, '[w]here is your justification for inflicting all this pain?' (73), the reader is invited to make sense of the suffering.[176] However, Wells simultaneously challenges assumptions that signs of pain reliably signify anything at all, let alone that they can be pinned down by language. Moreau's experimental waste – the failed Beast People – seem to endure needless suffering. In fact, Wells's fictional

[168] H. G. Wells, *Early Writings in Science and Science Fiction*, ed. Robert Philmus and David Hughes (Berkley: University of California Press, 1875), p.179.
[169] Andrew Bartlett, *Mad Scientist, Impossible Human: An Essay in Generative Anthropology* (Aurora, Colorado: The Davies Group, 2014), p.143, p.146.
[170] R. H. Hutton, [review of *The Island of Doctor Moreau*], *Spectator*, 76.3536 (11 April 1896) 519-20 (p.520).
[171] [Unsigned], [Review of *The Island of Doctor Moreau*], *Guardian*, 3 June 1896, p.871.
[172] Harris, 'Introduction', p.22; H. G. Wells, 'Preface', *The Scientific Romances of H. G. Wells* (London: Gollancz, 1933), pp.vii-x (p.ix).
[173] Jack Williamson, *H. G. Wells: Critic of Progress* (Baltimore: The Mirage Press, 1973), pp.74-75.
[174] David Punter, *The Literature of Terror: History of Gothic Fictions from 1765 to the Present Day* (London: Longman, 1980), p.251.
[175] Roger Bozzetto, 'Moreau's Tragi-Farcical Island', *Science-Fiction Studies*, 20 (1993), 34-44 (p.34).
[176] Wells, 'Preface', *The Scientific Romances*, p.243 [emphasis in original].

vivisector undermines both our interpretative efforts and the basis of his own research by suggesting that apparent anguish may be 'senseless' in another way also, as in independent from sensation.

Physical suffering bears the 'ideological weight' and 'affective charge' of *The Island of Doctor Moreau*, which led contemporaries on both sides of the controversy to conclude that Wells was sceptical about, if not opposed to, experimental science.[177] His colleague at the *Saturday Review*, the zoologist Peter Chalmers Mitchell, described Dr Moreau as 'a *cliché* from the pages of an anti-vivisection pamphlet'.[178] Indeed, this experimenter's monomaniacal, cruel, criminal, and anti-social tendencies dovetailed with the antivivisection movement's propaganda and also with the presentation of other fictional vivisectors discussed in chapter two. Furthermore, Harris notes that, according to the novel's internal timeline, Moreau and his assistant Montgomery left Britain soon after the passage of the Cruelty to Animals Act (1876) which outlawed precisely the kinds of un-licensed and un-anaesthetized surgeries that Moreau performs.[179] That same year, Hoggan exposed Bernard's experiments in a 'painful letter' (34) to the *Morning Post*. In similar fashion, Moreau is exposed by a laboratory assistant who creates public outrage with the help of a 'prominent editor' and the ennui of the 'silly season' (34). Though he was never exiled like Moreau, Bernard did relocate his laboratory due to interference by police and neighbours.[180] Thus, the novel's chronology suggests that Moreau flees London fearing prosecution and settles on a remote Pacific island to work unhindered by legislation (save for his own Laws). Hutton – the same 'prominent editor' (34) who had publicised Hoggan's controversial letter – welcomed Wells's work as a powerful addition to antivivisection's arsenal.[181] He ensured it was favourably reviewed in the *Spectator*, and wrote eagerly that the 'ghastly' picture it contained,

> may have done more to render vivisection unpopular, and the contempt for animal pain, which enthusiastic physiologists seem to feel, hideous, than all the efforts of the societies which have been organised for that wholesome and beneficent end.[182]

Debates about whether the novel denounced vivisection continue in contemporary academic discourse. Vint suggests that *The Island of Doctor Moreau* echoes the feminist and antivivisectionist positions prevalent at the time of publication and reminds us that scientific cruelty towards animals is not usually about 'individual depravity' but is produced by systems of (male) domination and

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[177] Elizabeth McClure, 'The Ethics of Materiality: Sensation, Pain and Sympathy in Victorian Literature' (unpublished doctoral thesis, University of Maryland, 2007), p.265; Chris Baldick, *In Frankenstein's Shadow: Myth, Monstrosity, and Nineteenth-century Writing* (Oxford: Clarendon Press, 1987).
[178] Peter Chalmers Mitchell, 'Mr Wells's "Dr Moreau"', *Saturday Review*, 11 April 1896, pp.368-69 (p.369).
[179] Harris, 'Introduction', p.46.
[180] J. M. D. Olmstead, *Claude Bernard: Physiologist* (New York: Harper, 1938), pp.34-35.
[181] George Hoggan, 'Vivisection' p.177.
[182] Hutton, [review of *The Island of Doctor Moreau*], p.520.

expropriation.[183] Simon James draws precisely the opposite conclusion, suggesting that, far from criticising scientific ideologies, communities, or practices, *The Island of Doctor Moreau* and *The Invisible Man* illustrate the benefits of state-supervised science by showing the alternative: rogue researchers 'perverting scientific discovery' to gratify their own 'selfish desires'.[184] Indeed, although Dr Moreau does not present scientific research in a reassuring light, Wells did not intend to denounce vivisectors or laboratory work. In fact, quite the opposite: he became openly critical of the antivivisection movement and later described supporters as 'zealous' 'enemies' of science.[185] This perspective developed in tandem with his opposition to the over-idealisation of high aesthetic culture. As James notes, Wells shared T. H. Huxley's concerns that by neglecting the sciences in favour of ancient philosophy, history, and classical languages, British education was failing to serve the needs of present or future society.[186] Whereas his early romances portray dangerous vivisectors like Dr Griffin and Dr Moreau, by the 1930s Wells was railing against British literature which 'caricatured, ridiculed, and misrepresented' their 'greater sister' and those who worked in the service of her truth.[187]

Dr Moreau's experiments do not fall outside the norms of contemporary research because they are painful per-se, but because pain is the object as well as the method. Indeed, the fact that Moreau's experiments are unnecessarily and excessively painful contravenes Wells's own perception of vivisectors as 'manifestly […] not cruel' and vivisection as 'only occasionally and incidentally the infliction of pain'.[188] As the 'Father of French Physiology' famously asserted, the true physiologist sees the animal on his table as 'an organism that conceals from him the problem he is seeking to resolve'.[189] Moreau, however, perceives the animal's tormented body itself as the problem: 'The thing before you', he tells Prendick, 'is no longer an animal, a fellow-creature, but a problem!' (75). Indeed, his ultimate objective is far more ambitious than testing 'the plasticity of living forms' (71). His fantasy is to 'burn out' animal inheritance, form wholly 'rational creatures' (78), and thereby create 'a species tortured into being beyond pain'.[190]

The prevalence of wanton suffering in Wells's novel led Hutton and Mitchell to dismiss Dr Moreau's hypothesis and methodology. The former praised Wells for emphasising the immorality of vivisection rather than dwelling on the 'impossibilities of his subject too long', whilst

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[183] Vint, 'Animals and Animality from the Island of Dr Moreau to the Uplift Universe', p.102.
[184] Simon James, *Maps of Utopia: H. G. Wells Modernity, and the End of Culture* (Oxford: Oxford UP, 2012), p.66.
[185] H. G. Wells, 'The Province of Pain', in *Early Writings in Science and Science Fiction*, ed. Philmus and Hughes, pp.194-99 (p.194).
[186] James, *Maps of Utopia*, p.14; H. G. Wells et al, *The Outline of History: Being a Plain History of Life and Mankind*, 2 vols (London: Newnes, 1919), II, 545.
[187] H. G. Wells, *The Science of Life*, 2 vols (New York: Doubleday, 1931), I, 19.
[188] Wells, 'Anti-Vivisection: Popular Feeling and the Advancement of Science', p.228.
[189] Bernard, *An Introduction to the Study of Experimental Medicine*, p.132.
[190] Bartlett, *Mad Scientist, Impossible Human*, p.135.

the latter distanced Moreau's objectionable approach from 'real' scientific practice.[191] 'It may be', Mitchell wrote, 'that the conscious subjection to pain for a purpose has a desirable mental effect; pain in itself, and above all continuous pain inflicted on a struggling, protesting creature, would produce only madness and death'.[192] Accordingly, Wells's 'insistence upon the terror and pains of the animals, on their screams under the knife, and on Dr Moreau's indifference to "the bath of pain" in which his victims were moulded and recast' was not only 'unworthy of restrained art', but also 'scientific *vraisemblance*'.[193] Lastly, Mitchell pointed out that, hitherto, interspecies skin and bone grafting had failed: 'animal hybrids', he confidently concluded, 'cannot be produced in these fashions'.[194] However, Wells took the scientific element of his fantasies seriously and resented this stigma of ignorance. In both the London and New York editions of the novel, he referenced his essay 'The Limits of Individual Plasticity', initially published in the *Saturday Review* (January 1895), and reasserted that the possibilities of surgery, hypnosis, and chemical treatments were yet unknown. 'Whatever amount of credibility attaches to the detail of this story', he wrote, 'the manufacture of monsters – and perhaps even quasi human monsters – is within the possibilities of vivisection'.[195] He answered Mitchell's 'rash assertion' about inter-species grafting by presenting an article from the *BMJ* reporting that connective tissue had been successfully transplanted from a rabbit to a man.[196] Wells seemed to have chosen the theory behind Dr Moreau's practice carefully, and based it on contemporary, indeed cutting-edge, laboratory experiments.

Wells could have drawn from earlier examples too, such as the work of the eccentric Italian scientist and polymath Paolo Mantegazza. In 1865, the *Popular Science Review* reported that Mantegazza had successfully engrafted tissue between different animals.[197] His *pièce de résistance* was a cockspur which had flourished in a cow's ear for eight years.[198] Wells could have encountered this research through various channels: the *Popular Science Review* enjoyed a large English-speaking readership, and Mantegazza's research was extensively translated, reprinted, and quoted by foreign intellectuals including Charles Darwin, Sigmund Freud, Richard von Kraft-Ebing, Havelock Ellis,

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[191] Hutton, [review of *The Island of Doctor Moreau*], p.520.
[192] Mitchell, 'Mr Wells's "Dr Moreau"', p.369.
[193] Ibid., p.369. Anaesthesia was available from the late 1840s and became routinely administered to experimental animals in those decades in which Dr Moreau's experiments are set (1870s and '80s).
[194] Ibid., p.369.
[195] H. G. Wells, 'The Limits of Individual Plasticity', *Saturday Review*, 79 (19 January 1895), 89-90.
[196] H. G. Wells, [Letter to the Editor], *Saturday Review*, 1 November 1896, p.479.
[197] Paolo Mantegazza, *Degli Innesti Animali e della Produzione Artificiale delle Cellule* (Milan: Amministrazione del Politecnico, 1865); [Unsigned], 'The Results of Engrafting Animal Tissues', *Popular Science Review*, 4, 1865, pp.521-22.
[198] Carla Garbarino and Paolo Mazzarello, 'A strange horn between Paolo Mantegazza and Charles Darwin', *Endeavour*, 37.3 (2013), 184-87.

Max Bartels, and Paul Bartels.[199] The substantial parallels between Mantegazza's work and that undertaken by Wells's fictional vivisector show that, though atypical, Moreau's research is not without precedent.

While most nineteenth-century physiologists carried out tangible studies into the localisation and function of the nerves, Mantegazza tackled pain itself.[200] To elucidate pain's phenomenological laws, he studied 'all the cruelty of its manifestations'.[201] He recreated bodies-in-pain within the laboratory by inflicting different traumas on various animals and observing how their vital organs responded. His gruesome experiments included starving pregnant rats and rabbits, producing inflammation in birds, and amputating frogs.[202] He even invented a gripping device with an iron claw which Cobbe termed 'The Tormentor'.[203] Although Mantegazza welcomed the use of anaesthesia in human surgery, he refused to use chloroform in the laboratory in case it impaired physiological responses and skewed his results. The purpose of all this? Mangegazza believed that, by producing pain in animals, he could improve human health and eventually expunge 'all the torment of physical pain, and silence all the agonies of the heart'.[204] Eventually, however, exposure to animal suffering took its toll, and in his book *Fisiologia del dolore* [*Physiology of Pain*, 1876], Mantegazza admitted that that his results were limited by his unwillingness to repeat cruel experiments.[205] Despite using the remote claw, employing distancing devices such as the camera to capture expressions of pain, and even resorting to performing tests on himself, Mantegazza eventually abandoned his research. He explained that pain was the most difficult emotion to study because it was almost impossible to maintain emotional self-control when observing a person or animal suffer.[206]

Nonetheless, Mantegazza had not given up imagining a world in which science eliminated pain and led to 'everlasting happiness'.[207] In 1879, he published a futuristic science fiction novel titled *L'anno 3000. Sogno* [*The Year 3000, A Dream*]. We follow two lovers, Maria and Paolo, as they

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[199] Ibid., p.186; Nicoletta Pireddu, 'Introduction: Paolo Mantegazza, Fabulator of the Future', *The Year 3000, A Dream* ed. Nicoletta Pireddu, trans. David Jacobson (London: University of Nebraska Press, 2010), pp.1-53 (p.2); Charles Darwin cited the *Popular Science Review* report about Mantegazza's grafting work in *The Variation of Animals and Plants under Domestication* (London: John Murray, 1868), p.369, Note 22.

[200] Stephanie Eichberg, '"No Brain, No Pain?" The Emergence of Animal "Pseudo-Pain" in Nineteenth-Century Research on Reflex Action', in *Who's Talking Now: Multispecies Relations from a Human and Animal's Points of View*, ed. Chiara Blanco and Bel Deering (Oxford: Inter-Disciplinary Press, 2015), pp.121-30 (p.122).

[201] Dolores Moruno, 'Pain as Practice in Paolo Mantegazza's Science of Emotions', *OSIRIS*, 31 (2016), 137-62 (p.140, p.143).

[202] Ibid., p.144.

[203] Susan Hamilton, *Animal Welfare and Anti-Vivisection, 1870-1910: Nineteenth-Century Women's Mission*, 3 vols (Routledge: New York, 2004) I, 38.

[204] Paolo Mantegazza, *Fisiologia del dolore* (Florence: [n.pub], 1880), p.437, trans. Dolores Moruno, 'Pain as Practice', p.141.

[205] Mantegazza, *Fisiologia del dolore,* p.280.

[206] Ibid., p.437; Moruno, 'Pain as Practice', p.142.

[207] Moruno, 'Pain as Practice', p.138.

journey from Rome to Andropolis (the capital of the United Planetary States) to formalise their mating union. By the fourth millennium, widespread pain has been nearly eradicated. Distant recollections of a painful past when 'ingenuity and science' were 'united in supreme efforts to kill men and destroy cities' have been contained within 'museums' of memories.[208] One such relic is the site of a great naval battle, where the couple listen to the 'ancient' nineteenth-century buoys slapping against the water. The monotonous beat 'calls to mind the painful image of all of human history' and sounds like 'a giant, broken heart' (63-64). Paolo describes the melancholic dirge as

> [a] lament rising up from the entire planet, which weeps and asks heaven why there is life and why there is suffering. And Fate, Fate in its deep, dark thud, replies to that planetary lament: 'So it is, so it must be, so it shall be forever'.

Yet, Maria replies,

> No, Paolo, that's not how it is and not how it must be forever! Think of those murderous battleships that no longer exist; think of progress, which never stops. Even this buoy, whose beats seem to be repeating to us the eternal lament of humanity and the cruel answer of Fate, will be silent someday, dissolved by the waters of the sea. (64)

The narrator explains that, following a devastating world war, nineteenth-century biologists and sociologists increased harmony and happiness through technological feats such as the railway and telegraph and by eliminating most diseases by means of medical improvements and stringent reproductive policies. Moreover, a device called the *algophobus* 'numbs all sensitive cells, immediately stopping any pain' by passing an electric current through the body (134). Scientists and statesmen in *The Year 3000* also try to cure psychological and spiritual diseases. Paolo's revolutionary invention, the *psychoscope* (a device which reads the mind), wins the cosmic prize from the Academy of Science because it promises to bring about 'a new era of morality and sincerity among humans', fulfilling Mantegazza's dream 'that moral progress should parallel intellectual progress' (190). The judges declare that the device will cause lying to 'wane everywhere, like all functions and organs that no longer have a necessary or useful purpose' (190). The Secretary continues:

> When we all know that anyone can read into our brain, we will have to overcome contradictions between our thoughts and our actions; we will be as good in our thoughts as we will try to be in our actions. (190)

Mantegazza shares the fantasies of many of his vivisecting colleagues: using mechanical means to lay bare the mind and body, eliminating contradictions between thoughts and actions, and finally matching internal feelings with external manifestations. Although *The Year 3000* presents the union of science and state in an overwhelmingly positive light, Mantegazza was aware of the problems

[208] Paolo Mantegazza, *The Year 3000, A Dream* ed. Nicoletta Pireddu, trans. David Jacobson (London: University of Nebraska Press, 2010), p.61, p.58. Subsequent references will be made to this edition and in the main text.

posed by his scientific utopia; the crowd that had eagerly gathered for the prize-giving ceremony quickly disperse as volunteers are called to test the *psychoscope*. Similarly, Maria is distressed by the city's reproductive policies. She readily accepts that fertile couples must be screened for hereditary diseases and consanguinity before being permitted to procreate. However, she shrinks from post-birth testing which seeks to 'eliminate delinquents before they can do damage to the society' (135) and destroy those 'unfit for life' (143). Again, this process tries to prevent physical and moral suffering for, as the narrator reminds us, 'altruistic pity is acutely painful' (76). The people of the United Planetary States – like Dr Moreau – want 'sympathetic pain', as much as physical pain, to become 'a thing [they] used to suffer from' (75). Although Mantegazza recognises that totalitarian abuses could arise from instruments like the *psychoscope* and the implementation of reproductive policies, he seems convinced that these are worthwhile sacrifices to eliminate pain, that 'cancerous plague that corrodes the happiness of living beings'.[209]

In his novel *A Modern Utopia* (1900) and his essay 'The Problem of the Birth Supply' (1902) Wells also considered how reproductive restrictions or selective breeding (i.e. eugenics) might improve human health and happiness.[210] However, he, like T. H. Huxley, rejected Social Darwinism in favour of 'a practical scientific humanism, a program for humanly directed "artificial evolution"' involving educational reforms which prioritised the sciences.[211] In fact, Huxley had a formative impact on Wells's early scientific education at the Normal School, South Kensington, where the young science student lauded him as 'the acutest observer, the ablest generaliser, the great teacher, the most lucid and valiant of controversialists'.[212] When Huxley retired, Wells was bereft of the interactive model of learning that this biologist, and the laboratory that adjoined his lecture theatre, had provided.[213] He resented other teachers who insisted that students make, rather than use, investigative instruments such as barometers.[214] Having previously excelled, he failed an examination in 1887, lost his scholarship, and left the Normal School: his 'career as a science student was in ruins' and 'the path to research was closed'.[215] Although he was finally awarded a zoology degree in 1890 and taught biology at the University Correspondence College, he resented its 'emasculated syllabus' from which 'controversial matters' such as evolution were excluded.[216]

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[209] Mantegazza, *Fisiologia del dolore*, p.437, trans. Moruno, 'Pain as Practice', p.141.
[210] H. G. Wells, 'The Problem of the Birth Supply', *Mankind in the Making*, 2 vols (Leipzig: Bernard Tauchnitz, 1903), I, 51-98 (p.67).
[211] H. G. Wells, 'Ancient Experiments in Co-operation', in *H. G. Wells: Early Writings in Science and Science Fiction*, ed. Robert M. Philmus and David Hughes (1892; Berkley: University of California Press, 1975), pp.187-93.
[212] Wells, *Experiment in Autobiography*, I, 199.
[213] Ibid., p.201. Wells continued to tout the interactive model of learning that the laboratory provided in his later essays about education. See, 'The Organisation of Higher Education', *Mankind in the Making*, 2 vols (Leipzig: Bernard Tauchnitz, 1903), II, 101-56.
[214] Wells, *Experiment in Autobiography*, I, 212-23.
[215] Ibid., p.233.
[216] Ibid., p.233, p.348.

Instead, Wells explored the implications of cutting-edge science and evolutionary theory through literary avenues. Huxley's ideas continued to inform Wells's own, and the former's understanding of the relationship between species adaption and society informed the suffering on Dr Moreau's island. Huxley rejected Social Darwinism because he denied that evolution and social progress went hand-in-hand. In fact, he argued that humans had inherited an instinctively anti-social nature from their ancient animal ancestors: human cooperation and ethics were produced by artificial forces, working despite rather than in line with nature's vast mechanisms. In a high-profile lecture, 'Evolution and Ethics' (May 1893), he unequivocally stated: '[l]et us understand, once and for all, that the ethical progress of society depends, not on imitating the cosmic process, still less in running away from it, but in combatting it'.[217] Although Wells echoed Huxley's distinction between natural and moral law, as well as his vision of the 'artificial man' (i.e. the product of civilisation and cooperation) and the 'natural man' (i.e. the product of animal evolution), he believed that the perpetual antagonism between the two was rife with pain.[218] In *The Island of Doctor Moreau,* Wells highlighted the worrying psychological implications of Huxley's argument, as well as the pitfalls of the extreme alternative (showcased by Dr Moreau's submission to amoral cosmic laws).[219]

The Beast People's battle against their own instincts exemplifies the agonising warring between 'natural' and 'artificial' man, while also implicitly corroborating Huxley's claim that 'man be separated by no greater structural barrier from the brutes than they are from one another'.[220] Moreau tries to accelerate millions of years of minute adaptations and expunge animal inheritance by dipping his victims in a 'bath of burning pain' (78) for just days or weeks. But the mental suffering which follows most offends Prendick.

> Before they had been beasts, their instincts fitly adapted to their surroundings, and happy as living things may be. Now they stumbled in the shackles of humanity, lived in a fear that never died, fretted by a law they could not understand; their mock-human existence began in an agony, was one long internal struggle, one long dread of Moreau. (95)

Although Wells gives the victims of vivisection a voice, the Beast People are nothing like the dignified and articulate animals that populated antivivisection poetry. They cannot present a coherent message because Moreau's influence upon them has been more than skin-deep; he has created fissures within their minds as well as their bodies. Like the Ape-Man's laughable 'Big

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[217] T. H. Huxley, 'The Struggle for Existence in Human Society', *Nineteenth-century,* 23 (February 1888), 61-80; T. H. Huxley, 'An Apologetic Irenicon', *Fortnightly Review,* 52 (November 1892), 557-71.
[218] H. G. Wells, 'Human Evolution, an Artificial Process', *Fortnightly Review*, 60 (October 1896), 590-95; H. G. Wells, 'Morals and Civilisation', *Fortnightly Review*, 61 (February 1897), 263-68.
[219] Robert M. Philmus, 'Introducing Moreau', in H. G. Wells, *The Island of Doctor Moreau: A Variorum Text*, ed. Robert Philmus (Athens & London: University of Georgia Press, 1993), pp.xi-xlvii.
[220] T. H. Huxley*, Man's Place in Nature*, *Collected Essays, Vol 7* (1863; New York: D. Appleton, 1902), p.147.

Thinks', the Beast People's utterances are mostly meaningless. They 'learn the Law' and 'say the words', but rarely observe the commandments. Their rudimentary linguistic abilities are only ever weaponised against themselves, whereas Moreau, Montgomery, and Prendick can use language to coerce others. In fact, Prendick concludes that an ability to say things one does not think (rather than physical attributes like opposable thumbs) marks humans out: 'it takes a real man', he believes, 'to tell a lie' (120). Ostensibly, the Beast People's linguistic capabilities suggest that Moreau has made 'rational creatures' and, thereby, a complete scientific body (or bodies) of knowledge that would, in the terms set out by the Cruelty to Animals Act (1876), justify vivisection.[221] However, Prendick quickly sees that, as bodies of knowledge or scientific 'texts', the Beast People are utterly incoherent: their language of mimicry is as falsely formed as their makeshift frames.

The violence of vivisection saturates Dr Moreau's Laws. Prohibited activities still appeal to the Beast People's instincts, and illicit desires are ever-ready to creep into the rhythm and tempo of Moreau's creed until – acting like a swift blow or cut – comes an ellipsis, followed by the reluctant, and perhaps repentant refrain, '…it is bad'. 'Some want to follow things that move', the Sayer of the Law slavishly admits as he crouches in the dank darkness, 'to watch and slink and wait and spring, to kill and bite, bite deep and rich, sucking the blood…It is bad […] For everyone the want that is bad'.

> 'Some want to go tearing with teeth and hands into the roots of things, snuffing into the earth…It is bad.'
> 'None escape,' said the men in the door.
> 'Some go clawing trees, some go scratching at the graves of the dead; some go fighting with foreheads or feet or claws; some bite suddenly, none giving occasion; some love uncleanness.'
> 'None escape,' said the Ape Man, scratching his calf.
> 'None escape', said the little pink sloth creature.
> 'Punishment is sharp and sure. Therefore, learn the Law. Say the words'. (60-61)

Moreau forces the Beast People to speak when they long to use their mouths to bite deep into unsuspecting flesh, to tear with their teeth, and to lap up blood with their tongues. The ellipses and hyphens that break up their utterances, the circular call and response format of the Law, and the strange incantation and dancing that accompanies recitals, re-create the psychological damage of Dr Moreau's drug trials, hypnosis experiments, and post-operative conditioning. As Timothy Christensen notes, the legislative refrain always returns to violent means of enforcement.[222] Whereas the pause before '…it is bad' suggests that the Beast People are unconvinced by the

[221] Kimberley Jackson, 'Vivisected Language in H. G. Wells's *The Island of Doctor Moreau*', *Wellsian*, 29 (2006), 19-34 (p.20).
[222] Timothy Christensen, 'The "Bestial Mark" of Race in "The Island of Dr Moreau"', *Criticism,* 46.4 (2004), 575-95 (p.582).

ethical imperative behind their creed, the fate they will face for infringements is articulated with choric certainty:

> *His* is the House of Pain
> *His* is the Hand that makes.
> *His* is the Hand that wounds.
> *His* is the Hand that heals. (59)[223]

Variations of making, wounding, and healing appear throughout the Bible, and are used by Wells to confirm the vivisector's deific status and the Beast People's utter surrender to his capricious whims.[224] The regular line length, capitalisation, italicisation, and alliteration of 'His', 'Hand', and 'House', create a pattern of emphasis that seems to convey the unhurried authority of a penal beating, echoing through the forest like the blows of sanctioned violence they describe. Though this violence appears to stray from the realm of science into plain savagery, it is never far from the instruments and actions of vivisection. As the Beast People know well, 'punishment is *sharp'* (61), and Kimberley Jackson points out that even non-bladed weapons act like surgical knives.[225] For instance, the crack of the revolver is described as 'cutting like a knife across the confusion' (127). Bodies move like knives too, looking and turning 'sharply'. Through these metaphors, Wells further implicates literary language in the action of animal experimentation.

Along with mimicking the cutting action of a typical vivisection, Wells uses figurative language to further Moreau's particular programme of experiments. Jackson's work is particularly relevant here, as she explores how Wells employs personification, metonymy, catachresis, and synecdoche to violently intertwine literary and scientific vivisections. Literary devices lacerate flesh, recreate the confusion of drugging, separate parts from the whole (or particular functions from their respective parts), graft from one organism to another, and damage the senses.[226] For example, although Moreau never lays a finger on the shipwrecked protagonist, Prendick frequently describes sensations of being cut, stabbed, or slashed, and these moments are coupled with images of bodily dissolution or dismemberment. Breaking into a run from the Leopard-Man, Prendick's nerves become 'unstrung', and after he 'completely lost his head with fear' (48), he feels 'pain like a knife at [his] side' (50). Likewise, when escaping from Moreau, whom he suspects of human vivisection, he hurls himself through 'thorny' and 'spiny' vegetation which 'stabbed like penknives' (59). He then plunges into a 'boiling stream' (71), an image that mirrors Moreau's 'bath of pain', but also 'cut like a smoking gash' (73). Prendick's impressions are blurred, marred with splashes of colour

223 [emphasis in original].
224 Job 5. 18; Deuteronomy 32. 39; Samuel 2. 6; Isaiah 30. 26; Hosea 6. 1.
225 Jackson, 'Vivisected Language', p.23 [emphasis added].
226 Ibid., p.20.

and light, and he often hears beating, whispering, and humming noises.[227] This could be interpreted as a symptom of his mental stress, but Jackson argues that the protagonist's sense nerves have been damaged.[228] Prendick's painless haziness mirrors the effects of damage to the optic and auditory nerves. As Moreau describes it, 'you merely see flashes of light', and hear a 'humming' in the ears (84). Furthermore, Prendick's psychological suffering mirrors Moreau's experiments. His fragile psyche is prey to external influences that are grafted onto his imagination against his will. His thoughts take on a peculiar physicality, and his brain functions as an unruly limb, or even an independent body.[229] His mind goes 'wandering' (3), his imagination 'run[s] away' with him (137), and, even when he returns to London, the strange memories from the island 'chase each other' through his mind (36). Soon, 'the most horrible questionings came rushing into my mind', he confesses, '[t]hey began leaping into the air, first one and then the other, whooping and grunting' (45). Prendick's shadowy memories, illusions, and vaguest perceptions have grown bodies and come after him. This blurring between psychological and physical reactions recurs throughout the novel. Things are transformed into bodies, ideas into things, and vice versa. Here, the Beast People's movements and sounds have been reformulated into 'horrible questionings' without the 'ready answers' that, according to Wells, the physiological laboratory supplied.

Moreau's programme of mutilation, amputation, and grafting cannot be confined to the compound or to the Beast People. Nothing on the island, nor the island itself, is immune. Nature's own body parts are scattered: the ocean, cape, bank, and creek, are described as disconnected legs, shoulders, and lips (8, 49, 59, 102). Whilst the Beast People hide out in fetid caves, the half-hewn Puma Woman crashes through the forests, leaving foliage as bloodied, broken, and strung with bandages as herself, until the whole island 'is one big laboratory for vivisection'.[230] Even the novel, as a body of text, cannot emerge unscathed from its own 'operation'. Like the Beast People, it too is a hybrid creature, consisting of a '"patchwork" of different discourses, one grafted upon another'.[231] Scholars have frequently observed that, as well as stitching together a range of literary genres, Wells excised, edited, and reinserted his article 'The Limits of Individual Plasticity' to form chapter fourteen: 'Dr Moreau Explains'. Thus, metaphorical, as well as actual, bodies were subjected to 'operations' which mimic vivisection.

Allusions to experimental science also appear in relation to pain in Wells's other works. *The Wonderful Visit* (1895), a short novel published just prior to *The Island of Doctor Moreau*, is a

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227 Ibid., p.22.
228 Ibid.
229 Ibid., p.25.
230 Ibid., pp.23-24.
231 Ibid., p.24.

bizarre satire of middle-class society in the Home Counties.[232] We see through the eyes of a congenial and naïve Angel whose arrival on Earth is brought about by a local Vicar, who accidently shoots him from the sky after mistaking him for a large bird. Having recovered from the shock of a seraphic encounter, the repentant Rector bandages his victim's broken wing:

> 'I do not like this new sensation,' said the Angel.
> 'The Pain when I feel your bone?'
> 'The *what*?' said the Angel.
> 'The Pain.'
> 'Pain' – you call it. No, I certainly don't like the Pain. Do you have much of this Pain in the Land of Dreams?'
> 'A fair share,' said the Vicar. 'Is it new to you?'
> 'Quite,' said the Angel. 'I don't like it'. (19-20)[233]

These kinds of exchanges are commonplace in the novel. When the Vicar explains the meaning behind the vacuous feeling in the Angel's stomach, he responds:

> 'Hungry!' […] 'What's that?'
> 'Don't you eat?'
> 'Eat! The word's quite new to me'.
> 'Put food into your mouth, you know. One has to here. You will soon learn. If you don't, you get thin and miserable, and suffer a great deal – *pain*, you know – and finally you die'
> 'Die!' said the Angel. 'That's another strange word'. (31-32)[234]

The 'question and answer' format, as well as the capitalisation and repetition of each new word, emphasises the Angel's learning process and accentuates the strangeness of using words to describe sensations. Like the Beast People, the Angel tends to parrot back unknown words or phrases which relate to new sensations or material experiences. Though he grasps 'Hunger' and 'Eat', he remains fascinated and terrified of 'Pain'. 'A new sort' of it lurks behind every corner: pain is in the 'pink flower that sprang out of the box' (156) (flames), and beautiful plants (stinging nettles, briars, and thistles). Before long, this 'stranger to pain' (45) breathes in 'the poisonous air of this Struggle of Existence' (235). By the week's end he has learned 'the lessons of pain' and therefore 'travelled so far on the road to humanity' (235). Along the way, he is drawn into various philosophical and scientific conversations about consciousness and suffering.

Whether dabbling in humour or horror, Wells participated in contemporary debates about experimental science. As in *The Island of Doctor Moreau*, 'vivisections' are often metaphorical in *The Wonderful Visit*. When Farmer Gotch regains consciousness after a violent fight with the Angel, he is not concerned with his injuries, but that his wife will 'vivisect [him] with questions' (239-40). Likewise, after being shunned by villagers, and stoned by schoolboys, the Angel meets a

[232] H. G. Wells, *The Wonderful Visit* (London: J. M. Dent & Co., 1895). Subsequent references will be made to this edition and in the main text.
[233] [emphasis in original].
[234] [emphasis in original].

'philosophical Tramp' who explains that the entire community 'is full of pithed human beings who've 'ad their brains cut out and chunks of rotten touchwood put in the place of it' (142). Seeing the Angel's bemusement, the vagrant explains: '[i]t's a thing these here vivisectionists do. They takes a frog and they cuts out his brains and they shoves a bit of pith in the place of 'em' (143).

> 'Is it a painful operation?' asked the Angel.
> 'In parts. Though it ain't the heads gets hurt. And it lasts a long time. They take 'em young into that school, and they says to them, "come in 'ere and we'll improve your minds," they says, and in the little kiddies go as good as gold. And they begins shovin' it into them. Bit by bit and 'ard and dry, shovin' out the nice juicy brains. Dates and lists and things. Out they comes, no brains in their 'eads, and wound up nice and tight, ready to touch their 'ats to anyone who looks at them. They take a positive pride in 'ard work for its own sake. Arter they bin pithed. See that chap ploughin'?'
> 'Yes,' said the Angel; 'is *he* pithed?'
> 'Rather. Else he'd be paddin' the hoof this pleasant weather – like me and the blessed Apostles.'
> 'I begin to understand,' said the Angel rather dubiously.
> 'I knew you would,' said the philosophical Tramp. (144-45)[235]

Like the decerebrated frogs commonly used for reflex experiments, the villagers are unquestioning creatures, unaware that their actions are produced from 'the outside'. The description of the children 'wound up nice and tight' suggests that their strained nerves are being played upon until twitches are produced and they will 'touch their hats to anyone'. Wells engages in some humorous wordplay as well as gesturing to the problems of pain and consciousness that preoccupied the 1875 Commission. Pithing was commonly performed to remove consciousness (and therefore, vivisectors claimed, susceptibility to pain) while retaining motor function. However, as a noun, 'pith' can refer to the soft interior tissue of an organ or animal structure, as well as the essence or heart of an idea.[236] Wells's Tramp plays with these definitions. The children's 'juicy brains' are metaphorically removed by the insertion of information – 'dates and lists and things' – and this in turn expunges the 'essence' of the child's individuality and free will. Units of language have multiple meanings, rather like how automatic actions lie open to various interpretations. This passage also reaffirms the theme of words or things being both the object and the subject of vivisection. Because the Angel absorbs information literally, the Tramp's pithing allegory eludes his understanding. His companion's quasi-Socratic mode and gentle raillery causes them to converse at cross-purposes and allows Wells to approach the question of pain from different angles and to exploit its 'charm of uncertainty'.[237] The Tramp sidesteps questions of pseudo-pain raised by reflex experiments on pithed frogs. To the Angel's inquiry, '[i]s it painful?', the Tramp responds cryptically: 'in parts, though it 'aint the heads gets hurt' (144).

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[235] [emphasis in original].
[236] *OED,* sense 1.
[237] Wells, 'The Province of Pain', p.194.

In fact, the Angel's questions about pain rarely receive a straightforward response. Returning to the vicarage, he expresses astonishment about the zest with which 'you Human Beings' inflict pain:

> 'Everyone seems anxious – willing at any rate – to give this Pain. Everyone seems busy giving pain –'
> 'Or avoiding it,' said the Vicar, pushing his dinner away before him. 'Yes – of course. It's fighting everywhere. The whole living world is a battle-field – the whole world. We are driven by Pain. Here. How it lies on the surface! The Angel sees it in a day!'
> 'But why does everyone – everything – want to give pain?' asked the Angel.
> 'Is it not so in the Angelic Land?' said the Vicar.
> 'No,' said the Angel. 'Why is it so here?' (158)

The Vicar replies that this 'deep question' is 'almost beyond one's power of discussion' (158), but then launches into theological musings about the essential nature of pain. On earth it is 'the warp and the woof of life', only exceeded by the possibilities of eternal suffering (158). Although the Angel's goodness gives him a glimpse into a better world, the Vicar finds it 'almost impossible […] to imagine…a world without pain…' especially because Earth is 'the very reverse of an Angelic world' (158). His 'impromptu dissertation' (158) turns back to pain's 'Necessity' (i.e., in food production), before he is interrupted. 'Bye-the-bye', said the Angel, suddenly, 'Have you been pithed? Like the common people?' (159).

The spectre of human vivisection looms large in the first part of *The Island of Doctor Moreau*, and the novel also alludes to reflex experiments albeit more obliquely than *The Wonderful Visit.* In chapters eight and nine – 'The Crying of the Man' and 'The Crying of the Puma' – Wells undermines an instinctive approach to interpreting manifestations of pain. Having recently arrived on the island along with the animal cargo destined for the laboratory, Prendick hears Moreau work on his 'new stuff' (35). Irritated by intermittent cries that escape from the laboratory, the protagonist attempts to distract himself by reading and plugging his ears, but finally resorts to leaving the compound. The following day, the sobbing seems distinctly human, and his reaction is instantaneous and entirely different: '[i]t was no brute this time. It was a human being in torment! And as I realised this I rose, and in three steps had crossed the room, seized the handle of the door into the yard, and flung it open' (50). The puma's moans may sound like 'all the pain in the world' (38), but they fail to prompt action. On the other hand, the 'woman's' sobs signal the distress of a subject, or as David Biro explains, 'injury to a *person* rather than a body'.[238] Prendick later discovers, however, that his ears deceived him since the second series of cries only appeared more human (and therefore more suggestive of emotional and mental torture) because Moreau had performed

[238] David Biro, 'Psychological Pain: Metaphor or Reality', in *Pain and Emotion in Modern History*, ed. Rob Boddice (New York: Palgrave Macmillan, 2014), pp.53-65 (p.60). [emphasis in original].

surgery upon the puma's vocal chords. A small alteration to the animal's physiology had resulted in an aural pain signal full of false meaning. As the Beast People's language capacity reveals, sounding like a man does not make you one. Prendick's decisive strides may have been prompted by unconscious will rather than noble sentiments. The fact that the 'singularly irritating' (38) sounds set his 'nerves quivering' (38) suggests that his response may have been sympathetic in a double sense, i.e. reflexive and automatic. After all, Dr Moreau contends that his uninvited guest often intuitively 'thinks' how an animal 'feels' (73). As Prendick jumps to his erroneous conclusion, his body also springs into action.

Wells's technique of using questions, explanations, and discussions to 'dissect' pain re-emerges in the science fiction novel *In the Days of the Comet* (1906) and the short story 'Under the Knife' (1911). Both works explore the concept of pain without sensation by considering the effects of anaesthesia. In the former, painful sensation is diminished when a comet brushes the Earth's atmosphere, producing a powerful healing gas.[239] This chemical change in the old *azote* ushers in a utopia: '[t]he great Change has come for evermore, happiness and beauty are our atmosphere, there is peace on earth and good will to all men' (17). Pain is no longer inextricably woven into the very fabric of material existence or, as Wells repeats here, 'the warp and the woof of life' (282). The spectre of world war is banished, and the protagonist Willie Leadford is relieved of his murderous rage about being jilted. Although the effects of the new atmosphere exceed the remit of pain-relieving drugs, anaesthetic gases were then a relatively recent phenomenon and still believed, by some, to be 'a guarantee of human perfectibility'.[240] Awakening to this 'washed' and 'dignified' (183) world in which, much like Mantgazza's *Year 3000*, 'hatred [is] more difficult, and war impossible' (84), Willie encounters a politician lying injured in the road. Unexpectedly, Lord Melmount cheerily remarks that his pain is 'more interesting than disagreeable':

> 'You are in Pain?'
>
> 'My ankle is! It's either broken or badly sprained – I think sprained; it's very painful to move, but personally I'm not in pain. That sort of general sickness that comes with local injury – not a trace of it!' (191)

The new atmosphere acts like nitrous oxide ('laughing gas'), softening pain's edges without making the body insensate. Although his discomfort has not been eliminated, Melmount is not, to borrow Bourke's phrase, truly a 'person-in-pain' because he can perceive his experience of harm remotely as an interesting subject matter.[241] As in *The Wonderful Visit,* 'Pain' is notably capitalised and it operates in the new world as a distinct and independent phenomenon.

[239] H. G. Wells, *In the Days of the Comet* (London: Macmillan, 1906). Subsequent references will be made to this edition and in the main text.
[240] Ablow, *Victorian Pain*, p.2; [Unsigned], 'The Function of Physical Pain: Anaesthetic', p.198.
[241] Bourke, *The Story of Pain*, p.5.

Melmount's comment that he *personally* was not in pain is reiterated by the protagonist in 'Under the Knife' who also finds his pain 'interesting' once disconnected from it.[242] On the morning of his operation, the unnamed patient-narrator feels estranged from 'the meshes of matter and sense' (164) despite the 'glow of pain' in his side seeming 'more massive' (164). He explains: 'I knew it was pain, and yet, if you can understand, I did not find it very painful' (164). When the surgeons Haddon and Mowbray administer chloroform, he briefly loses consciousness and then 'awakes' in time to see them make an incision exposing his liver. Unperturbed, he finds it 'quite interesting' to see himself 'cut like cheese, without a pang, without even a qualm', 'without any emotional tint at all' (166, 167). However, when Haddon slices too deeply, causing substantial blood loss, the patient is 'suddenly cut adrift from matter' (171). In a strange out-of-body experience, his consciousness is released from his body and sucked swiftly into space. He whirls past planets and galaxies until he sees a cloud unfold into 'a huge shadowy Hand, upon which the whole Universe of Matter lay like an unconsidered speck of dust' (177). Above this hand which clasps a rod lies 'a circle of dim phosphorescence, a ghostly sphere' from whence a booming voice proclaims: '[t]here will be no more pain' (178). The patient immediately feels 'an almost intolerable gladness and radiance' and then, in an instant, he is back in his room. The circle into which the shadowy 'Hand' vanished is the clock face striking twelve, and the rod is his bed-rail behind which the surgeons are cleaning their instruments. Only 'a subdued feeling that could scarce be spoken of as pain' remains in his side, and the melancholy of sickness is lifted (178). His near-death experience, and the symbolism of divine power connoted by the shadowy hand and the rod, undoubtedly have religious overtones. Yet all the strange extra-terrestrial phenomena he had encountered may have been merely mundane objects, just as the booming voice that grandly declares an end to suffering might have belonged to one of the surgeons. The story ends ambiguously. Can scientists like Dr Moreau, or surgeons like Haddon and Mowbray, use material means such as chloroform or operations to banish pain forever, or can pain-free existences only occur in utopias and quasi-religious realms like the Angelic Lands?

In these works, Wells used pithing, reflex action, and anaesthesia to examine pain divorced from the organism upon which it acted. Likewise, in his essay 'The Province of Pain', published in *Science and Art* in 1894, he separated pain from its usual partners, summarising that,

> [p]ain independent of sensation is possible, but so is sensation without pain. Pain without thought is possible, but so is thought without pain. Pain, then, though a prominent feature of our mental scheme, is not a necessary companion either to any living thing or nervous thread, on the one hand, or to any mental existence, on the other.[243]

[242] H. G. Wells, 'Under the Knife', *The Country of the Blind and Other Stories* (London: Thomas Nelson & Sons, 1911): 161-78. Subsequent references will be made to this edition and in the main text.
[243] Wells, 'The Province of Pain', p.195.

Dr Moreau does not administer pain-relieving drugs and cannot pith his animals since he requires a live end-product. This novel, however, in which suffering appears to be one of few indubitable constants, contains Wells's most sustained and complex discussion about pain being superfluous and separate from sensation. He used evolutionary theory to explore the implications of physiological research and to undermine a straightforward relationship between signs, experiences, and interpretations of pain. Chapter fourteen, 'Dr Moreau Explains', contains the same distinct question and answer dialogue and theoretical tone which signal similar discussions in *The Wonderful Visit* and *In the Days of the Comet*. As previously mentioned, Moreau's 'physiological lecture' (70) is a reworked version of Wells's essay 'The Limits of Individual Plasticity', but also borrows from 'The Province of Pain'. Although Moreau's philosophy often seems like the ravings of a mad scientist, Wells used his vivisector to extend and sensationalise his own views on pain's nature, purpose, and future.

In 'The Province of Pain' and *The Island of Doctor Moreau*, Wells based his assertions about pain on both evolutionary theory and animal experiments. For example, the essay alluded to Friedrich Goltz's controversial canine hemispherectomy experiments (c.1881) to undermine the correlation between tissue damage and pain. Wells leaves Goltz unnamed, but describes his unique method of washing or cutting out parts of the brain to illustrate his point that some severe operations give an 'unpleasant thrill to the imagination' but are in fact 'absolutely painless'.[244] Wells adds that the body's surface, as the first organ to interact with noxious stimuli, required more 'painful possibilities' than the internal organs whose pains are 'less acute and less definitely seated'.[245] Indeed, recent physiological experiments had shown that some areas of skin responded more intensely to cutaneous sensations such as touch, heat, cold, and pain.[246] The Austrian-German physiologist Maximilian Von Frey even invented an aesthesiometer to map a 'topography of "pain points"' across the body's surface.[247] Likewise, Moreau explains that, although observers recoil from the medical student's trick of thrusting pins into his thigh, this procedure is, in fact, pain-free. To convince Prendick, he nonchalantly plunges a knife into his own leg without so much as flinching, as he explains that 'all living flesh is not painful, nor is all nerve' (74).[248] Live animal research into pain-specific receptors form the basis for Wells's assertion in 'The Province of Pain' that nerves relating to smell cannot convey painful sensation. In *The Island of Doctor Moreau*, this time referencing the optic and auditory nerves (74) as evidence, Wells makes the same point.[249]

[244] Ibid., pp.195-96.
[245] Ibid.
[246] Rey, *The History of Pain*, p.216.
[247] Ibid., p.217.
[248] Occasionally, vivisectors experimented on themselves. See [Unsigned], 'Vivisection and Medicine', p.332.
[249] 'The Province of Pain', p.194.

The ties between harm, painful sensation, and expressions of suffering were further weakened, if not severed, when sensations experienced by animals were considered.

Animal experiments indicated which parts of the body were sensitive to pain, and evolutionary theory supplied a broader answer as to why. In his early *Textbook*, Wells claimed that pain was not scattered 'needlessly' or 'lavishly' throughout the body, and in 'The Province of Pain' he reasserted that 'needless pain does not exist'.[250] Pain is our 'body's warning system' and 'true guardian angel', protecting us from injury.[251] The unpleasant sensation of a fracture, for instance, warns against further stressing the affected limb. Dr Moreau echoes Wells when he describes pain as an 'intrinsic medical advisor' (73). Both author and character claimed that the severity of pain felt depended upon how advanced the organism was. Thus, Wells forwarded the familiar notion of a scale of sensitivity: 'a series among living things with respect to pain'.[252] At the bottom were the simplest and least intelligent life forms like crustaceans, and near the top were the higher mammals followed by man at the uppermost. He theorised that animals on the lower end of the scale were more susceptible to reflex action whereas higher mammals 'look before they act'. This process of looking before acting, or responding rather than reacting, also affected the duration and intensity of pain. For example, Wells suggested that less-intelligent (lower) animals might feel the 'actual immediate smart of pain' acutely, although this would correspond with a decrease in duration until finally, amongst the simplest organisms, 'the impression that would be pain is a momentary shock, translated into action before it is felt'. This all but immediate translation of perception to impulse allowed certain creatures to 'shunt off' energy 'that would register as pain in man'.[253] Counterintuitively, therefore, signs of pain, especially sudden movement, could in fact signal an absence of pain or even a constitutional inability to suffer.

This same reasoning pertaining to pain's biological basis and evolutionary purpose informed Wells's belief that the highest species might, eventually, no longer require pain at all. Although man retained remnants of the lower animal's self-soothing ability to 'shunt off' unpleasant sensation (e.g. in the concept of 'a good cry'), Wells argued that more advanced, intelligent animals with better memory recall, could predict pain. Consequently, they required 'less severity' from the hands of that 'great teacher' and 'wise economy', Nature.[254] In 'The Province of Pain', Wells asked:

[250] Ibid., pp.197-98.
[251] Ibid., p.197.
[252] Ibid., p.198.
[253] Ibid.
[254] Ibid.

> May he [man] not so grow morally and intellectually as to get at last beyond the need of corporal chastisement, and foresight take the place of pain, as science ousts instinct? First, he may avoid pain, and then the alarm-bell may rust away from disuse.
>
> […]
>
> The lower animals, we may reasonably hold, do not feel pain because they have no intelligence to utilise the warning; the coming man will not feel pain, because the warning will not be needed.[255]

Rather than demonstrate erroneous logic, as critics like Elizabeth McClure have claimed, Dr Moreau's assertion that crustaceans and civilised man will share the essential marker of species progress (immunity to pain) is consistent with the author's own reasoning that the former have 'no intelligence to utilise the warning' (74-75), and the latter will be spared by predictive powers.[256] Dr Moreau acts as a spokesperson for Wells's theory, telling Prendick:

> Then with men, the more intelligent they become the more intelligently they will see after their own welfare, and the less they will need the goad to keep them out of danger. I never yet heard of a useless thing that was not ground out of existence by evolution sooner or later. Did you? And pain gets needless. (74-75)

Whereas Wells interpreted Huxley's artificial civilising process as an inexorable move towards mental suffering, his character Dr Moreau is a Social Darwinist who advocates utter surrender to biological forces to eventually surpass suffering.[257] Pain, the fictional vivisector suggests, is a temporary stage of species progress, rather than the price of higher consciousness.

Moreau's criticism of Prendick's susceptibility to sympathetic suffering appears to combat antivivisectionist rhetoric. Anyone 'with a mind truly open to what science has to teach', the vivisector remarks, would see pain as 'such a little thing' (73). By insisting that man's pain is a mark of residual animality, he can also counter Prendick's ethical challenge with his own moral slur:

> It is just this question of pain that parts us. So long as visible or audible pain turns you sick, so long as your own pains drive you, so long as pain underlies your propositions about sin, so long, I tell you, you are an animal, thinking a little less obscurely what an animal feels. (73)

Here, Dr Moreau claims that sympathetic pain for the suffering of others was a sign of degradation rather than evidence of advanced humanity. He asserts that Prendick's susceptibility to signs of pain demonstrate an overreliance upon baser, bodily instincts and is 'the mark of the beast' (74). Hereby, the vivisector undermines the antivivisection movement's emotional economy which required supporters to not only 'think' how an animal 'feels' but also, to some extent, *feel* like an animal. In other words, the humane activist or reader is 'he or she who can most strongly feel the pain of the animal on the operating table, most powerfully respond to the force of that "bloody

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[255] Ibid., 197.
[256] McClure, 'The Ethics of Materiality', p.260.
[257] James, *Maps of Utopia*, p.68.

spectacle'", one who 'feels in her own body the shocks and pains of the helpless animal subject'.[258] Moreau also rehearses the usual justifications physiologists gave for suspending their feelings. His motivations are coldly cerebral; he is driven only by an 'intellectual passion' and the 'strange, colourless delight of these intellectual desires' (75). However, as Boddice notes, Moreau shuts off his sympathetic response without pursuing the moral purposes of emotional control that scientists usually articulated.[259] He also has no intention of eventually switching these feelings back 'on'.

Although he readily forwarded the scale of sensitivity to explain why not all creatures felt similarly, Wells ultimately admitted that it was impossible to bridge animal alterity and determine whether pain was felt or not, since

> [no] scientific observer has, as yet, crept into the animal mind; no reminiscences of metempsychosis come to the aid of the humane. We can only reason that there is evidence of pain from analogy, a method of proof too apt to display a wayward fancy to be a sure guide. This alone, however, does not prevent us discussing the question – rather the reverse, for there is, at least, the charm of uncertainty about any inquiries how animals may feel pain. It is speculation almost at its purest.[260]

Wells's assertion that evidence of pain is always speculative and reliant upon shaky correspondences is re-enforced by discussions of pain throughout his works of fiction, which rely upon figurative and analogic devices such as comparisons, similes, metaphors, allegories, idioms, and exemplification. His reference to the transmigration of souls seems relevant to all texts which seek to access and represent animal interiority. However, his comment that 'no reminiscences of metempsychosis come to the aid of the humane' might be a direct remark upon the methods and aims of antivivisection writings. Activist poems written 'from the inside' purported to directly voice the thoughts and feelings of the animal and encouraged the sympathetic reader to imaginatively transpose themselves in the body of the vivisector's victim and even to 'creep into their mind'.

In his autobiography, Wells presented the laboratory as a space which eliminates the distance between reality and representation. He recounted spending 'the most educational year of [his] life' in the laboratory at the Normal School, surrounded by 'microscopes, reagents, dissecting dishes or dissected animals', eagerly augmenting book-learning with hands-on practice:

> I had got right through to contact with all that I had been just hearing about. Here were microscopes, dissections, models, diagrams close to the objects they elucidated, specimens, museums, ready answers to questions, explanations, discussions.[261]

When 'close to the objects they illuminated', the familiar models and diagrams are brought to life.[262] Wells can get 'right through to contact' with the 'real things' that he had only encountered in

[258] Ibid., p.106.
[259] Boddice, *The Science of Sympathy*, p.61.
[260] Wells, 'The Province of Pain', p.194.
[261] Wells, *Experiment in Autobiography*, V1, 201, 199.
[262] Ibid., p.200.

representative formats, i.e. via verbal explanations ('just been hearing about') or visual representations ('the printed sciences within book covers').[263] This passage also recalls Wells's metaphor of himself as a 'convenient specimen' for dissection; by approaching his own life, a subject matter that he was acutely familiar with, as he would a rabbit's body, he hoped to reduce the gap between unreliable 'hearsay' and a more objective 'scientific study of living'.[264] Suffering, then, is singled out as a phenomenon that uniquely disarmed the methods of investigative science and also evaded literary or linguistic representation; the incessant questions and circular discussions about pain within Wells's fiction works rarely receive 'ready answers'.

Dr Moreau is haunted by the impure relationship between biology and language. His dream of making a wholly rational creature evolved beyond pain is part of his fantasy of closing the gap between the tropic and the literal and therefore making experience and expression one and the same. As Jackson describes it, by forcing all creatures to conform to an ideal, rational human form, Dr Moreau hopes to create 'a "body" of knowledge perfectly coincident with its "matter"' and thereby nullify 'the "why" question haunting science'.[265] She argues that

> it is the very 'plasticity' in the relation between the literal and the figurative that Moreau wishes to 'push to its limits', to create a body(text) that exists purely, untainted by the unclean relationship between literal and figurative, between the practical, experimental pursuits of science, and the moral-allegorical projection of ends, and thus to erase the initial schism, the bodily-linguistic fissure, that makes such an artificial logic possible.[266]

However, language is required to create this coherent body of knowledge, since 'it is linguistic articulation which allows for the passage from "matter for thought" to "logic"'.[267] Moreau is forced to operate through and upon the linguistic medium, and when he lets language into his laboratory to be both an instrument for and subject to vivisection, it becomes even more dispersed: 'once clear-cut and exact', it softens, loses shape and import, and eventually becomes 'mere lumps of sound again' (144).[268]

Contemporary physiologists sought to expel ordinary language from the laboratory and replace it with the wordless expressions of graphic registration and recording technologies.[269] However, linguistic expression proved immensely difficult to extricate from scientific discussions about inter-species suffering. In fact, it often represented precisely the problem of pain and other minds that troubled and fascinated vivisectors and their opponents. For example, analogies and metaphors called attention to the process of transferring meaning from, or creating meaning

263 Ibid.
264 Ibid., VII, 417.
265 Jackson, 'Vivisected Language', p.26.
266 Ibid., pp.26-27.
267 Ibid., p.21.
268 Ibid.
269 Dror, 'The Scientific Image of Emotion', pp.367-68.

between, one subject and another, and also highlighted the caesura between painful experience and expression. Ultimately, neither literary nor physiological devices could establish a direct relationship between animal interiors and exteriors, emotions and expressions, 'thing' and 'sign'.

When Damer, *Toxin*'s vivisector, scrutinises the famous leaping horses atop St Marks Basilica, he remarks to Adrianis that if he were to dissect them, he would 'find their anatomy faulty'. 'I am no artist', he concedes, 'or art critic either, or I should venture to say that I object to their attitude. Arrested motion is a thing too momentary to perpetuate in metal or in stone' (99-100). As well as presenting themselves as authorities on biological life, by the *fin-de-siècle*, physiologists were delving into the unconscious mind and using graphic recording machines to develop a 'science of emotion'. This brought them into greater contact with the 'competing technologies of poets, writers, painters, and actors who shared in the quest for representation'.[270] Dror notes that, rather than reject these 'alternative knowledge makers', some physiologists considered that art, poetry, and theatre could illuminate scientific laws.[271] Bernard, for instance, believed he could 'affirm art through science'.[272] As Damer's commentary upon Venice's equine sculptures suggests, emphasis was often placed upon 'testing' artistic intuition by a scientific yardstick. Thus, discussions often centred upon issues of physiological, psychological, and emotional verisimilitude which had roots in the physiological laboratory and the vivisection method. As the subjects of art and science overlapped, some notable writers adopted the tools of experimental physiology and considered how methods and ideas relating to vivisection could apply to literary contexts.

[270] Ibid., 368.
[271] Ibid.
[272] Bernard, 'Sur la physiologie du cœur', p.427.

Chapter 4: Writing as Vivisection

Murder, civil service examinations, circumcision, protracted legal proceedings, and irresponsible newspaper reportage: each of these was described as an act of 'vivisection' by the nineteenth-century British press.[1] As well as being shorthand for unpleasant, invasive, or drawn-out ordeals, the language of live experimentation described interpersonal wounding. Gossip, jibes, sarcasm, indelicate questions, and slander were deemed 'scientific vivisection[s] of character'.[2] Although comparisons with physiology were made promiscuously after the mid-century, vivisection was conspicuously figured as a metaphor for literary practices. Hundreds of articles summoned images of live animal experimentation to describe artistic methods or effects, with the phrases 'literary vivisectors' and 'literary vivisection' appearing, for example, in the *Athenaeum*, *Good Words*, the *London Quarterly Review* and the *Dublin Review*.[3] The phenomenon was not genre specific: realist writers, biographers, historians, sensation novelists, poets, and essayists were all at some point deemed 'vivisectors'.[4] Sometimes, the connection was used to illustrate a particular aspect of literary writing, such as narrative technique, the determination of incident, characterisation, choice of subject matter, or form. At other times, comparisons between writers and experimental physiologists were deployed to commend or deride literary skill. As Robert Mitchell points out, the term 'experimental' was applied to various nineteenth-century literary works, but it is 'not [...] always clear what these invocations of experiment and experimentalism mean in the context of art, and whether such descriptions have much, if anything, to do with *scientific* experimentation'.[5] The same ambiguity hangs over some vivisection metaphors, and occasionally the purpose of the connection remains obscure.

Nonetheless, patterns emerge. Generally speaking, experimental physiology and creative or critical writing were practices 'based on minute observation, even invasion, of the processes of

[1] [Unsigned], 'Charles Felix Lemaire', *Spectator*, 40.2018 (2 March 1867), 238; James Macauley, 'Government Offices: The Civil Service Commission and Examination', *Leisure Hour*, 934 (20 November 1869), 747-49; [Unsigned], 'How shall Jewish Proselytes be received into Israel? Can the Mosaic Rite of Vivisection be Dispensed with?', *Chicago Daily Tribune*, September 1878, p.9; [Unsigned], 'A Queer Fish', *New York Times*, 24 January 1864, p.4; Karl Blind, 'The War Scare', *Examiner*, 3511 (15 May 1875), 540-41.

[2] [Unsigned], 'A Word for Female Vanity', *Sunday Review of Politics, Literature, Art and Science*, 22.581 (15 December 1866), 728-29 (p.728); Duke de Pomar, 'A Secret Marriage and its Consequences', *Tinsley's Magazine*, 23 (August 1878), 113-38 (p.122); [Unsigned], 'Tact', *London Society*, 9.54 (June 1866), 518-21 (p.519); W. M. Statham, 'Private and Confidential. Sarcasm', *Quiver*, 12.577 (January 1877), 310-12 (p.311).

[3] B. J., 'Literary Vivisection', *Athenaeum*, 1879 (October 1863), 571-73; R. H. Reade, 'The Apostle of Russia', *Good Words*, 33 (January 1892), 448-52 (p.450); [Unsigned], 'French Fiction of the Century: Pierre Loti', *London Quarterly Review*, 24.1 (April 1895), 55-70 (p.56); J. C. Hoey, 'Lothair', *Dublin Review*, 15.29 (July 1870), 156-78 (p.168).

[4] [Unsigned], 'French Fiction of the Century', p.56; Reade, 'The Apostle of Russia', p.450.

[5] Robert Mitchell, *Experimental Life: Vitalism in Romantic Science and Literature* (Baltimore: John Hopkins UP, 2013), pp.11-12 [emphasis in original].

life'.[6] More specifically, the motif of live experimentation offered a framework through which to scrutinise writerly and readerly 'operations' and to negotiate the nature and extent of the author or critic's stylistic, emotional, and intellectual involvement in their work. Reflecting the text-as-body-body-as-text tradition, images of surgical exploration such as 'slicing' or 'cutting' to the heart of some 'subject' or 'matter' often signalled close and incisive textual engagement.[7] Although the analogy between vivisection and literary writing aligned with these connotations in some respects, it did not, as one might expect, require a sharp point of contact between writer or reader and the subject or character. Nor was it necessarily concerned with the production of affect. In fact, this discourse was often preoccupied with exploring the possibilities of detachment rather than connection, and the absence of, rather than the expression of, feelings. Furthermore, the extent to which writers tried to actualise the analogy further distinguished 'vivisection' from other metaphors related to anatomical cutting. Many aimed for a type of 'scientific' fiction embracing physiological principles and thereby used the pen to probe emotional and psychological facets of experience that the scalpel failed to reach.

In the nineteenth century, texts were often figured as sites of live self-experimentation when the writer's personal thoughts or feelings were deemed to have impinged upon (or formed the subject of) the work. '[T]he vivisection of the inner world', the 'minute analysis of feelings, the self-contemplation, the studies of shades of sentiment and of moral fibres', was sometimes welcomed by readers and critics as a refreshing 'contrast with the nervous, feverish excitement' of the time, so focused on 'external animation'.[8] Just as often, however, excessive introspection was regarded as a morbid symptom of contemporary life. One exasperated *New York Tribune* correspondent grumbled that every contemporary writer 'seems to think it necessary now to indulge in these labors of moral vivisection – to pick a heart in pieces with the pen'.[9] Many commentators fused ethical and aesthetic judgements, using vivisection to signal both moral and formal impropriety. For instance, in his review of Julia Black's novel *Leon de Beaumanoir* (1865), (published under her pseudonym Aemilia Julia) for the *London Review*, Charles Mackay praised the author's resistance to self-experiment:

> We have no vivisection, no shrieks of agony, no cries of desolation or hopeless yearning. The writer has sunk herself in her imaginary characters and has produced a story which, if

[6] Richard Menke, 'Fiction as Vivisection', *English Literary History*, 67.2 (2000), 617-53 (p.619).
[7] See for instance Robert Burton, *The Anatomy of Melancholy* (Oxford: John Lichfield and James Short, 1621). In his extended title, Burton promises that he has 'Opened and Cut up' the subject.
[8] K. Hillebrand, 'Caroline Schlegal', *Fortnightly Review*, 11.64 (April 1872), 408-27 (p.414).
[9] [Unsigned], 'A Literary Veteran: Alexandre Dumas in Madrid', *New York Tribune*, 8 October 1870, p.2.

> it is not very remarkable, is at least so far healthy, that it is direct and positive in its character, and is distinguished by the absence of morbid analysis and pervading egotism.[10]

Once sunk into the characters, authorial personality is absorbed and dispersed. By effectively removing herself from the novel, Black resists the 'intense personal revelation' which Mackay believed made women's literature 'so painful and, in a certain sense, so effective'. Thus, she avoided becoming either vivisector or vivisected.

The *Contemporary Review* praised Alfred Tennyson's *Idylls of the King* (1859-85) in strikingly similar terms. It is,

> no study of Vivisection with the Poet turned into a demonstrator of anatomy – nor a string of instances of morbid introspection, but above all things a Poem. The limits and conditions of Art are observed and respected profoundly and with all its fullness and multitude there is never loss of Form or confusion, or contradiction.[11]

This review recalled Robert Buchanan's notorious attack on Pre-Raphaelitism published, pseudonymously, in the same periodical a year prior. Buchanan dismissed the fleshly poets as belonging to 'merely one of the many sub-Tennysonian schools'. He claimed that Gabriel Rossetti's literary and artistic work had a 'spasmodic' quality, showed a 'morbid deviation from healthy forms of life', and possessed an excessive sensuality and 'superfluity of extreme sensibility'.[12] Tennyson's method is the antithesis of 'vivisectional' Pre-Raphaelitism partly because of his more decorous selection and treatment of subject-matter. The critic writes effusively that the first impression is

> one of simple and complete external loveliness – of a series of gorgeous landscapes taken exactly from nature – of a glittering and splendid revival of the past – of knightly days and doings set to mellifluous music under the shining skies of chivalry.[13]

As well as lavishing attention on 'external loveliness', Tennyson further eschews poetic vivisection by avoiding 'morbid introspection' and maintaining a sense of narrative wholeness. The critic marvels that the poems are 'arranged in proper order and sequence', and that '[t]he same harmony and keeping may be traced throughout'.[14] By first juxtaposing poetic and corporal form, and then distancing Tennyson from scientific practices which weakened the integrity of the body (i.e. vivisection and dissection), the critic credits a non-invasive literary approach for preserving structural soundness and ensuring 'aesthetic completeness' across the twelve poems.

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[10] Charles Mackay, 'Leon de Beaumanoir', *London Review of Politics, Society, Literature, Art, and Science*, 11.272 (16 September 1865), 312-13 (p.312).

[11] [Unsigned], 'The Meaning of Mr Tennyson's "King Arthur"', *Contemporary Review*, 21 (December 1872), 938-48 (p.948).

[12] [Thomas Maitland] Robert Buchanan, 'The Fleshly School of Poetry: Mr D. G. Rossetti', *Contemporary Review*, 18 (October 1871), 334-50 (p.335, p.337).

[13] [Unsigned], 'The Meaning of Mr Tennyson's "King Arthur"', p.939.

[14] Ibid., pp.939-40.

Images of self-vivisection were forwarded to warn against emotional exhibitionism and egoistic indulgence. Even Romantic writers, for whom authentic self-revelation was expected, were admonished on these grounds.[15] For example, the Scottish writer and critic William Edmonstoune Aytoun suggested that it was distasteful to transform private feeling into public display. Pointedly comparing Sir Walter Scott and Percy Shelley, he wrote that the latter 'practises self-anatomy and intreats the public to assist at the vivisection of his palpitating heart'.[16] The *Examiner* surmised that poets were less prone to write autobiographically and faulted novelists for 'putting themselves through a process of vivisection for the public to see how they are getting on inside'.[17] But writers did not need to theatrically expose their innermost feelings to be charged with experimental self-cutting. One *Contemporary Review* essayist saw 'self-vivisection' in a very different light, arguing that it was more natural to those whose 'self-observation is not of the poetical, contemplative, brooding kind, but keen, incisive and analytical'.[18] A dispassionate mode could be equally troubling however; the commentator concluded that eventually, for Stendhal – one of the earliest French realists – 'the vivisection of his own heart destroyed his capacity for simple enjoyment'.[19] 'Vivisection', it seems, could denote both a slashing opening of self, resulting in an efflux of unrestrained emotion, or cool-headed and contemplative analysis. In many of the above instances, 'vivisection' is closely connected to ideas of 'morbid anatomy'. Yet, while criticism of the latter tended to relate to a disagreeable degree of self-attention, the former often connoted ruthless detachment from self or subject.

Writers were also reprimanded when their vivisection of 'mental anatomy' produced 'interesting cases' rather than rounded characters. For example, the *Spectator* claimed that,

> A novel is now usually written to advocate some favourite theory in social ethics, and the author finds it easier to illustrate his doctrine by the elaborate vivisection of his personages, than to preach it dramatically by their words and actions. The puppet is no longer a character, but a subject, and our admiration of the artist at once betrays the faultiness of his work.[20]

In this example, 'vivisection' is the antithesis of Aestheticist values. It draws together concerns about demoting complex individual characters to 'types', 'subjects', or 'matter'. It also expresses discomfort with the possibility of the artistic personality or operation puncturing the imaginative world of the text and impeding the reader's appreciation of beauty. The passage appears to reject the notion of art serving moral or political ends, but the intrusive manner in which the writer's

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15 William St Clair, 'Romantic Biography: Conveying Personality, Intimacy, and Authenticity in an Age of Ink on Paper', in *On Life-Writing*, ed. Zachary Leader (Oxford: Oxford UP, 2015), pp.48-71.
16 William Edmonstoune Aytoun, *Dublin University Magazine*, 70.419 (November 1867), 587-600 (p.597).
17 [Unsigned], 'Poets and Personal Pronouns', *Examiner*, 3657 (2 March 1878), 268-70 (p.270).
18 E. D., 'L'Art et la Vie de Stendhal', *Contemporary Review,* 12 (November 1869), 479-80 (p.480).
19 Ibid., p.480.
20 [Unsigned], 'Mr Leslie Stephen on Two Great Novelists', *Spectator*, 52.2665 (26 July 1879), 953-55 (p.953).

'doctrine' is conveyed is most problematic. Instead of revealing otherwise imperceptible thoughts and feelings via external signs such as speech and actions, the writer eviscerates and displays the mechanisms and modulations of a character's psychological life and their innermost beliefs for the reader to observe. By using the comparison with vivisection to reject the conspicuous interference of the writer, the *Spectator* reiterated a perspective prevalent early in the century which was reinforced by modernist understandings of artistic impersonality that 'telling' was a more defective method than 'showing'.[21] As these examples illustrate, the analogy between vivisection and literary writing was used to tussle with the presence of the author or poet in a variety of contexts and genres. This chapter now turns to focus upon three modes in relation to which allusions to experimental physiology were most significant: naturalist, realist, and literary critical writing.

Various factors, including a more stable political context and a less antagonistic relationship with Romanticism, meant that early British realists were 'wary of identifying the aims of the novelist with those of the scientist in the way that Balzac, Flaubert, and Zola had done'.[22] Nevertheless, along with her partner G. H. Lewes, England's pre-eminent realist George Eliot found the connection with physiological experimentation compelling. Her position on the artistic applicability of physiology experiments is less clearly defined and articulated than Lewes's. However, she too used ideas about vivisection to contemplate (and her reviewers to critique) her distinctive narrative 'intrusions' and to create psychologically complex characters. Studying the contemporary reception of Eliot's novels exposes how experimental physiology linked the realist and naturalist traditions. Despite geographical, generic, and ideological differences, Eliot, Lewes, Émile Zola, and August Strindberg, amongst others, each pondered whether the principles of the 'new physiology' could offer novelists and playwrights a framework through which to recast the role of the writer and perhaps even redefine the function of fiction. Naturalist writers, however, tended to think about vivisection slightly differently, although with some of the same ends in sight. Zola and Strindberg embraced a Bernardian philosophy of science with the theory and practice of vivisection at its core to consider how to detach from their subjects, and to test whether authorial effacement could produce literature based on scientific laws. Allusions to vivisection by British literary critics also interrupted the more predictable meanings attached to surgical and anatomical cutting in the body-as-text-text-as-body tradition. Experimental physiology expressed – perhaps even helped inspire – an evolution of critical approach in the latter part of the nineteenth century away from destructive reviewing and towards a greater attention to the principles of critical interpretation.

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21 K. M. Newton, 'Narration', in *Oxford Reader's Companion to George Eliot*, ed. John Rignall (Oxford: Oxford UP, 2001), pp.280-82 (p.280).

22 Pam Morris, *Realism* (New York: Routledge, 2003), p.78.

George Eliot: experimental intervention

There has been a long-standing consensus that French and British realism took diverging paths from the early-to-mid nineteenth century. While the former was preoccupied with the grimness of existence and often foregrounded psychological analysis, the latter tended to focus upon the humdrum lives of the middle classes. The enthusiasm with which French novelists embraced scientised identities and methods appeared to widen the split. English critics described writers like Gustave Flaubert and Honoré de Balzac as belonging to the 'morbid anatomy school', and often defined native realism against the distasteful 'physiological' or 'vivisectional' experiments of their Gallic neighbours.[23] Flaubert described *Madame Bovary* (1857) as 'a work of criticism, or rather of anatomy'.[24] The French caricaturist Achille Lemot's depiction of him was inspired by the celebrated closing lines of Charles Augustin Sainte-Beuve's article in the *Moniteur Universel* (1857): 'Son and brother of eminent doctors, M. Gustave Flaubert wields the pen as others wield the scalpel. Anatomists and physiologists, I find you on every page!' (see Fig. 24).[25]

Known as 'the Victorian novelist most invested in contemporary scientific discoveries and in their ability to shed light on the fictional worlds she explores', Eliot complicates this break in literary styles along national lines.[26] Henry James famously complained that *Middlemarch* (1872) was 'too often an echo of Messrs. Darwin and Huxley'.[27] Sidney Colvin, more positively, felt that Eliot had 'taken the lead in expressing and discussing the lives and ways of common folks […] in terms of scientific thought'.[28] Eliot's knowledge of contemporary science was formidable. From youth, she read widely on subjects including physics, geology, chemistry, astronomy, mathematics, and

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[23] George Saintsbury, *A Short History of French Literature* (Oxford: Clarendon Press, 1917), p.563; Eugène Maron, 'Critique littéraire: Année 1847', *La Revue indépendante*, 7 (5 January 1847), 242, quoted in Jann Matlock, 'Censoring the Realist Gaze', in *Spectacles of Realism: Body, Gender, Genre*, ed. Margaret Cohen and Christopher Prendergast (Minnesota: University of Minnesota Press, 1995), pp.28-65 (p.28). Emily Allen notes that 'morbid anatomy' was not a term exclusively reserved for realist writing but could also be used to describe sensation novels considered too explicit (sexually or otherwise) but not necessarily realistic. See *Theater Figures: The Production of the Nineteenth-century British Novel* (Columbus: Ohio State UP, 2013), p.222 n.9.

[24] Gustave Flaubert, [Letter to Louise Colet January 1854] quoted in *Documents of Literary Realism*, ed. George Joseph Becker (Princeton, Princeton UP, 1963), p.94.

[25] Charles Augustin Sainte-Beuve, '*Madame Bovary*, par M. Gustave Flaubert', *Le Moniteur universel*, 4 May 1857, quoted in Gustave Flaubert, *The Letters of Gustave Flaubert, 1830-1857*, ed. & trans. Francis Steegmuller (Cambridge, MA: Belknap Press, 1980), p.231.

[26] Devin Griffiths, *The Age of Analogy: Science and Literature between the Darwins* (Baltimore: John Hopkins UP, 2016), p.170.

[27] Henry James, 'Middlemarch', *Galaxy,* 15 (March 1873), 424-28 (p.428).

[28] Sidney Colvin, review [of *Middlemarch*], *Fortnightly Review,* 13 (January 1873), 142-47, quoted in Angelique Richardson, 'George Eliot, G. H. Lewes, and Darwin: Animals, Emotions, and Morals', in *After Darwin: Animals, Emotions, and the Mind*, ed. Angelique Richardson (Amsterdam: Rodopi, 2013), pp.136-71 (p.150).

phrenology.[29] As editor of the *Westminster Review*, she corresponded with various scientists in the 1850s and this network expanded through her partnership with G. H. Lewes.[30]

Figure 24. A. Lemot, 'Flaubert Dissecting Madame Bovary', first published in *La Parodie*, (December 1869).

The couple often shared intellectual interests and there is a correlation between Eliot's evolving novelistic style and Lewes's contemporaneous scientific interests which were often pursued via vivisection.[31] Even Mark Wormald, who considers Lewes as a scientist primarily reliant on optical rather than surgical instruments – a 'pioneering advocate of amateur microscopy and natural history' – notes that Lewes's 'progress from "mere book-knowledge" of science to noted experimentalist matched her development from essayist to novelist'.[32] Others have addressed the impact of Lewes's physiological research upon Eliot's writing more directly. For example, Otis links *Middlemarch*'s imagery of webs and networks with Lewes's research on the nervous system

[29] Sally Shuttleworth, 'Science', in *Oxford Reader's Companion to George Eliot*, ed. John Rignall (Oxford: Oxford UP, 2001), pp.365-69.
[30] Laura Otis, *Networking: Communicating with Bodies and Machines in the Nineteenth Century* (Ann Arbor: University of Michigan Press, 2001), p.82.
[31] George Levine, *The Realistic Imagination: English Fiction from Frankenstein to Lady Chatterley* (Chicago: University of Chicago Press, 1981), pp.252-74; Richard Simpson, 'George Eliot's Novels,' *Home and Foreign Review*, 3 (1863), 522-49, reprinted in David Carroll (ed.), *George Eliot: The Critical Heritage* (London: Vikas, 1971), pp.221-50 (p.235); Sally Shuttleworth, *George Eliot and Nineteenth-Century Science, The Make-Believe of a Beginning* (Cambridge: Cambridge UP, 1984), p.18.
[32] Mark Wormald, 'Microscopy and Semiotic in Middlemarch', *Nineteenth-Century Literature,* 50.4 (1996), 501-24 (p.502).

and brain structure.[33] Sally Shuttleworth traces a shift from methods of scientised observation to active experimentation throughout Eliot's career which she relates to the author's changing interpretation of contemporary organic theory. Comparing her first and last novels, Shuttleworth notes that,

> In *Adam Bede* she adheres to the scientific and artistic creed she had earlier outlined in her essay, 'The Natural History of German Life'. She adopts the role of natural historian, a passive observer of organic life, concerned only to record the unchanging details of external form. […] In *Daniel Deronda*, however, her narrative method is closer to that of the creative, experimental scientist […]. The methods of natural history are replaced by those of experimental physiology. No longer a passive observer, but now an active participant, George Eliot actively creates the experiment of her novel.[34]

Although she does not use the term 'vivisector', Shuttleworth's description of Eliot's progression from passive observer of external form to active investigator of inner substance is very suggestive. She also notes the centrality of Claude Bernard's philosophy of science to Eliot and Lewes's scientific conceptions of life and mind, but offers little sense of Bernard's laboratory work or his position at the centre of the vivisection controversy.[35]

Whereas Deanna Kreisal interprets metaphors of scientific observation ('microscopic vision') and intervention ('probing examination') in *Middlemarch* and *Daniel Deronda* as part of Eliot's commentary upon 'medical interference with women's bodies', Richard Menke makes the connection with vivisection explicit.[36] He argues that the analogy between literature and live experimentation was fundamental for both Lewes and Eliot who each believed that fiction could exceed rather than just emulate experimental physiology. Her evolving theory of the novel, he argues, bordered on Lewes's theory of '*écriture* as vivisection': that 'the zone of contact' between fiction and vivisection,

> would offer 'laws' for creating successful literature: a psychology, conceived of neither in the terms of Kantian introspection nor in those of static natural history, but along the lines of Claude Bernard's new physiology, whose central investigative tools were animal experiment and vivisection.[37]

Menke asserts that Eliot 'imaginatively appropriated laboratory techniques' and used 'language and techniques translated from Lewes's physiological psychology to develop a type of fictional psychology'.[38] This, in his view, explains the evolution from what he, perhaps unjustly, describes as the 'humble realism' of *Scenes of Clerical Life* and *Adam Bede* to later novels like *Middlemarch* and

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[33] Otis, *Networking*, pp.100-01.
[34] Shuttleworth, *George Eliot and Nineteenth-Century Science,* p.xii.
[35] Menke, 'Fiction as Vivisection', p.642.
[36] Deanna K. Kreisel, 'Incognito, Intervention, and Dismemberment in *Adam Bede*', *English Literary History*, 70 (2003), 541-74 (pp.548-9).
[37] Menke, Fiction as Vivisection', p.618.
[38] Ibid., p.619, p.629.

Daniel Deronda (1876), the latter of which Eliot wrote while Lewes was occupied with the First Commission on Vivisection.[39] Menke develops his argument by making compelling comparisons between, for instance, Lewes's theories about the mind and the nerves (developed by vivisecting frogs and newts) and the emphasis Eliot's later fiction places on representing moment-to-moment thought. This section extends and contextualises Menke's research by opening up a new vein of inquiry. Beginning with an analysis of the two novels in which actual vivisections briefly feature – *The Lifted Veil* (1859) and *Middlemarch* – it then explores how and why contemporary critical responses to Eliot's novels often described her writing technique as, or akin to, 'vivisection'.

Eliot's early gothic novella, *The Lifted Veil*, has recently received critical attention for its bizarre revivification experiment by blood transfusion.[40] This scene provides the sensational apex of the tale: a maid, briefly revived by a scientist called Charles Meunier, reveals that her mistress, the protagonist's wife Bertha, is plotting his murder. The maid's revival is achieved through what is undoubtedly a human vivisection. The procedure had previously been tried on animals and, although it 'will do her no harm', the operation is neither performed for her benefit nor with her consent. Menke's commentary links this scene with the 'vivisectional' first-person protagonist-narrator Latimer, whose clairvoyant powers render him incapable of screening out other people's thoughts, save for Bertha's. As Menke describes it, 'Latimer is a sort of audacious but morbid authorial experiment: he is an omniscient narrator who has been trapped as a character in the story that is rendered in his voice'.[41] Although the scientific basis of his telepathic powers are flimsy, Latimer's unfettered access to the secret motives and petty egoisms of others is described in medico-scientific language. He sees people 'in all their naked skinless complication' and analyses the very 'web' of their personalities 'as if thrust asunder by a microscopic vision'.[42] The final vivisection scene penetrates one woman's body to expose another's hitherto impenetrable mind. Only actual, bodily experimentation can elicit the verbal testimony which unveils the true story of Bertha's designs.

Middlemarch also subtly connects scientific and literary operations. It has often been remarked that Camden Farebrother and Tertius Lydgate encapsulate the tension between scientific observation and experimentation, or between theory and practice. The former represents the gentlemanly amateur natural historian, while the latter cuts the figure of the up-and-coming

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[39] Ibid., p.629.
[40] Beryl Gray, 'The Lifted Veil' in *Oxford Reader's Companion to George Eliot*, ed. John Rignall (Oxford: Oxford UP, 2001), pp.231-32; Melissa Raines, 'Knowing too Much: The Burden of Omniscience in *The Lifted Veil*, *The George Eliot Review*, 43 (2012), 39-46.
[41] Menke, Fiction as Vivisection', p.629.
[42] George Eliot, *The Lifted Veil and Brother Jacobs*, ed. Helen Small (Oxford: Oxford UP, 2009), p.15, p.14.

middle-class scientific researcher.[43] Although Lydgate is primarily a clinical anatomist, he seeks to extract medical data from the living too. Albeit with Mr Trumbull's express consent, he allows the patient's pneumonia to progress in order that the stages of illness and recovery 'might be noted for future guidance'.[44] In fact, Lydgate practiced experimental physiology as a medical student in Paris (a combination of location and occupation that would have screamed 'vivisector' to certain readers). Eliot briefly mentions his 'galvanic experiments', which resembled Lewes's own:[45]

> One evening, tired with his experimenting, and not being able to elicit the facts he needed, he left his frogs and rabbits to some repose under their trying and mysterious dispensation of unexplained shocks, and went to finish his evening at the theatre of the Porte Saint Martin, where there was a melodrama which he had already seen several times. (148)

Here, Eliot evocatively juxtaposes the laboratory and the theatre. In the former, Lydgate subjects the nervous systems of living animals to electrical currents and tries to decipher the meaning of their reactions. In the latter, he surrenders himself to the emotional and psychological shocks promised by a melodrama. One is for entertainment and the other for science, but this gesture extends 'experimentation' to dramatic and literary spaces and knits together physical action with psychological and emotional responses.

During this particular evening's performance, real and imaginary, and scientific and dramatic cuts are blurred further still. Instead of miming murder as per the script, the actress Laure stabs her real-life husband (a fellow actor) to death. Though this takes place on stage and in full view of the audience, it is not clear if the act was intentional; Lydgate, who is infatuated with Laure, maintains that the incident was a terrible accident. When she flees the capital, he follows, and proposes marriage. At this juncture, Laure discloses that she deliberately committed mariticide and – to Lydgate's horror and disbelief – not because of her husband's wrong-doing but because she was weary of married life. The episode prepares the reader for Lydgate's lack of insight regarding women with whom he has a romantic interest, such as Rosamund Vincey.[46] However, Eliot also parallels Lydgate's unreliable understanding of his lovers and his interaction with experimental animals. Vivisection precedes and follows his pursuit of Laure. The narrative moves directly from the moment she unrepentantly admitted her intentions, and Lydgate finally sees the woman he had adored 'amid the throng of stupid criminals', to the following passage:

> Three days afterwards Lydgate was at his galvanism again in his Paris chambers, believing that illusions were at an end for him. He was saved from hardening effects by the abundant

[43] Diana Postlethwaite, 'George Eliot and Science', in *The Cambridge Companion to George Eliot*, ed. George Levine (Cambridge: Cambridge UP, 2001), pp.98-118 (p.99).
[44] Menke, Fiction as Vivisection', p.631; George Eliot, *Middlemarch: A Study of Provincial Life*, ed. David Carroll (1871; Oxford: Clarendon Press, 1992), p.442. Subsequent references will be made to this edition and in the main text.
[45] Menke, Fiction as Vivisection', p.632.
[46] Suzanne C. Ferguson, 'Mme. Laure and Operative Irony in *Middlemarch*: A Structural Analogy', *Studies in English Literature, 1500-1900*, 3.4 (1963), 509-16 (p.509).

> kindness of his heart and his belief that human life might be made better. But he had more reason than ever for trusting his judgment, now that it was so experienced; and henceforth he would take a strictly scientific view of woman, entertaining no expectations but such as were justified beforehand. (151)

Here, the narrator's statements apply to both Lydgate's scientific and romantic experiments, and Eliot obliquely replies to the two commonest antivivisection arguments. To the notion that vivisection desensitised the operator, she assures the reader that Lydgate's 'abundant kindness' is protection enough. By presenting his motivation to vivisect – 'that human life might be made better' – as sincere, she contradicts the claim that animal experimentation offered no benefits to clinical medicine and that vivisectors worked for selfish gratification. Nonetheless, we are not encouraged to have faith in Lydgate's ability to apply his laboratory training to a prudent analysis of women's hearts. If not already alerted by the knowing tone of this passage, the reader will soon discover that his days of romantic 'illusions' are by no means over.

Despite determining to take 'a strictly scientific view of woman', Lydgate is unable to correctly interpret what takes place in front of his very eyes. In the case of Laure's performance – as with Lydgate's galvanic experiments upon the nervous systems of animals – *actuality* appears to be an *act*, and vice-versa. Although he is enchanted by her 'eyes that seemed to wonder as an untamed ruminating animal wonders', unlike an animal she can confess that her murderous act was deliberate: '*I meant to do it*' (151), she twice confirms (the lines appearing in italics for further emphasis). Even then, he finds her motives incomprehensible and struggles to reconcile cause and effect, action and reaction, just as with the frogs and rabbits whose company he traded for an evening at the theatre. Although Eliot does not provide details of Lydgate's vivisections, a galvanic experimenter would typically apply an electrical current to elicit mechanical movements or reflexes in order to establish their seat (e.g. a particular nerve branch or region of the brain). Yet Lydgate consistently lacks the ability to interpret the relationship between external signs and internal reality, which is ironic given that his research aim is to illuminate the relationship between psychology and behaviour:

> [h]e wanted to pierce the obscurity of those minute processes which prepare human misery and joy, those invisible thoroughfares which are the first lurking-places of anguish, mania, and crime, that delicate poise and transition which determine the growth of happy or unhappy consciousness. (162)

He is attracted to Rosamond largely because hers is 'the very opposite' (156) of Laure's 'Greek' profile but, as Suzanne Ferguson remarks:

> The terrifying reality is that, while in every respect of physical and constitutional makeup Rosamond is quite the opposite of Laure, she is, beneath her blond liveliness and behind her forget-me-not eyes, not only Laure's equal but her superior in cold-blooded egoism.[47]

This 'romantic heroine, […] playing the part prettily' (291) is even more adept an actress than Lydgate's first dark-featured, large-eyed love. Despite his resolution to 'entertain[] no expectations but such as were justified beforehand', he falls to 'spinning that web from his inward self with wonderful rapidity, in spite of experience supposed to be finished off with the drama of Laure' (337). Indeed, Ferguson argues that, far from being an isolated incident, the 'drama of Laure' establishes Lydgate's chronic inability to pierce the web of appearance and see reality clearly.[48]

In *The Lifted Veil* and *Middlemarch,* metaphorical vivisections of the psyche are connected with actual live experimentation. Yet, Latimer and Lydgate each fail to uncover the minds and motives of women that fascinate them. In *The Lifted Veil* an actual operation is required to uncover the truth, and in *Middlemarch* laboratory know-how does not translate into interpersonal contexts. In both narratives, Eliot relates 'vivisection' to literary and dramatic spaces and also demonstrates the difficulties of 'vivisecting' the psyche from within the internal world of the novel. However, piercing a fictional world from the outside raised a new set of issues relating to the position of author or narrator as 'vivisector', the inferences of which Eliot was well aware. Kreisal notes that she was circumspect about 'the ethical implications of her literary technique' and, like other mid-Victorian advocates of realism, 'ambivalent about the practices of secrecy and intrusiveness that she herself engage[d] in as an author'.[49] Nonetheless, she became 'renowned – and occasionally reviled – for the intrusiveness of her narrators'.[50] This particular objection was established in early reviews and continued to be echoed in scholarly appraisals until the 1950s and '60s. Even then, those who defended her narrative style, such as W. J. Harvey, objected to direct authorial intrusions 'by way of stage directions or of moral commentary'.[51] Although Kreisel argues that 'instructive, directive, expounding, philosophizing narratorial intervention' is 'aggressively evident from the first novel to the last', contemporary reviewers were more critical of this aspect in her later works.[52] Of *Adam Bede* (1859), one temperately remarked that there was 'some fault to be found with the manner in which the author intrudes himself in the book', while reviewers of *Middlemarch* made

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[47] Ferguson, 'Mme Laure and Operative Irony in *Middlemarch*', p.511.
[48] Ibid., p.512.
[49] Kreisel, 'Incognito, Intervention, and Dismemberment in *Adam Bede*', p.550, p.542.
[50] Ibid., p.541.
[51] W. J. Harvey, *The Art of George Eliot* (London: Chatto & Windus, 1961), p.69; Newton, 'Narration', *Oxford Reader's Companion*, p.280.
[52] Kreisel, 'Incognito, Intervention, and Dismemberment in *Adam Bede*', pp.549-50.

more vocal protestations and regarded Eliot's 'intrusive philosophizing' as a mark of aesthetic, and possibly ethical, shortcomings.[53]

Middlemarch reveals Eliot's 'particular anxiety' about 'narratorial intervention'.[54] Although its prelude presents the narrator as a kind of historian documenting events from a distance, references to studying the 'history of man' under the 'experiments of Time' indicate 'an aspiration to comprehensiveness and an allegiance with science'.[55] Eliot never explicitly adopted the identity of 'vivisector', but she described her work in a letter to her publisher as 'a set of experiments in life', and also created an affinity between scientific and novelistic practices by recasting, for example, her novelistic aims as Lydgate's scientific goals.[56] Whereas Eliot only alluded to authorial and narrative experimentation, reviewers described her as a 'vivisector', 'anatomist', and 'surgeon'.[57] As was common in early responses to *Middlemarch*, the *Spectator* claimed that ironic interjections were incongruous with Eliot's broadly sympathetic treatment of life and character. In an otherwise appreciative review, it opined that there was 'something of the cruelty of vivisection' in the 'heavy sarcasms' that she interposed, although this mode was often deemed appropriate for more satirical writers like William Thackeray.[58] For instance, the *Westminster Review* remarked upon the chilling 'photographic quality' of Thackeray's early writings, commenting that, '[t]here seems to be no sympathy between the writer and his characters. They are, as it were, on the other side of the glass he holds to them. He scrutinises them with an anatomical microscope; he submits them calmly to vivisection'.[59] Scientific experimentation provides Thackeray with a mode of looking at his characters, while the tools of the laboratory – the microscope and the scalpel – convey his distance from them. Other male writers were likewise praised as vivisectors for their 'sharp', 'clear', and 'witty' styles.[60] For instance, in a review of the popular novel *Guy Livingstone* (1857), published anonymously by George Alfred Lawrence, *The Times* wrote that 'the love-agonies' of one character are 'good reading' because the author is 'proficient in this kind of vivisection'.[61] Eliot's sympathetic view of human folly, however, and her artistic style 'as a painter of human character' rendered sharp comments and sarcasm 'like broken lancet-points in a living body'. Her narrative

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[53] Quoted in Kreisel, 'Incognito, Intervention, and Dismemberment in *Adam Bede*' pp.541-42.
[54] Kreisel, 'Incognito, Intervention, and Dismemberment in *Adam Bede*', p.550.
[55] Newton, 'Narration', *Oxford Reader's Companion*, p.281; John Rignall (ed.), *Oxford Reader's Companion to George Eliot*, p.20.
[56] George Eliot, [Letter to John Chapman], in *The George Eliot Letters*, ed. Gordon S. Haight, 9 vols (New Haven: Yale UP, 1954), I, 216-17 (p.216).
[57] Frank T. Marzials, 'George Eliot and Comtism', *London Quarterly Review*, 47 (January 1877), 446-71 (p.60); [Unsigned], 'Daniel Deronda' [review], *New Quarterly Magazine*, 14 (May 1877), 240-51 (p.248); J. H. B. Browne, 'Theophrastus Such', *Westminster Review*, 112 (July 1879), 185-96 (p.189); [Unsigned], 'George Eliot's "Middlemarch"', *Spectator,* 44.2268 (16 December 1871), 1528-29 (p.1529).
[58] [Unsigned], 'George Eliot's "Middlemarch"', p.1529.
[59] [Unsigned], 'M. Thackeray as Novelist and Photographer', *Westminster Review*, 74 (1860), 500-23 (p.506).
[60] [Unsigned], 'Recent Novels', *The Times*, 28178 (5 December 1874), 4.
[61] Ibid.

'vivisections' disrupted expectations of female authorship and were not presented by the *Spectator*'s reviewer as significant or skilful operations that might reveal truth. Instead, they claimed that she inflicted 'little superfluous wounds' to no greater purpose.[62]

But who or what is being vivisected? Although Eliot's ironic remarks are often aimed at the characters, readers might also smart in sympathetic response, and sometimes become themselves subjected to cutting criticism. For example, after a passage that follows Mrs Cadwallader's fervent hatred for 'the vulgar rich' whom she blames for high retail prices and considers 'no part of God's design in making the world', the narrator interjects: [l]et any lady who is hard on Mrs Cadwallader inquire into the comprehensiveness of her own beautiful views and be quite sure that they afford accommodation for all the lives which have the honour to co-exist with hers (59). To explore the relationship between society and psychology Eliot needed to 'vibrate between the external and internal worlds of human beings'.[63] As well as using free indirect style to move unobtrusively between the character's interior thoughts and the narrator's evaluation, and employing self-revealing speech, her later novels exploit irony (both verbal and of circumstance) more fully. Wry remarks about the provincial perspectives of her characters and the society in which they function 'vivisect' on three fronts: firstly, they provide sharp insight into the character's psyche that may be inaccessible to surrounding characters; secondly, sarcastic or caustic commentary make the narrator or author conspicuous as a dominant external presence able to pierce the fictional world as they please; and thirdly, these remarks often reveal the readers' own beliefs or foibles in an unsparing and matter-of-fact fashion.

Eliot's position as 'vivisector' is underpinned by her fascination with emotional mechanisms, with how behaviour is triggered and shaped by the pressures of specific social conditions, and also with the manner in which feelings registered within and upon the bodies of the characters. The extent to which she 'opened up' the inner lives of her personages raised concerns about artistic propriety and purpose which echoed objections to the 'materialist and physiological methods' of French naturalists and realists.[64] For instance, complaints that 'the knife sometimes replaces the painter's brush', typically directed towards French writers, were also levelled at Eliot.[65] She criticised novels which dragged the reader 'through scene after scene of unmitigated vice'.[66] For example, although she praised Balzac's literary skill, she warned that not all subjects were fit for art.[67] Yet, she was also accused of exposing the reader to *too much,* and of

[62] [Unsigned], 'George Eliot's "Middlemarch"', p.1529.
[63] Menke, 'Fiction as Vivisection', p.634.
[64] [Unsigned], 'French Fiction of the Century', p.56.
[65] Ibid.
[66] George Eliot, 'The Morality of Wilhelm Meister', *Leader*, 6.278 (21 July 1855), 703.
[67] Ibid.

exceeding artistic limits.[68] In 1847, one of Balzac's critics warned that 'the excess of truth' is 'a very dangerous thing in literature'.[69] Thirty years later, the *London Quarterly Review* suggested that Eliot overanalysed; her personages are not 'devoid of life', the essayist wrote, '[b]ut have we not constantly the feeling of knowing too much about them?'[70] Another critic admired that her unusual powers of insight 'enabled her to deal with her characters pretty much as a surgeon does with the body he dissects'. However, he warned that 'in this subtle analytical way of dealing with phenomena she often transgressed the bounds of art [and] is in danger of trespassing upon the grounds of science'.[71]

Some commentators argued that her 'scientific' or surgical approach produced complex 'machines' rather than compelling characters. The *Literary World* opined that despite 'the works of their minds' being 'laid bare for our inspection, we can never find in them the human soul which ours would hold communion'. This, it proposed, is because 'she would have us view human nature from within, not from without'.[72] Echoing this sentiment, the *Westminster Review* declared that the experimental essay collection *Impressions of Theophrastus Such* (1879) was the product of 'a pathological theatre' rather than 'the artist's studio' in which her earlier (better) works were written. Eliot, this critic warned, 'has taken to the scalpel instead of the brush, and has made men as "interesting cases", instead of human beings with claims on our admiration, our pity, or contempt'.[73] Worse still was when the 'case' didn't hold interest at all. Another reviewer for the middle-class paper the *Manchester Guardian* used vivisection to complain about Eliot's character construction, but this time took issue with her choice of subject matter and excessive focus on minutiae.[74] The reviewer, having asserted that *Theophrastus Such* contained tediously detailed and lengthy 'analyses of bores', frankly concluded: '[w]e do not wish to know the actuality and hidden springs of personality in a bore. Life is not long enough for that sort of research. One would sooner vivisect frogs'.[75] Time spent obsessing over 'dramatic molecules', he suggested, detracts from more 'noble work'.[76]

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68 Rignall, *Oxford Reader's Companion*, p.20.
69 Maron, 'Critique littéraire: Année 1847', p.28.
70 Marzials, 'George Eliot and Comtism', p.460.
71 John Mortimer, 'George Eliot as a Novelist', *Papers of the Manchester Literary Club*, 7 (24 January 1881), 116-28 (pp.125-26).
72 [Unsigned], 'Kingsley and George Eliot', *Literary World*, 17 (15 October 1886), 327-28 (p.327).
73 Browne, 'Theophrastus Such', p.189.
74 Edward Royle, 'Newspapers and Periodicals in Historical Research', in *Investigating Victorian Journalism*, ed. Laurel Brake, Aled Jones & Lionel Madden (London: Macmillan, 1990), pp.48-59 (p.53).
75 [Unsigned], [review of *Theophrastus Such*], *Manchester Guardian*, 2 June 1879, p.8.
76 Ibid.

Very similar concerns about Eliot's impulse to uncover and demonstrate the interior workings of her characters rather than depict their external animation were aired in reviews of *Daniel Deronda*. In relation to that work, the *New Quarterly Magazine* complained that she

> is too often tempted to kill her characters for the sake of their anatomy. A true artist, with the delight in beauty over-powering all other desires, would sooner keep the freshness of the flower unspoiled than perfect his knowledge of its intricate roots; but with George Eliot it is the root itself that is precious, and she is careless if the blossom fade so long as she is able to lay bare and make known the ways of its growth. Thus, it always happens in her work that the presentation of character is limited by her critical knowledge. The life that she imagines never outruns the control of her analysis, and therefore it never acquires any reflection of that sense of mystery which belongs to the life of the actual world.[77]

By attempting to vivisect the psychological and emotional mechanisms that govern human life, Eliot is in danger of eviscerating her characters. According to this passage her engagement with technical processes over artistic creation risks destroying rather than laying bare the 'real'. This is because reducing characters to 'interesting cases' means excluding non-material 'mysterious' dimensions of life which, ironically, would secure her personages as 'flesh-and-blood' beings with emotional and moral claims upon the reader.

The response to Eliot's style of 'literary vivisection', though remarkable in its intensity, was not an isolated one. Instead, it aligned with 'a larger critical reaction against the supposed encroachment of science on artistic techniques'.[78] James Wayne Geibel points out that in the 1870s and '80s, psychological characterisation became synonymous with intellectual characterisation and, therefore, with 'the application of an ancient dichotomy, the opposite of "intuitive" characterisation which was interested in the mysterious entity called life that is somehow beyond mere "analysis"'.[79] Similar discussions played out much earlier, and once more in relation to experimental physiology. In an 1857 essay discussing Charlotte Brontë's style, the *National Review* claimed that she became so 'possess[ed]' by the 'tyrannous action of the creative impulse' that she became 'more an instrument than a voluntary agent'.[80] This allusion to the curious combination of detachment and absorption – of passive conduit and active, if unconsciously moved, 'instrument', so often deemed quintessentially 'vivisectional' – set up the analogy. The reviewer praised various aspects of Brontë's style but argued that,

> [t]rue perception of character seems to be something intuitive. It requires, at any rate, a nature of very extended though not necessarily deep sympathies, which finds something in itself answering to all hints, and ready to gather up all clues. Miss Brontë had nothing of this. She studies the manifestations, the workings of character; and it is these alone, for the

[77] [Unsigned], 'Daniel Deronda' [review], p.248.
[78] James Wayne Geibel, 'An Annotated Bibliography of British Criticism of George Eliot, 1858-1900' (unpublished doctoral thesis, Ohio State University, 1969), p.18.
[79] Ibid.
[80] [William Caldwell Roscoe], 'Miss Bronte', *National Review* 5.9 (July 1857), 127-64 (p.154).

> most part, that she is enabled to reproduce. She does this with all her might. In *Shirley*, for instance, with intent and resolute eyes she sits gazing into the human heart. Darkness shades its penetralia; but her keen vision *shall* pierce the veil; she *will* compel its secrets to the light. She reads as if she set the characters in her story down before her, and set herself, not to develop them, but to write down what she sees in them. It is not a creation, but a vivisection.[81]

Brontë's piercing of the heart's innermost recesses is a pleasing 'anatomical process' and the reviewer admits to being fascinated by 'the mode in which [characters] display themselves under particular circumstances'.[82] However, the method again produces personages lacking in roundness and realism. Brontë's authorial role is not creative in the usual sense because she does not seek to 'develop' characters but only to analyse and record their 'manifestations' and 'workings'. Her 'vivisectional' approach cannot embrace intuition founded upon nebulous 'hints' and 'clues', and gathered up by a broad, sympathetic, and painterly gaze. Like Eliot, her artificial and mechanical personages lack real interest. 'Do any of us really care much', the reviewer inquires, 'for that little elfish Jane or that ugly muscular Sultan Rochester',

> Should we not flee from Lucy Snowe and the little Professor? Are we not all very much surprised at the Cambridge student who wrote to Currer Bell, and begged to be allowed to consider Jane Eyre and Shirley Keeldar as his sisters?[83]

Once more, this time in relation to Brontë, Thackeray is presented as a more natural 'operator'; according to Peter Bayne, *he* would have performed 'a faultless masterpiece of moral vivisection' upon Rochester with 'unique felicity'.[84] The 'lively details', 'stirring events', and 'clash[es] of passions' in Brontë's novels cannot make up for her alienation of reader's sympathies.[85]

In 1907, G. K. Chesterton held Lewes's 'dreadful influence' (the same that mutilated Eliot's later novels) responsible for deforming Brontë's literary style.[86] Having read *Jane Eyre* (1847), Lewes, whom Chesterton colourfully described as leading a zealous 'race of rationalists' and 'a man who represented the very worst elements in mid-Victorian England', advised Brontë to avoid melodrama.[87] Chesterton claimed that she took this to heart and, having once represented 'the supreme central point of Romanticism', became preoccupied with realism.[88] Certainly, Lewes insisted that attention to minute psychological and emotional processes was necessary to create fiction based 'upon psychological laws'.[89] His position was diametrically opposed to that voiced by

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[81] Ibid. [emphasis in original].
[82] Ibid., p.153.
[83] Ibid., p.154.
[84] Peter Bayne, 'Thackeray's Moral Analysis', *Literary World*, 21 (1880), 392.
[85] [Roscoe], 'Miss Bronte', p.154.
[86] G. K. Chesterton, 'Charlotte Brontë and the Realists', *Brontë Society Transaction*, 4.16 (1907), 6-11 (p.10).
[87] Ibid., p.7.
[88] Ibid., p.10.
[89] G. H. Lewes, 'The Principles of Success in Literature', *Fortnightly Review*, 1 (1865), 572-89 (p.86).

the *Quarterly Review* in an 1879 essay on *Daniel Deronda*. Therein, the essayist asserted that Eliot made 'an incalculable mistake in art' by sacrificing action and manners to psychological and metaphysical study because '[n]o man knows with certainty any other consciousness than his own'.[90] Nonetheless, like Zola, Lewes believed that literature and art could report objectively on the emotions and thoughts of others, and that authors could 'vivisect[] consciousness'.[91] Both men agreed that observation alone was insufficient, and that the author needed to construct and test a hypothesis to 'fill[] up the gaps'.[92] Therefore, the writer must construct complex imaginary psychologies and analyse their workings within specially selected social conditions.

Eliot and Lewes both defined their approach to characterisation against that of Charles Dickens. In 'The Natural History of German Life' (July 1857), Eliot obliquely referred to Dickens when she wrote of 'one great novelist who is gifted with the utmost power of rendering the external traits of our town population' and who would greatly awaken social sympathies if he could depict psychological character.[93] She continued to be dissatisfied with the presentation of character through manners or idioms, even when these were figured more realistically than Dickens's sentimental peasantry.[94] Lewes also considered the problem of characterisation and caricature in 'Dickens in Relation to Criticism' (1872). The essay praises Dickens's imagination, but criticises the psychological facet of his characterisation by comparing Micawber of *Bleak House* (1853) to a pithed frog exhibiting reflex action during a vivisection. 'When one thinks of Micawber', he writes,

> always presenting himself in the same situation, moved with the same springs, and uttering the same sounds, always confident on something turning up, always crushed and rebounding, always making punch […] one is reminded of the frogs whose brains have been taken out for physiological purposes, and whose actions henceforth want the distinctive peculiarity of organic action, that of fluctuating spontaneity. Place one of these brainless frogs on his back, and he will at once recover the sitting posture; draw a leg from under him, and he will draw it back again; tickle or prick him and he will push away the object, or take *one* hop out of the way; stroke his back, and he will utter *one* croak, may or may not hop away. All of these things resemble the actions of the unmutilated frog, but they differ in being *isolated* actions, and *always the same*: they are as uniform and calculable as the movements of a machine. […] It is this complexity of the organism which Dickens wholly fails to conceive; his characters have nothing flexible and incalculable in them.[95]

Although Lewes does not name Eliot, Dickens's literary shortcomings are, notably, her strengths. Whereas '[t]hought is strangely absent' in his novels, she is talented at making 'thoughtful remark[s]

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[90] [Unsigned], 'The Reflection of English Character in English Art', *Quarterly Review*, 147 (1879), 81-112 (p.100).
[91] Menke, 'Fiction as Vivisection', p.619, p.623; G. H. Lewes, *Problems of Life and Mind: Study of Psychology Its Object, Scope, and Method* (Boston: Houghton, 1879), pp.81-112.
[92] Lewes, *Problems of Life and Mind: Study of Psychology*, p.99.
[93] [George Eliot], 'The Natural History of German Life', *Westminster Review*, 19 (1856), 51-56 (p.55).
[94] Rignell, *Oxford Reader's Companion*, p.92.
[95] G. H. Lewes, 'Dickens in Relation to Criticism', *Fortnightly Review*, 17 (1872), 141-52 (pp.148-49) [emphasis in original].

on life and character'.[96] Whereas his personages lack 'fluctuating spontaneity', hers are rarely fixed. Critics like E. M. Forster have continued to level this criticism at Dickens, unfavourably comparing the 'merely repetitive pleasure' that his 'flat characters' lacking in 'human depth' elicit, to the 'extended life' of Jane Austen's creations.[97] As John Rignall notes, especially in *Middlemarch*, 'Eliot questions the idea of character as a stable entity', and characters respond in unexpected ways (such as Mrs Glegg's sympathy with Maggie when she returns from the ill-fated boat trip with Stephen Guest).[98] As Farebrother remarks, 'character is not cut in marble – it is not something solid and unalterable. It is something living and changing' (725). By alluding to Eliot as a vivisector, Lewes justified her detailed focus on internal life and her understanding of the intricacy and unpredictability of the human psyche: 'when Dickens creates characters, he creates brainless amphibians; when George Eliot creates characters, she performs a different, apparently more successful operation'.[99] Although Lewes never intended to insult Dickens, many found the analogy peculiar, if not offensive.[100] The backlash, combined with the demands of *Problems of Life and Mind* (1873), may have hastened his shift towards scientific study.[101] This was his last original work of literary criticism.

Eliot took an interest in Lewes's vivisections, many of which involved decerebrating frogs and probing the differences between reflexes and purposive movement, unconscious and conscious behaviour.[102] In the summer of 1855, she mentioned in a letter to Charles Bray that they were rearing tadpoles for vivisection.[103] More than a decade later, in a letter to Bray's wife, Cara – Eliot's close friend and fellow writer – she wrote the following postscript: <'Froggie continues to do better than even he expected without his head *brain* [sic] for months. He dies of starvation at last'>.[104] As Angelique Richardson has shown, Eliot often wrote about her and Lewes's animal encounters in 'charmingly anthropomorphic language' and in a manner suggesting 'an ease with human-animal kinship'.[105] In Froggie's case, however, she appeared to regret the playful tone. The postscript, framed as if reporting on the health of a family member or friend, is over-scored 'as if', Menke ventures, 'denial or omission had triumphed over facetiousness'.[106] The recipient's sensibilities might have prompted this retrospective unease; Cara Bray was active in the RSPCA

[96] Ibid., p.144.
[97] See E. M. Forster, *Aspects of the Novel* (New York: Harcourt, Brace & Co., 1927), pp.144-45, pp.108-09.
[98] Rignell, *Oxford Reader's Companion*, p.50.
[99] Menke, 'Fiction as Vivisection', p.618.
[100] Ibid., p.617.
[101] Ibid., p.618.
[102] *RRCV1*, p.312.
[103] George Eliot, [Letter to Charles Bray 17 June 1855], in *The George Eliot Letters*, II, 202.
[104] George Eliot, [Letter to Cara Bray 1867], in *The George Eliot Letters*, IV, 405.
[105] Richardson, 'George Eliot, G. H. Lewes, and Darwin', p.139.
[106] Menke, 'Fiction as Vivisection', p.622.

(to which Eliot also contributed in 1874), and by the time of writing had already published *Our Duty to Animals* (1871) in *Animal World*.[107]

Eliot's stance on the vivisection question became more apparent after Lewes's death. She honoured his memory with a generous studentship which would fund research at Cambridge University for a period of three years. The recipient would be granted full laboratory access – a privilege that Lewes had rarely enjoyed. Around the mid-century a shift had taken place, from the home-based gentleman-scientist to the professional who worked in a specialised place (such as a laboratory).[108] In the unusual position of being an unaffiliated private experimenter, Lewes usually vivisected animals on the lower floor of the home he and Eliot shared while she worked on her novels upstairs. Occasionally, domestic and scientific spheres overlapped. Lord Morley, a regular dinner-guest in the 1860s and '70s, was more than once horrified to 'meet[] in the hall, or on the stairs, some poor animal limping about in a mutilated state'.[109] Although Lewes restricted himself to frogs (save for the odd pigeon, newt, or rabbit), antivivisectionists found the notion of an amateur physiologist working from home, and the discovery of a half-vivisected animal where one might expect to find a beloved pet, utterly appalling. In a short article titled 'Romance and Reality' (1927), the *Abolitionist* sententiously demanded: '[d]id George Eliot's pen never falter, as she wrote romances to the tune of those "distressing cries" in the basement, which no doubt sometimes penetrated the ceilings and reached the writer's sanctum?'.[110] Instead of lingering at the liminal spaces of the hall and the stairs, the article imagines the creatures within a makeshift laboratory in the basement. Nonetheless, their cries theatrically 'penetrate' the lofty, romanticised space of the 'writer's study' though never pricking the consciousness of the lady-novelist therein. It balks at their domestic arrangement not because of their unconventional relationship, but because the very idea of literary and laboratory labour taking place under one roof, let alone a romantic union of a novelist and a vivisector, challenged core beliefs about the utter incompatibility of these figures and pursuits. As the number of reviews describing Eliot as a vivisector indicate, antivivisectionists were not alone in wishing to keep these worlds separate.

Yet, to many, the encroachment of vivisection into the literary sphere was, regrettably, inevitable and already well underway. An essay published in the *Quarterly Review* (1890) claimed that Balzac, 'did not so much invent as apply a method which was destined to prevail in literature as soon as it had become dominant in science – the method, we mean, of dissection and

[107] Feuerstein, *The Political Lives of Victorian Animals,* p.127; George Eliot, [Letter], in *The George Eliot Letters*, VI, 62.
[108] Boddice, *The Science of Sympathy,* p.85.
[109] F. W. Hirst, *Early Life & Letters of John Morley*, 2 vols (London: Macmillan & Co., 1927), I, 41.
[110] [Unsigned], 'Romance and Reality', *Abolitionist*, 12.28 (1 April 1927), 41-52 (p.45).

vivisection'.[111] Indeed, the preface to *La Comédie Humaine* [*The Human Comedy*, 1842], already signalled the growing alignment between writer and physiologist. Zola praised Balzac along with Stendhal for introducing 'the new formula': 'they made the inquiry with the novel that the savants made with science. They no longer imagined nor told pretty stories. Their task was to take man and dissect him, to analyse him in his flesh and in his brain'.[112] Despite acknowledging the groundwork laid by earlier practitioners, Zola maintained that 'la méthode expérimentale' was unique to naturalism and he used it to forward principles of impersonal objectivity and authorial effacement.

Zola and Strindberg: experimental absence

In his essay *Le Roman expérimental* [*The Experimental Novel*, 1880], Zola connected 'the experimental novel' with experimental physiology and modelled his approach on that of a famous vivisector. 'I really only need to adapt', he writes,

> for the experimental method has been established with strength and marvellous clearness by Claude Bernard in his 'Introduction à l'étude de la médecine expérimentale.' This work, by a savant whose authority is unquestioned, will serve me as a solid foundation. I shall here find the whole question treated, and I shall restrict myself to irrefutable arguments and to giving the quotations which may seem necessary to me. This will then be but a compiling of texts, as I intend on all points to intrench myself behind Claude Bernard.[113]

'I cannot repeat too often enough', he later asserts, 'that I take all my arguments from Claude Bernard's work'.[114] Indeed, scholars have identified more than fifty substantial quotations as well as shorter phrases and words such as 'experiment', 'determinism', 'milieu', 'hypothesis', and 'doubt'

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[111] [William Francis Barry], 'Realism and decadence in French fiction', *Quarterly Review*, 171.341 (July 1890), 57-90 (p.57).

[112] Émile Zola, 'Naturalism on the Stage', in *The Experimental Novel and other Essays*, trans. Belle M. Sherman (New York: Cassell Publishing, 1893), pp.109-57 (p.121); Émile Zola, 'Le Naturalisme au Théâtre', in *Le Roman Expérimental* (Paris: Charpentier, 1880), pp.109-56. Original: 'la nouvelle formule que Balzac et Stendhal apportaient. Ils faisaient par le roman l'enquête que les savants faisaient par la science. Ils n'imaginaient plus, ils ne contaient plus. Leur besogne consistait à prendre l'homme, à le disséquer, à l'analyser dans sa chair et dans son cerveau' (p.121). Subsequent references will be made to these editions.

[113] Émile Zola, 'The Experimental Novel', in *The Experimental Novel and other Essays*, trans. Belle M. Sherman (New York: Cassell Publishing, 1893), pp.1-54 (p.1); Émile Zola, 'Le Roman Expérimental', in *Le Roman Expérimental* (Paris: Charpentier, 1880), pp.1-53. Original: 'Je n'aurai à faire ici qu'un travail d'adaptation, car la méthode expérimentale a été établie avec une force et une claret merveilleuse par Claude Bernard, dans son Introduction à l'étude de la médecine expérimentale. Ce livre, d'un savant dont l'autorité est décisive, va me server de base solide. Je trouverai là toute la question traitée, et je me bornerai, comme arguments irréfutables, à donner les citations qui me seront nécessaires. Ce ne sera donc qu'une compilation de textes; car je compte, sur tous les points, me retrancher derrière Claude Bernard' (pp.1-2).

[114] Zola, 'The Experimental Novel', p.17; Zola, *Le Roman Expérimental*. Original 'Je ne saurais trop répéter que je prends tous mes arguments dans Claude Bernard' (pp.15-16).

which Zola plucked from Bernard's seminal text.[115] Despite this striking connection, Zola's interest in experimental physiology has often been subsumed into broader categories such as natural science, biology, and medicine. Oddly, even scholars like David Baguley and John Bender who note Zola's fascination with Bernard and with experimentation, do not make the connection with vivisection explicit. For instance, Bender recognises that, for Zola, 'the experimental method' which could 'reveal the inner workings of living beings interacting in society' was superior to 'analytic medicine [which] has to deal with individuals, and largely with dead ones'.[116] However, his conclusion that '[i]n doing so, he merges novelistic fiction with the natural sciences and philosophy' misses the mark.[117] Partly because of naturalism's interest in the role of heredity and environment on human behaviour, scholarly focus has been directed towards methods of minute observation rather than experiment. As Domenico Bertoloni Meli points out,

> on the one hand, vivisection appears as the archetypal interventionist experimental technique; on the other, some experiments were associated with careful observation […] observation intersects a variety of other techniques of investigation, including a quintessentially interventionist one like vivisection.[118]

As large parts of this thesis have shown, both in contemporary scientific literature and in artistic representations, vivisection was presented as a mode of looking and a state of mind as much as a set of actions. Once contemporary animal research is restored as a key influence upon the naturalist tradition, it becomes apparent that such is the case in this context too.

Two main factors explain the lack of scholarship interrogating Zola's engagement with vivisection and, more broadly, the connection between physiological experimentation and naturalism. Firstly, the fact that Zola forwarded an interrogative mode based on detachment from, rather than contact with his 'subject' or characters, is counter to the prevailing image summoned by vivisection. Secondly, many scholars attribute Zola's engagement with Bernard to a desire to 'harness the physiologist's prestige to lend scientific and topical dignity to his work'.[119] If Zola's primary goal was to appropriate the cultural capital of laboratory science – whether in the guise of passionate experimentation or under the 'cloak of scientific neutrality' – methodological details are not hugely relevant.[120] However, this argument relies on a rudimentary picture of the nineteenth century as a 'period […] exceptionally favourable to science' in which the vivisection controversy

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[115] David Baguley, *Naturalist Fiction: The Entropic Vision* (Cambridge: Cambridge UP), p.61; Fiorenzo Conti, and Silvana Irrera Conti, 'On Science and Literature: A Lesson from the Bernard-Zola Case', *BioScience*, 53.9 (2003), 865-69 (p.866).
[116] John Bender, 'Novel Knowledge: Judgement, Experience, Experiment', in *This is Enlightenment*, ed. Clifford Siskin and William Warner (Chicago: University of Chicago Press, 2010), pp.284-300 (p.285).
[117] Ibid.
[118] Domenico Bertoloni Meli, 'Early Modern Experimentation on Live Animals', *Journal of the History of* Biology, 46.2 (2012), 199-226 (p.222).
[119] Conti and Conti, 'On Science and Literature', p.868.
[120] David Baguley (ed.), 'Introduction: Zola and His Critics', *Critical Essays on Emile Zola* (Boston: G. K. Hall & Co., 1986), pp.1-24 (p.2).

is obscured.[121] The connection to Bernard – Europe's most notable proponent of live experimentation – would certainly not have imbued naturalism with straightforwardly positive connotations. Recognising this, and also noting that 'Bernard's strong association with vivisection was of key significance to Zola's choice of model', Ana Oancea instead suggests that the vivisection controversy provided 'a ready-made equivalent for the *negative* reception of Naturalism'.[122] However, issues of reception whether positive or negative cannot account for the extent to which Zola referred, and deferred, to Bernard.

Frustrated efforts to pin down the relationship of Bernard's *Introduction à l'étude de la médecine expérimentale* (1865) to Zola's *Le Roman expérimental* have been made since the latter's publication. The naturalist Henry Céard, who claimed (improbably) to have lent Zola a copy of Bernard's work 'for the very purpose of warning him against the dangers of applying the experimental method to literature', was one of the first to criticise the dubious uses to which it was put.[123] Some critics since have illustrated the difficulties of applying physiological principles to literature.[124] Others deny that literary experimentation along scientific lines is even possible because fiction-writing is inherently subjective.[125] René Wellek points out that focusing on the Zola-Bernard connection obscures the stylistic features of *Le Roman expérimental*. He argues that Zola's references to Bernard were a 'device' designed 'to cloak his theories with the prestige of contemporary science'. For reasons discussed above, Wellek's conclusion is unpersuasive. Yet, his point that Zola's essay invites a figurative reading is sound.[126] Despite Irving Howe's description of 'the turgid mimicry with which Zola transposed the physiological theories of Dr Claude Bernard', Baguley notes that, 'in the space between the substratum of Zola's own discourse and the citational superstratum derived directly from Claude Bernard, the novelist indirectly preserves the integrity of his own more flexible views'.[127] The recurrent interpolations create a curious tension; they at once support Zola's claim that scientific principles could be directly applied to literature, while also drawing attention to the grafting process:

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121 Conti and Conti 'On Science and Literature', p.868.
122 Ana Oancea, 'Literature and Vivisection: re-evaluating Émile Zola's interpretation of Claude Bernard', *Neohelicon* 45 (2018), 671-87 (pp.671-72) [emphasis added]
123 Baguley, *Naturalist Fiction*, p.32, p.58.
124 Ibid., p.58, p.46, p.5; Edwin M. Eigner and George J. Worth, 'Introductory Essay', *Victorian Criticism of the Novel*. ed. Edwin M. Eigner and George J. Worth (Cambridge: Cambridge UP, 1985), pp.1-19 (p.13); Arthur Symons, 'A Note on Zola's Method', in *The Symbolist Movement in Literature* (New York: E. P. Dutton & Co., 1919), pp.162-79.
125 See for example Hans Magnus Enzenberger, 'The Aporias of the Avant-Garde', in *The Consciousness Industry: On Literature, Politics and the Media,* ed. Michael Roloff (New York: Seabury Press, 1974), pp.16-41 (p.35); Theodor W. Adorno, *Aesthetic Theory*, trans. Robert Hullot Kentor, ed. Gretel Adorno and Rolf Tiedemann (Minneapolis: University of Minnesota Press, 1997), p.37.
126 René Wellek, *A History of Modern Criticism: 1750-1950. Vol IV. The Later Nineteenth-Century* (Yale: Yale UP, 1965), p.14.
127 Irving Howe, 'Zola: The Poetry of Naturalism', in *Critical Essays on Emile Zola*, ed. David Baguley (Boston: G. K. Hall & Co., 1986), pp.111-23 (p.112); Baguley, *Naturalist Fiction*, p.61.

> The borrowings become to some degree a part of the main argument but can never be totally integrated. They remain by virtue of the patent signs of their otherness (the inverted commas, the different style), the discourse of another, belonging to an alien (con)text.[128]

The citations create an illusion of straightforward imitation behind which lies a swirling indeterminacy between literary and scientific language which, in turn, creates more space for Zola's analogy between writing and vivisection.

Zola's configuration of the naturalist novel or theatre sets the stage for his understanding of literary vivisection. Oancea writes that he envisions

> a laboratory in which the causes of social ills can be identified through the use of fictional humans modelled on those populating the shared reality of the nineteenth century. Results are obtained through experimentation, in its Bernardian sense of intervention in a specific environment, in the form of the plot.[129]

This description implies a more invasive and involved model of authorship than Zola himself advocated. Oancea identifies plot as his mode of 'intervention', but in his manifesto 'Le Naturalisme au théâtre' ['Naturalism on the Stage', 1880] Zola presented the writer's role in more detached terms:

> Instead of imagining an adventure, of complicating it, of arranging stage effects, which scene by scene will lead to a final conclusion, you simply take the life study of a person or a group of persons, whose actions you faithfully depict. The work becomes a report, nothing more.[130]

Because the aim was to establish 'the conditions necessary for the manifestation of this phenomenon', the writer's responsibility was to determine a hypothesis, carefully construct a realistic social world, and select the stimuli.[131] Thereafter, he must resist intervention and, observing at a disciplined distance, carefully record the results. One must accept nature 'as it is', Zola writes, and trust that 'it is grand enough, beautiful enough to supply its own beginning, its middle, and its end'.[132] In other words, the phenomena create the story – not the writer.

Although *Le Roman expérimental* emphasises the radical and transformative power of the 'experimental method', the essay 'lacks any detailed explanation of how a scientific methodology

[128] Baguley, *Naturalist Fiction*, p.61.
[129] Oancea, 'Literature and Vivisection', p.674.
[130] Zola, 'Naturalism on the Stage', p.124; Zola, 'Le Naturalisme au Théâtre'. Original: 'Au lieu d'imaginer une aventure, de la compliquée, de ménager des coups de théâtre qui, de scène en scène, la conduisent à une conclusion finale, on prend simplement dans la vie histoire d'un être ou d'un groupe d'êtres, dont on enregistre les actes fidèlement. L'œuvre devient un procès verbal, rien de plus' (p.124).
[131] Zola, *The Experimental Novel*, p.3; Zola, 'Le Roman Expérimental'. Original: 'à déterminer les conditions nécessaires à la manifestation de ce phénomène' (p.3).
[132] Zola, 'Naturalism on the Stage', p.124; Zola, 'Le Naturalisme au Théâtre'. Original: 'il faut l'accepter telle qu'elle est, sans la modifier ni la rogner en rien ; elle est assez belle, assez grande, pour apporter avec elle un commencement, un milieu et une fin' (p.124).

might actually be applied to form and style'.[133] The preface to the second edition of Zola's *Thérèse Raquin* [*Thérèse Raquin: A Realistic Novel*, 1867] provides a fuller picture. He set out to study temperaments not characters, and the protagonists, Thérèse and Laurent, are tellingly described as *corps vivants*.[134] Thrusting his materialist and determinist creed to the fore, Zola states that he has 'selected personages sovereignly dominated by their nerves and their blood, destitute of free will, led at each act of their life by the fatalities of their flesh'.[135] Driven by instinct alone, these *brutes humaine* exist in the stranglehold of destiny. By presenting the characters in this manner, and by describing *Thérèse Raquin* as a scientific report or textbook – each chapter a 'study of a curious case of physiology' – Zola figures himself as a literary vivisector.[136] The manner in which physiology embraced graphic recording technologies and techno-representations to mediate the animal's interiority, also sheds light upon naturalism's mode. Writing about the use of these technologies, Otniel Dror comments that these machines seemed to uniquely integrate seemingly contradictory cultural elements since,

> a detached and machinist mode of production […] provided intimate and private knowledge. The representations displaced emotions from the privacy of the mind to the communal space of representation, from personal experience to scientific knowledge, and from the subjective to the objective.[137]

As Dror explains, the new representations of emotions that graphic recording machines produced created 'a paradoxical tension' because,

> while the images and their production process signalled the modern project of rationalizing emotions, the findings of the new science challenged the position of the modern subject as an isolated bastion of rational thought. The discovery that the mind was constantly barraged by emotions – visible as bleeps, shifting dials, and fluctuating curves – encouraged, at the very heart of the new experimental sciences, alternative modes of modernist thought.[138]

Like a vivisector studying the science of the emotions, the naturalist writer adopts a dispassionate attitude in order to accurately expose the intimate lives of others to the public gaze.[139] By becoming absorbed and detached, he can even be configured as the mechanism by which the 'import' of the text's inhabitants are exactly communicated and represented. Ideally, the author's consciousness is

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[133] Kenneth Pickering and Jayne Thompson, *Naturalism in the Theatre, Its development and legacy* (New York, Palgrave Macmillan, 2013), p.16; David Baguley, *Naturalist Fiction*, p.46.
[134] Émile Zola, *Thérèse Raquin: A Realistic Novel* (London: Viztelly & Co., 1887), p.vi; Émile Zola, *Thérèse Raquin* (Paris: A. Lacroix, Verboeckhoven & Co., 1868). Original: 'j'ai voulu étudier des tempéraments et non des caractères' (p.iii). Subsequent references will be made to these editions.
[135] Zola, *Thérèse Raquin*, p.vi; Original: J'ai choisi des personnages souverainement dominés par leurs nerfs et leur sang, dépourvus de libre arbitre, entrantes à chaque acte de leur vie par les fatalités de leur chair' (p.iii).
[136] Zola, *Thérèse Raquin*, vii; Original: 'chaque chapitre est l'étude d'un cas curieux de physiologie' (p.iii).
[137] Dror, 'The Scientific Image of Emotion', p.392.
[138] Ibid., p.401.
[139] Michael Robinson, 'Introduction' in *Selected Essays by August Strindberg*, ed. & trans. Michael Robinson (Cambridge: Cambridge UP, 1996), pp.1-22 (p.13).

bypassed; his text is produced mechanically and he marks the sheet of paper as a kymograph or myograph's needle traces the action of the animal subject. Both the physiological and the literary laboratory are figured as sites of automatic writing seeking to represent moment by moment emotions and thoughts as they ripple through the mind. Thus, Zola forwarded a scientised, modernist fantasy of the self-creating, 'natural' text.

He fleshed out his fantasy of mechanical literary production and justified *Thérèse Raquin*'s bleak plotline by modelling the attitude and actions of the ideal naturalist writer (in this case, himself) upon Bernard's ideal vivisector. The unrelenting psychological torture of the protagonists disturbed readers and critics. But, in the preface Zola unapologetically asserted that he had 'simply undertaken on two living bodies the analytical work which surgeons perform on corpses', and that he had written even the most passionate scenes with the sole curiosity of a scientific researcher engrossed in the search for truth.[140] He added,

> I find myself in the same position as those painters who copy the nude, without the least desire being kindled within them, and who are profoundly surprised when a critic declares himself scandalised by the life-like flesh of their work. While engaged in writing 'Thérèse Raquin', I forgot the world, I became lost in the minute and exact copy of life, giving myself up entirely to the analysis of the human mechanism.[141]

Although Zola's description of himself as a painter seems to complicate his scientific persona, contemporary physiologists often employed metaphors of artistry to describe their feelings (or lack thereof) while carrying out vivisections. Consider, for instance, Élie de Cyon's declaration, previously alluded to, that the 'sensation of the physiologist' while performing a delicate procedure 'has much in common with that which inspires a sculptor, when he shapes forth fair living forms from a shapeless mass of marble'.[142] Bernard's description of the exemplary attitude towards experimental animals also resounds throughout Zola's account of complete intellectual engrossment coupled with absolute emotional detachment. As the physiologist infamously wrote, the true scientist is so 'possessed and absorbed by the scientific idea that he pursues' that he 'does not hear the cries of the animals' nor 'see[s] their flowing blood. He sees nothing but his idea'.[143] Likewise, Zola becomes utterly 'lost' in his work, and later, 'forgot himself amidst human putrification' like 'a doctor forgets himself in the dissecting room'.[144] Similar language is used to

[140] Zola, *Thérèse Raquin*, p.vii, p.ix; Original : 'J'ai simplement fait sur deux corps vivants le travail analytique que les chirurgiens font sur des cadavres […]tout entier encore aux graves jouissances de la recherche du vrai' (p.iii).
[141] Zola, *Thérèse Raquin*, p.vii; Original : Je me suis trouvé dans le cas de ces peintres qui copient des nudités, sans qu'un seul désir les effleure, et qui restent profondément surpris lorsqu'un critique se déclare scandalisé par les chairs vivantes de leur œuvre. Tant que j'ai écrit *Thérèse Raquin*, j'ai oublié le monde, je me suis perdu dans la copie exacte et minutieuse de la vie, me donnant tout entier à l'analyse du mécanisme humain' (pp.iii-iv).
[142] Cyon quoted in Frances Power Cobbe, 'Vivisection and its Two-faced Advocates', p.611.
[143] Bernard, *An Introduction to the Study of Experimental Medicine*, p.132.
[144] Zola, *Thérèse Raquin*, viii; Original: 'qui a pu s'oublier dans la pourriture humaine, mais qui s'y est oublié comme un médicin s'oublie dans un amphithéâtre' (p.iv).

emphasise the 'moral impersonality' of naturalist novels and plays. In order to uncover and convey truth, the writer must withdraw from himself as much as from his subject: '[h]e himself disappears, he keeps his emotion well in hand, he simply shows what he has seen'.[145]

Sacrificing personal feelings in the pursuit of truth is another way in which Zola aligned naturalism and physiology. Like Cyon, who reflected on how 'distant' feelings of cruelty or compassion were from the impetus to vivisect, Zola tried to dissociate naturalist writing from unpalatable forms of gratification, and even from personal motives altogether.[146] Again, he exploited the triumphalist rhetoric and reasoning typical of contemporary vivisectors to frame naturalism's quest, grandly announcing: '[i]nvestigation is a duty. We have the method; we should go forward, even if a whole lifetime of effort ends but in the conquest of a small particle of the truth. Look at physiology'.[147] Bernard confesses only to his fixation on the 'idea' and the 'problem he is seeking to resolve', Cyon to finding 'keen moral satisfaction when [...] he at last discovers some new function', and Zola to an intellectual 'pleasure in stating certain problems [...] and solving them'.[148] By echoing pro-vivisection arguments and tropes, and by exalting method above all else, Zola sought to liberate literature from the constraints of propriety; the objective search for truth, as typified by the scalpel in the hands of a focused experimenter, justified even the most grotesque disfigurements of the 'subject' upon the figurative operating table.

'Le Naturalism au théâtre' forwarded familiar principles fit for the scientific age. Unsurprisingly, Zola targeted the excesses of melodrama and sensation theatre, urging modern dramatists to strip away artificial effects, picturesque costumes, and contrived formats. Instead, he called for playwrights to present 'a man of flesh and bones on the stage, taken from reality, scientifically analysed, without one lie'.[149] Drama, he argued, should exclude non-physical (i.e. supernatural or spiritual) possibilities and foreground psychological and physiological studies of human-subjects belonging to a range of classes, locations, and occupations in everyday, contemporary, and realistic environments. Nineteenth-century naturalist plays often contained an

[145] Zola, 'Naturalism on the Stage', p.126, p.125; Zola, 'Le Naturalisme au Théâtre'. Original: 'Il disparaît donc, il garde pour lui son émotion, il expose simplement ce qu'il a vu' (p.125).
[146] Elie de Cyon, 'The Anti-Vivisectionist Agitation', p.505.
[147] Zola, 'The Experimental Novel', p.18; Zola, *Le Roman Expérimental*. Original: 'l'investigation est un devoir. Nous avons la méthode, nous devons aller en avant, si même une vie entière d'efforts n'aboutissait qu'à la conquête d'une parcelle de vérité' (p.17).
[148] Bernard, *An Introduction to the Study of Experimental Medicine*, p.132; Cyon, 'The Anti-Vivisectionist Agitation', p.503. Zola, *Thérèse Raquin*, vi-vii; Original: 'je me suis plus à me poser et à résoudre certains problèmes' (p.iii).
[149] Zola, 'Naturalism on the Stage', pp.143; Zola, 'Le Naturalisme au Théâtre'. Original: 'J'attends qu'on plante debout au théâtre des hommes en chair et en os, pris dans la réalité et analysés scientifiquement, sans un mensonge' (p.142); Dan Rebellato, 'Introduction: Naturalism and Symbolism: Early Modernist Practice', in *Routledge Drama Anthology and Sourcebook: From Modernism to Contemporary Performance*, ed. Maggie Gale and John Deeney (Abingdon: Routledge, 2010), pp.6-25 (pp.11-12).

eclectic mix of various (pseudo)scientific theories, but surgical experimentation was a dominant trope.[150] Tiffany Watt-Smith remarks,

> If the dissection of corpses in the anatomy theatres of the seventeenth century had proved a popular spectacle for the curious public, the late nineteenth-century naturalistic drama turned the older medical shows on their head, staging an ersatz living anatomy – or vivisection – before an audience.[151]

A 'live-act' element, plus the collective reactivity of the audience presented new dimensions for the analogy between scientific and artistic performance.[152]

In 1887, André Antoine established the Théâtre Libre, 'perhaps the first independent experimental theatre company in the modern world', to dramatize *Thérèse Raquin*.[153] As well as garnering a Parisian following, Zola's influence extended throughout Europe where he inspired works in conscious imitation of his own.[154] One notable follower was the Swedish playwright August Strindberg. Exploring how Strindberg developed the association between naturalist drama and vivisection illuminates the importance of the analogy beyond the Médan school. Although keen to be staged in Paris, Strindberg sought to establish his own Scandinavian Experimental Theatre, even promoting the idea that his supporters provide him a 'Laboratoire Libre'.[155] The same year that the Théâtre Libre was founded, he composed *Fadren* [*The Father*, 1887] 'with an eye to the experimental formula' and sent it to Zola. Undiscouraged by the reply that his characters lacked 'a complete social identity' and failed to convey 'the complete sense of life', Strindberg persevered with *Fröken Julie* [*Miss Julie: A Naturalist Tragedy*, 1889].[156] The play's preface echoed 'Le Naturalism au théâtre', and Strindberg's following essay, 'Om modernt drama och modern teater' ['On Modern Drama and the Modern Theatre', 1889], embraced *Thérèse Raquin* as 'the first milestone of Naturalist drama' and reiterated Zola's criticism of the degenerate Romantic stage as merely 'a place of amusement'.[157] Strikingly, Strindberg also used the vivisector as a model for the playwright. For instance, he venerated Molière for abandoning spectacle and ensuring that 'the alterations in a character's inner life became so central that the wonderful vivisection of Tartuffe

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[150] Amy Strahler Holzapfel, 'Strindberg as Vivisector: Physiology, Pathology, and Anti-Mimesis in The Father and Miss Julie', *Modern Drama*, 51.3 (2008), 329-52 (p.344).
[151] Watt-Smith, *On Flinching*, p.104.
[152] See Martin Willis (ed.), *Staging Science: Scientific Performance on Street, Stage and Screen* (London: Palgrave, 2016).
[153] Rebellato, 'Introduction: Naturalism and Symbolism', p.6.
[154] F. W. J. Hemmings, 'The Present Position in Zola Studies', in *The Present State of French Studies: A Collection of Research Review*, ed. Charles B. Osburn (Metuchen, N. J.: The Scarecrow Press, 1971), p.604.
[155] Egil Törnqvist and Birgitta Steene (eds & trans), *Strindberg on Drama and Theatre* (Amsterdam: Amsterdam UP, 2007), p.16; Robinson, 'Introduction', in *Selected Essays by August Strindberg*, p.11.
[156] Zola, Émile, [Letter to Strindberg 14 December 1887], in Claude Schumacher (ed.), *Naturalism and Symbolism in European Theatre, 1850-1918* (Cambridge: Cambridge UP, 2001), pp.302-03.
[157] August Strindberg, 'On Modern Drama and Modern Theatre', in *Selected Essays by August Strindberg*, ed. & trans. Michael Robinson (Cambridge: Cambridge UP, 1996), pp.73-86 (p.76, p 73).

takes place on a bare floor with two stools'.[158] Whereas Paul Féval's popular comic novel *Le Bossu* (1852) is cluttered with characters, *Tartuffe* (1664) presents a meticulous and minimalist examination of psychology.

Like Zola, Strindberg presented himself as a 'detached vivisectionist and serious student of the dark pathways of human behaviour'.[159] Capitalising on a brief medical career, he titled a two-volume collection of essays and discursive narratives: *Vivisections: A Retired Doctor's Observations* (1887; 1894).[160] Michael Robinson describes the volumes as 'incisive texts' which diagnosed 'the maladies of the age' and Watt-Smith agrees that the *Vivisections* 'explicitly invoked an ideal of a living dissection in [Strindberg's] relationship with the intellectual culture of the time'.[161] Indeed, he reassured Claës Looström, a prospective publisher who was concerned with the frank, autobiographical nature of the work, that,

> These vivisections are literature in the modern style, you'll see. That they deal with me and persons still living is precisely what is so fine, and the title provides a justification or explanation; but I've thought up a subtitle which justifies some of the roles I assume! See how this looks: '*Vivisections*. A Retired Doctor's Observations (Notes, Dossiers, Stories, Memoirs) Reported by August Sg.[162]

In a letter to his friend Pehr Staaf, he added,

> my investigation focuses on living persons. That some of them [should] perish is quite normal with vivisections, when fistular canals are inserted all the way into their intestines. It's the spirit of the age to write about the living rather than the dead.[163]

In the above passage, Strindberg recalled Bernard's defence of vivisection in the famous *Introduction*:

> we must necessarily dissect living beings, to uncover the inner or hidden parts of the organisms and see them work […]; to learn how man and animals live, we cannot avoid seeing great numbers of them die, because the mechanisms of life can be unveiled and proved only by knowledge of the mechanisms of death.[164]

Strindberg's admission that live-operations often caused death underlined naturalism's unprecedented radicalism.[165] By describing his literary works as scientific 'studies' or laboratory 'reports', Zola not only circumvented traditional ideas about authorship but also about plot and character development. Likewise, Strindberg stitched together the essay and short story form in

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[158] Ibid., p.75.
[159] Harry G. Carlson, *Out of Inferno: Strindberg's Reawakening as an Artist* (Seattle: University of Washington Press, 1996), 117.
[160] Rebellato, 'Introduction', in *The Routledge Drama Anthology*, 11.
[161] Robinson, 'Introduction', in *Selected Essays by August Strindberg*, p.4, p.6; Watt-Smith, *On Flinching*, p.104.
[162] August Strindberg, [Letter to Claës Looström], in *Strindberg's Letters*, ed. & trans. Michael Robinson, 2 vols (Chicago: University of Chicago Press, 1992), I, 262.
[163] August Strindberg, [Letter to Pehr Staaf], in *Strindberg's Letters*, I, 229.
[164] Bernard, *An Introduction to the Study of Experimental Medicine*, p.99.
[165] Holzapfel, 'Strindberg as Vivisector', p.333.

his *Vivisections*, using the title to justify his experimentation with (and perhaps even fragmentation of) generic and stylistic conventions.[166] Towards the end of the century Strindberg became disillusioned with naturalism. His alter-ego, the protagonist of *Klostret: Fagervik och Skamsund* [*The Cloister*, 1898] expresses disgust for exploiting his friends and using 'one's wife as a guinea pig'.[167]

Vivisection also appeared as a dramatic trope within Strindberg's plays. Amy Holzapfel notes that decapitation experiments were 'standard practice' within eighteenth- and nineteenth-century medical science.[168] This theatre historian argues that Jean's violent decapitation of Julie's goldfinch in *Miss Julie*, 'emphasises Strindberg's physiological treatment of his protagonist; the bird metonymically stands in for Julie as the pathologized subject of the playwright's own experimental vivisection'.[169] Holzapfel differentiates between Strindberg's 'more experimental, vivisectionist techniques of probing and penetrating' and Zola's 'anatomy-driven theatre' which she claims 'relied on the techniques of pure observation'.[170] Yet, to figure the former as a vivisector and the latter as a dissector overlooks that both men embraced a Bernardian vision of experimental absence. This is also reflected in the kinds of physiological investigations Strindberg shows interest in, namely those which test the function of the nervous system. For instance, Watt-Smith notices the attention he pays to automatic responses such as wincing and flinching. 'Aboulia', the disabling of will, is a central theme of *Miss Julie*, and Strindberg also considers how his audience might experience a loss or lessening of emotional reactivity in tandem with a greater control over intellectual function. Although Holzapfel describes Strindberg's theatrical operations as being performed 'for our optical delight', Strindberg presented truth, rather than excitement, as his ultimate aim.[171] Indeed, his distaste for the all-too-comfortable sentimentality of the theatre-going bourgeois public derives from a hope that audiences will one day learn to 'look with indifference'.[172] Future generations, he claims, will have 'laid aside those inferior, unreliable instruments of thought called feelings, which will become superfluous and harmful once our organs of judgement have matured'. As attendees or even assistants at a vivisection, audience members are duty-bound, like the playwright, to constrain tender feelings and instinctive reactions in the name of objectivity. By asserting that compassion for a heroine's plight is no noble sentiment but merely a sign of 'weakness in not being able to resist the fear that the same fate might overtake us', Strindberg

[166] Robinson, 'Introduction', in *Selected Essays by August Strindberg*, p.8, p.10; Watt-Smith, *On Flinching*, p.104.
[167] August Strindberg, *The Cloister*, trans. Mary Sandbach (London: Secker, 1969), p.118. Lizzy Lind-af-Hageby also noted Strindberg's use of vivisection imagery. See *August Strindberg: the spirit of revolt* (London: Stanley Paul & Co., 1913), p.377.
[168] Holzapfel, 'Strindberg as Vivisector', p.342.
[169] Ibid.
[170] Ibid., p.346.
[171] Ibid., p.342.
[172] Ibid., p.343; August Strindberg, 'Preface to *Miss Julie*', in *Strindberg on Drama and Theatre*, ed. & trans. Egil Törnqvist & Birgitta Steene (Amsterdam: Amsterdam UP, 2007), pp.62-72 (p.63).

further undermines the economy of sympathy upon which antivivisection ethics relied.[173] Furthermore, he overturns the usual requirements for the theatre-goer; willingness to embrace imagination, to react to spectacle, and to identify with the characters on the stage is now rejected, not required.

In order to cut away the fat from idealist writing and expose the sinewy truths about human behaviour, naturalist thinkers proposed distancing devices derived from contemporary physiology to limit the writer, reader, or audience's interference in the 'vivisection' experiment. As Lilian Furst and Peter Skrine write, attempting to 'preclude[] the role of the individual artist in the creative process' amounted to 'a formidable anti-aesthetics'.[174] Baguley adds that, efforts to define the movement by method alone also constituted a 'formidable "anti-poetics"' because it denied the 'thematic, generic, specifically literary essence of Naturalist literature'.[175] As Stanton B. Garner Jr. comments, the physiological theatre 'eliminated the stage's intrinsic theatricality' since it required the 'erasure of the stage's histrionic channels – its swaggering and swordplay'.[176] Similarly, Holzapfel adds that,

> Within Zola's Naturalist theatre, the actor functioned almost as a lab rat, led by stimuli in his determined environment to complete specific tasks, a process that, in turn, relied upon a rejection of the conventional aesthetics and rules historically governing the theatre itself.[177]

Thus, the 'laboratory-based aesthetic led to a form of anti-theatricality within the Naturalist project at large'.[178] Naturalism's appropriation of vivisection uprooted foundational principles of contemporary literary and dramatic culture.

Despite warnings that applying scientific principles to fiction was either impossible or ill-advised, some British authors embraced a Zola-esque vision of writing as live experimentation. The anonymously published novel, *A Monomaniac of Love: A Study in the Pathology of Character* (1878), sought to 'thoroughly morally vivisect' the protagonist, Arthur – a maid-seducing drunk who descends into insanity.[179] By choosing 'Monomania' as a pseudonym, the author signals his total absorption in the experiment. Simultaneously, however, the anonymity – underlined by the third person preface – distances him from the process. Thus, he imitates the same combination of absorption and detachment described by contemporary vivisectors and echoed by naturalist

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[173] Ibid.
[174] Lilian R. Furst and Peter N. Skrine, *Naturalism* (Routledge: New York, 2018), p.70.
[175] Baguley, *Naturalist Fiction*, pp.46-47.
[176] Stanton B. Garner Jr., 'Physiologies of the Modern: Zola, Experimental Medicine, and the Naturalist Stage', *Modern Drama* 43.4 (2000), 529-42 (p.536).
[177] Holzapfel, 'Strindberg as Vivisector', p.345.
[178] Ibid.
[179] [Monomania], *The Monomaniac of Love: A Study in the Pathology of Character*, 2 vols (London: Provost & Co., 1878), I, ix.

theorists. 'Monomania' embraces the determinist spirit of *Le Roman expérimental*. Because the 'tyranny of heredity' moulds both physical and moral aspects of humanity, he seeks to discover how the behaviour of Arthur's progenitors have cumulatively shaped his character.[180] The author sets out to achieve this 'in the light of modern scientific philosophy' by 'laying bare […] with a mental vivisecting knife, the inmost nature of the "cracked" human being […] selected for experimentation'. He is careful to champion Zola's vision; by 'vivisection' he does not mean 'analytically describing [Arthur's] character', but rather,

> simply placing him in a succession of carefully pre-arranged circumstances, and then not merely taking note of his actions, but also watching closely what goes on in his mind – minutely observing his states of consciousness, both under their emotional and thought-evolving aspects, so far as they have any palpable relation to the workings of his moral nature.[181]

Here too, the literary vivisector's role is to 'place', 'arrange', 'watch', and 'observe' rather than intervene.

The critical response to *The Monomaniac of Love* was unanimously hostile. One reviewer dismissed the work as 'the silliest book we have ever seen', another as 'ridiculously bad', and a third as 'mere weariness in print: always dull, and very often absurd'.[182] 'Monomania's' explanation of the experimental method in the preface attracted most annoyance. '[S]cientific stupidity', the *Saturday Review* declared, 'is always tiresome. For poetic folly, romantic folly, even theological folly, something can be said. But scientific folly neither gods nor men can endure'.[183] The *Examiner* was more sympathetic, but nonetheless concluded that 'Monomania' lacked literary skill:

> It is evidently written by a person who has thought a good deal and read a good deal, and observed a good deal, but who has not the very remotest notion how to write a story in such a way that character shall clearly come out of itself, instead of being held up to the reader in a series of moral vivisections.[184]

This reviewer suggests that 'vivisection' is a crude shortcut to characterisation and rejects it as a viable literary style. The influential poet, critic, and editor of various literary magazines William Ernest Henley agreed that 'Monomania's' vivisections reveal (or perhaps produce) an 'absolutely unnatural and impossible combination of qualities' in the protagonist.[185] In a lengthy piece for the

[180] Ibid.
[181] Ibid., p.iii-iv.
[182] [Unsigned], 'A Monomaniac of Love' [review], *Saturday Review*, 46.1199 (19 October 1878), 501-03 (p.502); [Unsigned], 'A Monomaniac of Love' [review], *Examiner*, 3690 (19 October 1878), 1335-36 (p.1336); W. E. Henley, 'New Novels', *Academy*, 333 (21 September 1878), 289-90 (p.289).
[183] [Unsigned], 'A Monomaniac of Love' [review], *Saturday Review*, p.502.
[184] 'A Monomaniac of Love', *Examiner*, 1336.
[185] Henley, 'New Novels', p.289.

Academy, a journal which 'established a new level of academic involvement in criticism', he claimed that the author was:[186]

> sufficiently well acquainted with the conclusions of modern science to write of them earnestly and with intelligence and sufficiently unacquainted with literature to believe that a novelist can live by science alone.[187]

Henley observed that scientific theories were 'thrust' upon the reader

> by means of an aesthetic process, that is almost ludicrously inadequate, in its means as its results. The author, in brief, is not a novelist. He has imagined himself to be one, and has done his best to approve his imagining well-founded, not only by liberal use of touches Realistic, but by giving his puppets a scientific texture and a scientific intention.[188]

'Monomania' fails to achieve scientific or artistic success. He produces a '*quasi*-scientific essay' and, because he only adds realistic 'touches' and empirical 'texture' to his puppets, the 'science' as well as the characterisation is merely skin-deep. Not only is his work unable to service 'the grave interests of truth' as he had hoped, but it also leaves the reader's 'emotional capacity altogether uninfluenced'.[189]

Although the analogy between vivisection and writing was an important part of naturalist theory and practice, it was also put under significant strain by the very same thinkers who forwarded it. Oancea suggests that the metaphor fails to hold together because the argument that experiments on fictional beings (i.e. characters) could produce knowledge that applied to real humans 'represents a far greater logical leap than one carrying physiological work from animals to humans'.[190] However, this is not self-evident, and it is important to consider that, thanks in part to antivivisection propaganda, the Victorian public was not convinced by claims that knowledge produced by animal experimentation easily transferred to clinical contexts. Moreover, for Zola and Strindberg, vivisection's usefulness for alleviating disease was merely a by-product; far more important, for their purposes, was whether the method revealed scientific truths.[191] According to Oancea, Zola believed that 'literature can produce valuable knowledge of man, which is of equal importance to that obtained by physiology'.[192] However, Zola actually went further, claiming that 'it is but a question of degree in the same path which runs from chemistry to physiology, then

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[186] Christopher Kent, 'Introduction', in *British Literary Magazines: The Victorian and Edwardian Age, 1837-1913*, ed. Alvin Sullivan (London: Greenwood Press, 1984), pp.xiii-xxvi (p.xx).
[187] Henley, 'New Novels', p.289.
[188] Ibid.
[189] Ibid.
[190] Oancea, 'Literature and Vivisection', p.678.
[191] Rignall, *Oxford Reader's Companion*, p.325.
[192] Oancea, 'Literature and Vivisection', pp.674-75.

from physiology to anthropology and to sociology. The experimental novel is the goal'.[193] 'The novel', Zola wrote, 'is no longer confined to one special sphere; it has invaded and taken possession of all spheres. Like science, it is master of the world. It touches on all subjects'.[194] Literature's expansion means that, eventually, it cannot run parallel with experimental science because the analogy between vivisection and writing cannot exist when fiction-writing eventually becomes a science and the two disciplines are no longer distinct but 'in the same path'.[195] Holzapfel's observation that Strindberg used vivisection 'precisely in order to critique Naturalism and its reliance on mimetic representation' equally applies to Zola who sought to 'vivisect mimesis itself'.[196] In other words, at their most ambitious, Zola and Strindberg attempted to use analogy to reach reality. However, efforts to use systems of correspondences to make literature a scientific tool inevitably failed: as a representative device, metaphor could never quite get to, or become, the 'real thing'. Levine writes that although realism has been criticised as a 'self-satisfied vision based in a misguided objectivity and faith in representation', its apparent self-confidence actually implies 'a radical doubt' and a 'profound self-consciousness'.[197] As Gilbert explains, 'its authors both yearn to embody the referent in language and are keenly aware of the impossibility of doing so'.[198] This tension is encapsulated by the vivisection metaphor. For the realists and naturalists discussed, the relationship between literature and animal experimentation '*was* analogical, but it was also something more', just as it was 'at once jocular and in earnest'.[199]

Victorian critics also considered how scientific principles could promote more empirical methods for literary analysis. Early in the century, many had adopted 'the historicist principles that informed Romantic hermeneutics' without seriously considering how subjectivity informed their evaluations.[200] Yet, as Suzy Anger points out, by the *fin-de-siècle* far more attention was being paid to 'method' and 'procedure'.[201] This was reflected by the numbers of critics who were also active scientists, many of whom contributed to the growing movement for scientific literary criticism. As scholars such as Rick Rylance, Nicholas Dames, Benjamin Morgan, and Peter Garratt have explored, psychological, neurological, and physiological principles were adapted to develop

193 Zola, 'The Experimental Novel', p.2 ; Zola, 'Le Roman Expérimental'. Original: 'Ce n'est là qu'une question de degrés dans la même voie, de la chimie à la physiologie, puis de la physiologie à l'anthropologie et à la sociologie. Le roman expérimental est au bout' (p.2)
194 Zola, 'Naturalism on the Stage', p.124; 'Le Naturalisme au Théâtre'. Original: 'Comme la science, il est maître du monde. Il aborde tous les sujets' (p.124).
195 Zola, 'Experimental Novel', p.32 ; Zola, *Le Roman Expérimental*. Original: 'Puisque la médecine, qui était un art, déviant une science, pourquoi la littérature elle- même ne deviendrait -elle pas une science, grâce à la méthode expérimentale?' (p.30). See also p.16.
196 Holzapfel, 'Strindberg as Vivisector', p.346, p.330.
197 Levine, *The Realistic Imagination*, p.20.
198 Gilbert, *Victorian Skin*, p.21.
199 Menke, 'Fiction as Vivisection', p.619, p.627 [emphasis in original].
200 Suzy Anger, *Victorian Interpretation* (London: Cornell UP, 2005), p.132.
201 Ibid., p.134.

'science-based aesthetic theories' and 'scientized methodologies' in the hope that criticism would become entirely objective.[202] Increased references to experimental physiology reflected a drive to imbue literary studies, which was shedding its amateurish roots, with scientised authority. What has received far less commentary is that comparisons between criticism and vivisection were not limited to – or even closely associated with – scientific literary criticism. In fact, as the next section explores, the discourse was much more broadly used to interpret and to reflect some of the key changes that were taking place relating to the theory and practice of modern criticism.

'A slashing review is a thing that they like': vivisection and literary criticism

On 15 December 1875, while testifying before the Royal Commission on Vivisection, G. H. Lewes strikingly compared live animal experimentation and literary criticism. A staunch, lifelong defender of the right to vivisect, Lewes rejected regulation and, while making the case against licencing, he mused,

> it seems to me that the vivisection of which we are now speaking is very much like vivisection in another department, that of Literature, – that is to say, criticism, which is also vivisection. There is a great deal of real torture inflicted upon authors by critics, which lasts for a considerable time in sensitive minds.[203]

Perhaps surprisingly, the commissioners were willing to linger on the analogy, and Lewes readily expanded his metaphor:

> Q6335: *(Sir J. B. Karslake)* And without anaesthetics?
>
> And without anaesthetics.
>
> Q6336: *(Mr. Erichsen.)* And by incompetent persons?
>
> Not only by incompetent persons, but by persons who, even when they are competent, are often reckless. It is quite true that for the benefit of literature, and consequently of society, criticism is a necessity; and I suppose that everybody possessed of right feeling, who has exercised that office, has often felt great pain in giving pain. But a great many people do not feel any pain at all about it; a slashing review is a thing that they like.
>
> Q6337: *(Chairman.)* Is there not this difference, that you may get so much accustomed to the moral vivisection, of which you speak, as to become indifferent to it?

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[202] Benjamin Morgan, *The Outward Mind: Materialist Aesthetics in Victorian Science and Literature* (Chicago: University of Chicago Press, 2017), p.5; Peter Garratt, 'Scientific Literary Criticism', in *The Routledge Research Companion to Nineteenth-Century British Literature and Science*, ed. John Holmes and Sharon Ruston (London: Routledge, 2017), pp.115-127 (p.5); Nicholas Dames, *The Physiology of the Novel* (Oxford: Oxford UP, 2007), p.6; Rick Rylance, *Victorian Psychology and British Culture 1850-1880* (Oxford: Oxford UP, 2000); Anger, *Victorian Interpretation*, p.134.

[203] *RRCV1*, p.311.

Public men may get indifferent to criticisms which they get every day; but I do not think that actors and authors, who do not get it every day, get accustomed to it.

Q6338: But I suppose you would scarcely compare that in point of necessity of control with the fact of living animals being cut up?

Why not? Surely here are human beings who suffer frightfully? I do not think you could control that; but then I do not think you could control vivisection profitably.[204]

This 'curious little conversation', as the *Spectator* described it, showed that both professions were concerned about how to minimise suffering for the individual subject (whether animal or author), while maximising the public benefit of each 'procedure'.[205] Both parties were anxious to ensure the good character and competence of their operators, all the while recognising the difficulty (or, in Lewes's view, the futility) of regulating a rapidly expanding practice. Although Lewes's comparison appears unusual, other essayists and reviewers forged the very same connection. The *Westminster Review* had already remarked in 1864 that criticism was 'beset by most of the perplexities popularly held to attach to vivisection'.[206] By recalling key issues in the debate surrounding live animal experimentation, commentators attempted both to thwart and support the significant changes to British critical culture that were taking place in the latter half of the nineteenth century.

The changing means and speed with which criticism was produced and consumed in the period supported the connection with vivisection. The rapidly expanding and evolving periodical press was the 'main public forum for literary criticism', the 'medium for the emergence of critical theory', and 'the context within which the emerging discipline of English was forged and defined'.[207] Although most periodicals were not literary, this still left 'an astonishing number that carried at least some reviews, reflective prose, poetry, or fiction'.[208] The mid-century saw 'the emergence or resurgence of […] political and general weeklies with strong literary departments'; literary reviews and critical essays particularly flourished in the *Athenaeum* (1828-1921), the *Spectator* (1828-present), and the *Saturday Review* (1855-1938).[209] Likewise, in the 1860s, a 'new generation' of respectable and affordable monthlies such the *Fortnightly Review* (1865-1900) (which became monthly after a year), and the *Contemporary Review* (1866-) sprang up.[210] Many carried high-calibre

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[204] Ibid.

[205] [Unsigned], 'The Poets in Litigation', *Spectator*, 49.2506 (8 July 1876), 857-58.

[206] John Chapman, 'Mr Tennyson's New Poems', *Westminster Review*, 26.2 (October 1864), 396-414 (p.396).

[207] Hilary Fraser, 'Periodicals and Reviewing', in *The Cambridge History of Victorian Literature*, ed. Kate Flint (Cambridge: Cambridge UP, 2012), pp.56-76 (p.72); Joanne Shattock and Michael Wolff, 'Introduction', in *The Victorian Periodical Press: Samplings and Soundings* ed. Joanne Shattock and Michael Wolff (Leicester: Leicester UP, 1982), pp.1-14 (p.xix).

[208] John North, 'The Rationale – Why Read Victorian Periodicals?', in *Victorian Periodicals: A Guide to Research*, ed. J. Don Vann and Rosemary van Arsdel (New York: MLA, 1978), pp.3-20 (p.41); Kent, 'Introduction', *British Literary Magazines*, p.xiii.

[209] Kent, 'Introduction', *British Literary Magazines*, p.xix.

[210] Ibid., p.xvi.

reviews, essays and serialised fiction for the middle classes. Comparisons with vivisection reflected the newfound ability to respond rapidly to just-published works as monthly, weekly, and even daily rhythms undercut the more sedate pace set by quarterlies, the market for which had stagnated.[211] As one commentator wrote, 'periodicals live […] by conscientious vivisection. It is what they profess; it is what they exist for'.[212] The connection was particularly apt in the case of drama reviewing since this involved very much 'living' subjects of analysis. The *Theatre*, for instance, sardonically implored the RSPCA to turn their attention to the 'practice of inflicting torture' on actors and theatrical managers.[213] It also playfully commented that even 'the International Association for the total Suppression of Vivisection are pleased to allow the many fully-reported cases of "cutting up" living actors and actresses by well-known dramatic critics to "*faire la queue*" after frogs and rabbits'.[214] The criticism of serialised novels that were still 'in-progress' also brought the temporal aspect of 'live' dissection – as in of contemporary events or works – into sharp relief. Serial publication brought 'a greater sensitivity to the sensibilities, real or imagined, of the readership', and occasionally the vivisection metaphor was extended to consumers as well as creators of fiction.[215] Sensation fiction and melodrama caused particular concern because readers of these genres – imagined to be female, young, and lower-middle or working-class – were considered especially vulnerable to authorial experimentation and highly susceptible to the 'operation' of the text.[216] The rapid commodification of literature and the ephemerality of the national press raised concerns about the value of reading; second-rate narratives seemed to cause nervous excitation and provoke physiological or psychological responses that were, at best, useless yet fleeting, or, at worst, harmful to individual and national character.[217]

The critic's responsibility to carry out skilled and useful work was emphasised in this period. As with physiology, principles and frameworks were drawn up to establish the tenets of effective and ethical criticism and to furnish practitioners with appropriate tools.[218] The growing tendency to critique other critics might have partly resulted from the need for 'copy' as print media exploded, but it was also a sign that a new professional class, sometimes termed 'men of letters' and including essayists, reviewers, social commentators, and historians, was consolidating. Increasingly, university graduates were attracted to criticism, and Christopher Kent notes that, by

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211 Fraser, 'Periodicals and Reviewing', p.72.
212 [Unsigned], 'Historical Vivisection: Mr Kinglake and his Assailants', *Reader*, 21 (23 May 1863), 495-96 (p.495).
213 [Unsigned], 'En Passant', *The Theatre: A Weekly Critical Review*, 1.17 (22 May 1877), 212-14 (p.212).
214 Ibid., p.212.
215 Kent, 'Introduction', *British Literary Magazines*, p.xvi.
216 Pamela K. Gilbert, *Disease, Desire, and the Body in Victorian Women's Popular Novels* (Cambridge: Cambridge UP, 1997), pp.70-78.
217 Ibid., p.32; Leah Price, 'Victorian Reading', in *The Cambridge History of Victorian Literature*, ed. Kate Flint (Cambridge: Cambridge UP, 2012), pp.34-55 (p.36).
218 See for example G. H. Lewes, 'The Principles of Success in Literature', *Fortnightly Review*, 1 (1865), 572-89.

the 1870s, 'higher journalism was thronged with dons'.[219] Literary texts became used as innovative 'springboards for wider discussion of related journalism matters' as '[r]eviewing practices expanded to include more autonomous disquisitions on some aspect of the central theme of a literary work that sometimes seemed only tenuously related to the book under review'.[220] As a more independent and critical journalism flourished, 'the practice and purpose of criticism itself as an intellectual discipline and a cultural tool began to be articulated and theorised'.[221] Stephen Arata notes that this heralded a concurrent shift in focus from content or subject-matter to form, technical processes, and treatment.[222] Vivisection was used to contemplate this shift from an 'illustrative model' reliant on lengthy quotation and paraphrase to an analytical one.[223] Despite claims that criticism was inherently less valuable because it did not require inventive genius, by the end of the century 'the critic received recognition as an intellectual and creative phenomenon with an equivalent cultural capital to the artist'.[224] Of course, in practical terms, the separation of author and critic was arbitrary; many authors were critics and editors, and literature and criticism were natural bedfellows.

In early Victorian Britain, influential quarterlies were infamous for publishing scathing reviews. In its first issue (January 1803), the *Edinburgh Review*'s founder and editor Francis Jeffrey launched into a sarcastic attack on the 'Lake Poets'.[225] The poet Robert Montgomery faced a similarly vicious onslaught from the essayist Thomas Babington Macaulay in April 1830.[226] Jeffrey retained this manner of reviewing which was part of a periodic culture which saw literature in strongly political terms. He described Samuel Taylor Coleridge's narrative ballad, *Christabel* (1816), as a 'miserable piece of coxcombry and shuffling', and began his review of William Wordsworth's poem *The White Doe of Rylstone* (1815) by claiming that it had 'the merit of being the very worst poem we ever saw imprinted in a quarto volume'.[227] This critical style became a benchmark. In 1865, the *Saturday Review* declared that 'no review [...] can now hope to make or mar a poet's

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219 Kent, 'Introduction', *British Literary Magazines*, p.xx.
220 Ibid., p.xvii; Fraser, 'Periodicals and Reviewing', p.72. See also Walter Houghton, 'Periodical Literature and the Articulate Classes', in *The Victorian Periodical Press: Samplings and Soundings*, ed. Joanne Shattock & Michael Wolff (Leicester: Leicester UP, 1982), pp.3-27 (p.6).
221 Fraser, 'Periodicals and Reviewing', p.73.
222 Stephen Arata, 'The *fin de siècle*', in *The Cambridge History of Victorian Literature*, ed. Kate Flint (Cambridge: Cambridge UP, 2012), pp.124-47 (pp.126-27).
223 Fraser, 'Periodicals and Reviewing', p.72.
224 Ibid.
225 [Francis Jeffrey], 'The Lake School of Poetry' [review of Robert Southey's *Thabala*], *Edinburgh Review*, 1 (October 1802), 63-83.
226 [Thomas Babington Macaulay], 'Mr Robert Montgomery: The Modern Practice of Puffing, *Edinburgh Review*, 51 (April 1830), 193-211.
227 Francis Jeffrey, '*Christabel: Kubla Khan, a Vision. The Pains of Sleep* [Review]', *Edinburgh Review*, 27, September 1816, pp.58-67 (p.64); Francis Jeffrey, '*The White Doe of Rylstone* [Review]', *Edinburgh Review*, 25, October 1815, pp.355-63 (p.355).

fortunes after the fashion of the *Edinburgh* and the *Quarterly* in the days of Jeffrey and Gifford'.[228] Nostalgic for what it considered the heyday of incisive criticism, the *Spectator* remarked in 1877 that 'a review like Macaulay's of Montgomery would be pronounced by almost all English critics as at once a brutality'.[229] When the *Censor* published an unsparing review of Mary Elizabeth Braddon's novel *Hostages to Fortune* (1875), *Belgravia* rebuked the periodical for 'fall[ing] upon the fated volumes hip and thigh' in a way that proved as 'ruthless as Jeffrey in his attack on Wordsworth'.[230] The *Belgravia* essayist also ridiculed 'the grand air of impartiality and more than papal infallibility' that the *Censor*'s critics typically adopted.[231] Rather than pronouncing final judgements from on high, critics active later in the century were expected to work closely with the text to uncover meaning and consider authorial intention. As a writer for the *St James's Magazine* warned, 'do not mistake ill-natured petulance and carping invective for sound criticism. The office of the critic, as it is now viewed by mankind, is to instruct and admonish, rather than to torture and smite'.[232] Scholars, including Kent, Helene Roberts, and John Woolford, agree that a more sympathetic mode flourished as destructive criticism and criticism as self-display declined.[233] As Woolford describes it, 'reflective sobriety replaced the smart, stinging epigrams and epithets of 1855, [and] even adverse judgements assum[ed] a weighty rather than a showy air'.[234] Cobbe noted this evolution at a LAVS meeting in 1881 where she presented vivisection as an aberrant practice given the 'softer' spirit of the current time: 'now nobody will write a review cutting up an author with the same amount of bitterness that they did in the last generation', yet 'men come forward to tell us that the torture of animals must be continued'.[235] While many welcomed the change, the *Spectator* mourned that 'criticism of the old and cutting kind is […] almost as dead as satire', although Kent reminds us that acerbic reviewing did not simply disappear.[236] Others took the opposite view, insisting that the 'ill-natur[ed]', 'coarser and more scandalous' critical spirit lived on, but that the sneers of 'self-elected scarifiers of literary talent' were now 'clothed in polished language, and presented under decent auspices'.[237] Nonetheless, widespread condemnation of the

[228] [Unsigned], 'Mr Browning and the Edinburgh Review', *Saturday Review*, 19.480 (7 January 1865), 15-17 (p.17).
[229] 'Sir W. Harcourt on Critics', 50.2551, *Spectator*, 19 May 1877, pp.629-70 (p.630).
[230] [Unsigned], 'Hostages to Fortune', *Belgravia: A London Magazine*, 5 (January 1875), 293-316 (p.314).
[231] Ibid., pp.314-15.
[232] [Unsigned], 'Recent Books and Recent Criticism', *St James's Magazine*, 3.4 (October 1876), 213-19 (p.218).
[233] Kent, 'Introduction', *British Literary Magazines*; Helene Roberts, 'Exhibition and Review: the periodical press and the Victorian art exhibition system', in *The Victorian Periodical Press: Samplings and Soundings*, ed. Joanne Shattock and Michael Wolff (Leicester: Leicester UP, 1982), pp.79-107 (pp.86-87); John Woolford, 'Periodicals and the Practice of Literary Criticism, 1855-64', p.125.
[234] Woolford, 'Periodicals and the Practice of Literary Criticism', p.124.
[235] [Unsigned], 'The London Anti-Vivisection Society', p.64.
[236] 'Sir W. Harcourt on Critics', p.630; Kent, 'Introduction', *British Literary Magazines*, p.xix.
[237] [Unsigned], 'Recent Books and Recent Criticism', pp.216-17.

recklessness of the early 'slashing' style, and discussions about balancing analytical zeal with appropriate sensitivity to the subject, reveal a significant shift from the mid-century.

Some critics promoted the new style by embracing contemporary antivivisection arguments and rhetoric relating to sympathy and pain, while others justified their more brutal practice by reiterating the kinds of assurances that vivisectors gave to the Commission. For example, one critic echoed the movement's calls for sympathetic identification with the experimental animal to promote a more understanding relationship between writer and critic. 'Put yourselves in the author's place', he exhorted his peers, 'imagine him to possess delicate susceptibilities like your own'.[238] Others combined Romantic notions about the delicacy of the artistic personality with physiological language, suggesting that authors were, constitutionally, more susceptible to pain and, as thin-skinned beings, could be grievously wounded by an unkind reception. The *St James's Magazine* (1861-82) cautioned the *Athenaeum* that '[i]t cannot be pleasant for any person to be deliberately vivisected before a grinning public, and authors are generally considered to be the most sensitive of human beings'.[239] Thus, the scale of sensitivity – a controversial theory that had become a thorn in the side of commissioners trying to find consensus on pain-perception – was used to call for a more compassionate form of literary analysis.

In a half-hearted defence of its repeated criticism of the English poet and novelist John Edmund Reade, the *New Quarterly Review and Digest of Current Literature* recalled discussions about how both operator and animal might become inured by repeated vivisection. Answering the Commission's Chairman more affirmatively than Lewes had done (Q. 6337), this essayist suggested that, like animals who are regularly subjected to live-cutting, or eels who become accustomed to being skinned alive, authors who receive regular criticism become less sensitive:

> The critic, whose paper-knife scalpel is haggled by long service, may be apt to forget, in the commonness of the case, how tender and thin skinned is each new sufferer on his blood-stained operation-table. In laying truculent hands, therefore, on our half dozen present victims of vivisection, we may as well flesh the experimental instruments of iatric torture on the *corpus vile* of an old offender, the hocks of whose Pegasus show signs of having been already fired and turned out many times in vain. John Edmund Reade must be used to it by this time, if any man or eel ever was or can.[240]

Despite the assurance that Reade 'must be used to' critical cuts by now, the following clause undercuts this certainty and a quiet anxiety seeps out from behind the playful tone. Before the operation even begins, the critic questions its usefulness. Reade is a '*corpus vile*' – a body that 'can be used for experiment without regard for the outcome' – and, as such, the critic, armed with his

[238] Ibid., p.218.
[239] [Unsigned], 'Recent Books and Recent Criticism', p.218.
[240] [Unsigned], 'Pharmacopia of Poetry', *New Quarterly Review and Digest of Current Literature*, 5.18 (April 1856), 170-76 (p.171).

'paper-knife scalpel', can subject him to medical (iatric) torture without much forethought.[241] Yet, his primary reason for selecting this subject – that other 'victims of vivisection' have already been disposed of and he 'may as well' turn to an old favourite – is already tenuous. Moreover, the procedure has already been tried 'many times in vain'. The figurative legs of Reade's Pegasus – the mythological steed of the Muses which bore poets on their flights of literary inspiration – have previously been 'fired'. This term refers to a blacksmith's practice of burning or freezing a horse's leg to accelerate injury recovery or generally toughen the animal by producing counter-irritation. Like a useless vivisection, critical cuts, burns, or stings will not improve Reade's literary performance or reveal any beneficial information. The Cruelty to Animals Act stipulated that vivisectors could not perform multiple experiments if the animal had, at any point, regained consciousness. Authors and poets, however, were not afforded that protection.

Lewes went to extraordinary efforts to prevent Eliot, whom he described in a letter to her publisher as 'unusually sensitive', from reading unfavourable reviews of her novels, and even censored her mail.[242] Eliot's publishers were equally wary of suggesting too many alterations for fear of her 'putting away her pen forever'.[243] However, despite the emotional and psychological wounds authors sustained from criticism, it was widely acknowledged that some suffering was necessary for the greater good. Lewes admitted that it was not just criticism from 'incompetent persons' that caused authors to 'suffer frightfully'; even prudent appraisals 'for the benefit of literature and consequently of society' could be 'torture'. In their respective essays, 'Criticism in Relation to Novels' (1865-66) and 'Silly Novels by Lady Novelists' (1856), Lewes and Eliot had insisted that the critic's responsibility was to perform a rigorous and judicial evaluation of literary merit rather than pander to the writer's sensitivities.[244] To judge novels carelessly or cursorily as one might 'a history, an article, or a pamphlet' insulted the genre; overly-permissive attitudes would allow frivolous works to multiply.[245] Even when the *Spectator* advocated returning to a more severe style, it did so for the sake of truth as well as entertainment. Contemporary critics, the periodical claimed, were excessively sensitive to the author's feelings and therefore ineffective:

> Far from intolerance being the critics' foible, their weakness is conscious pity. The book is bad, but still what a thing it is that it should be written at all! […]. We read criticisms every day with the weary certainty that we shall not find in them one word of that sharp and clear condemnation which, as the critics well know, their subjects thoroughly deserve. So

[241] OED.
[242] G. H. Lewes, [Letter to John Blackwood November 1876], in *The George Eliot Letters*, II, 276; Rosemary Ashton, *G. H. Lewes, A Life* (Oxford: Clarendon Press, 1991), p.5; Beverley Rilett, 'The Role of George Henry Lewes in George Eliot's Career: A Reconsideration', *George Henry Lewes Studies*, 69.1 (2017), pp.2-34; Arthur Paterson, *George Eliot's Family Life and Letters* (London: Selwyn & Blount Ltd., 1928), pp.52-64.
[243] Ashton, *G. H. Lewes*, p.270.
[244] G. H. Lewes, 'Criticism in Relation to Novels', *Fortnightly Review* 3.15 (15 December 1865), 352-61; George Eliot, 'Silly Novels by Lady Novelists', *Westminster Review*, 66 (October 1856), 442-61.
[245] Lewes, 'Criticism in Relation to Novels', p.354.

> pitiful are they all, so full of excuses, so full let us add, often of genuine though rather contemptuous kindliness, that a crude bit of abuse, of downright hard-hitting, if only is it directed at the right place and is free of personal malignity, is a positive relief.[246]

The fear was that 'smooth' phrases, excessive geniality, and 'conscious pity' dulled the critical blade.[247] The *Spectator* claimed that contemporary critics 'seem to imagine that, like modern surgeons, their art should be "reparative", and that any patching, however dangerous, is better than any mutilation, however safe'.[248] It reasoned that peccant bodies of writing needed to be unsparingly sliced open in order to be cured, even if the operator and their subject preferred less invasive techniques. If it led to better literature, inflicting emotional and psychological wounds upon writers was justified.

A zealous 'slashing' style threatened to destroy instead of reveal meaning and could even prematurely 'kill' the subject. In an essay on Francesco Petrarca's lyric poetry, the nineteenth-century English novelist Frances Eleanor Trollope described critics who cannot reach the essence of the text's meaning – cannot vivisect properly – because '[t]hey kill the poetry first, and then they cut it up'.[249] The publisher and writer John Chapman elaborated upon this problem in his prelude to a critical essay on Tennyson for the *Westminster Review*: 'To graze ever so tenderly with the critical scalpel the breathing form fresh from the artist's hand', he wrote,

> seems cruel, reckless, and all but profane, […]. Again, in the too bold effort to detach part from part and limb from limb, for the purposes of observation and experiment, the life itself, the only object of pursuit, glibly eludes the grasp of the operator, and he has nothing left him to work upon but a dull and dry residuum of words, paint, or stone.[250]

Because the text (or artwork) is a 'breathing form' and the critic's 'object of pursuit' is to experiment upon 'the life itself', vivisection, rather than dissection, is the appropriate method. The critic must slice far enough and in the right place to investigate some aesthetic element, but not so forcefully that all literary life is extinguished, leaving only the cold severed 'limbs' behind. Although it had attendant problems, careful methodological exegesis comparable to prudent and skilled vivisection improved upon earlier eviscerations of text and author.

Ironically, considering that he was a vehement antivivisectionist, Richard Holt Hutton's series of contemporary political articles, *Studies in Parliament* (1866), written for the *Pall Mall Gazette*, were heralded as responsible, skilful, and beautiful vivisections. Writing for the *Fortnightly Review*, Anthony Trollope remarked,

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246 [Unsigned], 'Sir W. Harcourt on Critics', p.629.
247 Ibid., p.629.
248 Ibid., p.630.
249 Frances Eleanor Trollope, 'The Homes and Haunts of the Italian Poets', *Belgravia*, 32.127 (May 1877), 287-309 (p.306).
250 Chapman, 'Mr Tennyson's New Poems', p.396.

> Mr Hutton's aptitude for the vivisection of a political character without touching the private man is unique. He must have passed many a long hour, many a long night, in the galleries of the Houses of Parliament, almost unconsciously laying bare and separating the nerves and veins of the characters before him with the dissecting knife of his observant intellect, till he has obtained an insight into the minds of the men, and a grasp of their capacities and energies, with more than the accuracy of the practical anatomist.[251]

By keenly observing his subjects' behaviours while in motion, Hutton can achieve more than the 'practical anatomist' who works upon dead bodies, producing a portrait 'as to the truth of which the beholder feels that he can have no doubt'.[252] His incisive intellect – his ability to 'lay bare' and 'separate' the 'nerves and veins of the characters before him' – is coupled with restraint: he knows which parts of the body to leave intact. Furthermore, by speculating that Hutton performed his painstaking operations 'almost unconsciously', Trollope echoes the rhetoric of intellectual absorption via sustained attention to detail that was often present in vivisectors' accounts. Similar comments had been made elsewhere in relation to other kinds of 'living' characters. For instance, *The Times* praised the playwright Watts Phillips for working 'with singular care and conscientiousness' on the eponymous protagonist of his critically acclaimed play, *Joseph Chavigny* (1857). This reviewer remarked that Philips subjected Chavigny to 'a species of vivisection' until 'every side of his character' was presented to the audience.[253] His satisfaction derived from the fact that both the playwright's intention and the achieved effect was to present a rounded personage with whom the audience could become uniquely acquainted – even know 'inside out'. In the hands of adept 'vivisectors' such as Hutton and Phillips, the literary scalpel does not destroy but instead helps to convey truly individual and lifelike characters.

Elsewhere too, images of vivisection expressed the broadly synchronous changes taking place within biographical and historical studies. The heated controversy surrounding Alexander William Kinglake's history of the Crimean War (1863) illuminated many of the related concerns. Amongst others, *The Times*, *Edinburgh Review*, and *Quarterly Review* attacked Kinglake's character and work, while the *Saturday Review*, *North British Review*, and *Reader* rallied to his defence. The former cohort condemned Kinglake for a variety of sins including (mis)use of private correspondence. However, the bigger issue was that his approach signalled a shift towards a 'scientific' style of historical research. *The Times*, for instance, lamented the decline of histories that contained brightly painted scenes of individual heroism written by 'brilliant descriptive author[s]', 'graphic sketcher[s] of individuals', and 'master[s] in the arrangement of lights and attitudes'.[254] Kinglake's work represented a new mode: 'microscopic investigations' of the past which prioritised detail and

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[251] Anthony Trollope, 'Critical Notice', *Fortnightly Review*, 4.22 (1 April 1866), 510-12 (p.511).
[252] Ibid.
[253] [Unsigned], 'Adelphi Theatre', *The Times*, 22679 (13 May 1857), 9.
[254] T. H. S. Escott, 'A Historian of the Day', *The Times*, 1 (June 1879), 379-84 (pp.379-80).

favoured tracing the influence of environment and broader social forces on individuals' actions.[255] 'The spirit of scientific research', the writer for *The Times* continued, 'tyrannises over us on every side. Original investigation, conducted after the most rigidly precise fashion alone satisfies the severe criticism of the day'.[256] The *Reader*, a 'self-consciously academic literary weekly' founded by university liberals, leapt to Kinglake's defence:[257]

> If a man undertakes a work of contemporary political and military history, what does he undertake but a work of varied and continuous vivisection? If he has scruples about vivisection, let him abandon the task: contemporary or recent history *means* vivisection. We require more of vivisection in all departments of the body-politic at the present time – not more in quantity, perhaps, not more in mere gashing and cutting up; but more of the careful, conscientious, scientific process which traces nerves and muscles and arteries with a view to anatomical information and to ultimate physiological theory.[258]

Here, the *Reader* rebuffs anxieties which pooled around '*ante-mortem* studies' in relation to biography and contemporary history. Describing the work as a 'vast', 'splendid', and 'beautiful vivisection', the *Reader* praises Kinglake for rejecting broad-brush, exaggerated, or partial representations of character – 'gross pictorial daubing' – in favour of 'exact analysis' and 'investigation of action and motive'.[259] With no object other than the truth, he neither vilified nor spared his subjects. More than a decade later, the *Westminster Review* also compared the peculiar challenges of studying 'current living history' to that of animal experimentation:

> The writer of contemporary history has to make that which is near to us, that which is dear to us or hated by us, sufficiently remote from our urgent sentiments to allow us to survey it with fairness and justice. That is not easy. […] his intimate knowledge [of the time-period] is intermixed with prejudices; and even if he can transcend these in himself, he has to speak to men with intense loves and hates, intense beliefs and convictions, which are often irrational and wrong, – men who are in some part the subject of his vivisection.[260]

The vivisecting historian is not the only one who must be sufficiently close to and sufficiently disengaged from the subject matter to provide a balanced critique. The human subjects of his vivisection – his readers – must also transcend their current selves in order to make room for objective study. Consciously detaching from political or personal interests promised to free biography and history from the shackles of propriety, allowing the emergence of truer and more useful accounts of lives and events.

Since the seventeenth century at least, the language of surgical and anatomical cutting had been used to describe textual analysis as well as the pain that unfavourable criticism could cause

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[255] Ibid., p.381.
[256] Ibid., p.380.
[257] Kent, 'Introduction', *British Literary Magazines*, p.xx.
[258] [Unsigned], 'Historical Vivisection', p.945 [emphasis in original].
[259] Ibid.
[260] [Unsigned], 'Russia', *Westminster Review*, 51.2 (April 1877), 429-518 (pp.493-94).

authors, poets, and playwrights.[261] The emotional or psychological damage inflicted by acerbic or dismissive reviews was often described in terminology which signalled physical harm such as 'wounding', 'slashing', 'cutting', or 'stinging'. In the late-nineteenth century, complaints about unduly harsh criticism were often couched in terms of 'vivisection' and could be used interchangeably with vocabulary of injury and incision. However, the analogy with live experimentation was also employed more precisely to describe a shift in critical approach which was taking place in the later part of the century. Vivisection helped express an evolution away from the ruthless 'slashing style' characteristic of earlier quarterlies like the *Edinburgh Review* (1802-1900) and the *Quarterly Review* (1809-1967). Of course, acerbic and destructive reviewing did not disappear, and quality varied a great deal.[262] The *London Review*, for instance, warned that 'literary hacks in the reign of Victoria [...] habitually practise vivisection', while the *Dublin Review* commented that some critics were 'expert[s]' in 'literary vivisection'.[263] However, rather than offer unequivocal and authoritative judgement of artistic merit like practitioners of the 'slashing' style, greater attention started to be paid to the workings and principles of critical interpretation.[264]

By the *fin-de-siècle* writers within naturalist, realist, and literary-critical traditions were repeatedly referring to physiological practices (especially vivisection) to test how far their respective literary approaches could become scientific. Although allusions to experimental physiology were used within particular traditions in specific ways, a determination to consider the writer's influence is threaded throughout. 'Literary vivisection' within realist, naturalist, and critical contexts helped break from Romantic notions of authorship. The trope anticipated modernism's interest in the possibilities of authorial impersonality, the representation of inner-life and individual consciousness, the problem of objectivity/subjectivity, and experimentation with form and expression. By attending to the broader language of 'vivisection' in the late-Victorian period, we gain a fuller understanding of how key issues in nineteenth-century literary and cultural history developed. 'Literary vivisection' not only described the writing styles of some notable Victorians but was also used to tussle with key literary-critical debates in the period.

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[261] See for example, Colley Cibber's preface to *Love's Last Shift, or the Fool in Fashion* (1696) when he adds a note on 'Dissecting Criticks' and Thomas Ravenscroft, *The Anatomist or The Sham Doctor* (London, 1697).
[262] [Unsigned], 'Sir W. Harcourt on Critics', p.630; Kent, 'Introduction', *British Literary Magazines*, p.xix.
[263] [Unsigned], 'Personalities in Journalism', *London Review of Politics, Society, Literature Art, and Science*, 10.259 (17 June 1865), 629-30 (p.629); Hoey, 'Lothair', p.168.
[264] Anger, *Victorian Interpretation*, pp.131-33.

Conclusion

In 1901, John Davidson – rather boldly described by his biographer John Sloan as the 'First of the Moderns' – published the first of five poetic 'Testaments': 'The Testament of a Vivisector'.[1] Davidson 'bridges the span between the Romantic period and the twentieth century'; his earlier ballads and eclogues had been well-received, but the 'Testaments' were written during the last decade of his life when his literary powers were widely deemed to be deteriorating.[2] The five blank verse monologues were addressed, rather cryptically, 'to those who are willing to place all ideas in the crucible, and who are not afraid to fathom what is subconscious in themselves and others'.[3] This was no work of propaganda. 'The Testament of a Vivisector', Davidson warns, 'will hardly recommend itself to Vivisector or Anti-Vivisector' and contains 'a new statement of Materialism' that 'is likely to offend both the religious and the irreligious mind'.[4] In a letter to the critic William Archer, Davidson reiterated that the poem was not a 'condemnation or a criticism' of its vivisector-speaker, but rather 'a dramatic account of him without any intention on the author's part to persuade the world for or against'.[5] By denying any didactic intention and by describing himself not in the first-person but as 'the author', Davidson adopted a tone of detached objectivity and impersonality mimicking that of the ideal vivisector. The poem provoked the controversy that Davidson must have expected, but not the sales that he desired. A few reviewers recognised the 'Testaments' as ambitious and important, but most considered the works to be hampered by theme, form, and homespun philosophising.[6] The *Athenaeum* objected to the poems' 'wooden […] and laboured blank verse' and dismissed 'The Testament of a Vivisector' in particular as 'a bad imitation of Browning at his worst'.[7] A reviewer for the *Daily Chronicle* wrote that, although there are 'occasional passages of beauty and power',

> Davidson insists on being the poet of 'the recalcitrant ugliness of ultra modernity,' despite the fact that his best work deals with traditionally poetic subject matter. 'The Testament of a Vivisector', a Browningesque dramatic monologue, is doomed by its theme, its inconceivable characters and philosophy, and its prosaic blank verse.[8]

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[1] John Sloan, *John Davidson, First of the Moderns: A Literary Biography* (Oxford: Clarendon Press, 1995).

[2] Andrew Turnbull, 'Introduction', *The Poems of John Davidson*, ed. Andrew Turnbull, 2 vols (Edinburgh: Scottish Academic Press, 1973), I, pp.xiii-xxxiv (p.xiii); Mary O'Connor, 'John Davidson: An Annotated Bibliography of Writings about Him', *English Literature in Transition, 1880-1920*, 3 (1977), 112-74 (p.112).

[3] John Davidson, 'Note to the Text', in *Testaments, No. 1 Testament of a Vivisector* (London: Grant Richards, 1901), n.pag.

[4] Ibid.

[5] John Davidson, [Letter to William Archer 15 June 1901], quoted in Sloan, *John Davidson,* p.200.

[6] Mary O'Connor, 'John Davidson: An Annotated Bibliography', p.204.

[7] [Unsigned], 'Recent Verse', *Athenaeum*, 3849 (3 August 1901), 153-54.

[8] [Unsigned], 'A Thesis in Verse', *Daily Chronicle*, 29 June 1901, p.3.

T. S. Eliot also found Davidson's blank verse 'hard going' and his philosophy 'uncongenial' but, in a preface to a collection of Davidson's poems, nonetheless credited the Scotsman for having made a deep impression upon him in his formative years.[9]

Davidson pursued the philosophical implications of nineteenth-century biological science. He created his own brand of materialistic monism by amalgamating concepts from major thinkers including Charles Darwin, Friedrich Nietzsche, Havelock Ellis, Ernst Haekel, Johan Wolfgang von Goethe, and Arthur Schopenhauer. By using a vivisector-speaker driven to penetrate the mystery of 'Matter', Davidson presented a dramatic account of 'the Will' which he considered to be an amoral, non-rational, ceaselessly but purposelessly striving biological instinct. This concept, 'profoundly linked to Victorian ideas of knowledge and science', also found expression in Naturalist literature and contemporary discourses around Decadence and Degeneration.[10] Nietzsche, whose impact on Davidson is hard to underestimate, had written that modern men were 'the heirs of the vivisection of conscience and self-torment of thousands of years'.[11] Davidson concluded that man's self-realisation was the goal of evolution and the means by which the material universe becomes aware of itself. As he put it in 'The Testament of a Vivisector':

> […] Chief end
> Of Matter – of the Earth aware in us,
> As of that Great Matter orbed and lit
> Throughout Eternal Night – is evermore
> Self-Knowledge.[12]

He suggested that phenomena, both animate and inanimate, were objectifications of the Will, and that evolved consciousness (or self-knowledge) was acutely painful. 'Think you the sun is happy in his flames', the unnamed 'Vivisector' asks rhetorically,

> Or that the cooling earth no anguish feels,
> Nor quails from her contractions? Rather say,
> The systems, constellations, galaxies
> That strew the ethereal waste are whirling there
> In agony unutterable. (26)

Although the vivisector initially 'began to hew the living flesh' to mitigate disease, he quickly realises that 'A bias of humanity deflects | Advancement in the true Materialist' and so '[b]egan to

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[9] T. S. Eliot, 'Preface', in John Davidson, *John Davidson: A Selection of his Poems*, ed. Maurice Lindsay (London: Hutchinson, 1961), pp.xi-xii.

[10] Regenia Gagnier, 'The Victorian *fin-de-siecle* and Decadence' in *The Cambridge History of Twentieth Century English Literature*, ed. Laura Marcus and Peter Micholls (Cambridge: Cambridge UP, 2005), pp.30-49 (p.44). See also Ritchie Robertson, 'Science and Myth in John Davidson's Testaments', *Studies in Scottish* Literature, 18.1 (1983), 85-109 (p.87).

[11] Friedrich Nietzsche, *A Genealogy of Morals*, trans. William A. Haussman & John Gray (London: Unwin, 1899), p.66; William Archer, 'Study and Stage. Zarathustra-Davidson,' *Morning Leader*, 24 May 1902, p.4.

[12] John Davidson, *Testaments, No. 1 Testament of a Vivisector* (London: Grant Richards, 1901), p.10. Subsequent references will be made to this edition and in the main text.

turn to Matter lustfully | with masculine intent' (16-17). Convinced, like H. G. Wells's Dr Moreau (another 'man of will'), that Matter 'in itself is pain', he embarks upon a programme of suffering in an effort to secure human progress:[13]

> […] cutting out
> A path to knowledge, undefiled with use
> Or usufruct, by Matter's own resource,
> Pain, alkahest of all intelligence,
> I study pain – pain only; I broach and tap
> The agony of Matter and work its will,
> Detecting useless items – I and those
> Who tortured fourscore solipeds to carve
> A scale of feeling on the spinal cord;
> Quilted with nails, and mangled flights of fowl. (22-23).

The same intellectual fascination which motivates him to vivisect enables him to discover that this programme of pain is a transference of his will to power underpinned by sexual (sadistic) impulse. For example, he vivisects a 'rotten hack' (18) and notes that,

> The whip's-man felt no keener ecstasy
> When a fair harlot at the cart's-tail shrieked
> And rags of flesh with blood-soaked tawdry lace
> Girdled her shuddering loins. (20).

He continues to experiment until he makes this 'faithful, dying, loathsome drudge, | One diapason of intensest pain, | Sublime and terrible in martyrdom' (21-22). As Ritchie Robertson explains, Davidson's vivisector accepts his sadism as 'the instrument used by Matter to spur on his research so that through him the material universe can become conscious of itself'.[14]

This is no 'ordinary Vivisector who cuts up a dog or two in an underground room of a college because he believe[s] it is the thing to do'; in Davidson's words, he sought to portray 'the passionate, obsessed giant, hating religion, despising the "humanities", searching into the secrets of Nature in his bloody way with the patience, delight, and self-torture of the artist'.[15] His vivisector has all the larger-than-life hallmarks of the typical fictional experimenter and equally few individualising traits. Furthermore, the dramatic monologue form emphasises this figure's characteristic monomania and unwavering individualism. Forsaken by his family, single-minded and self-centred, the protagonist is driven by a 'headstrong passion' (9) and '[t]he zest of inquisition' (8). The inexorable pursuit of knowledge is a 'vehicle' for his 'essential will' which links him to 'the blind striving of matter'.[16] He articulates, in extreme terms, the poet's own unflinching materialism, scepticism, and atheism. Furthermore, Davidson's comment that his speaker is driven

[13] Sloan, *John Davidson,* pp.199-200.
[14] Robertson, 'Science and Myth in John Davidson's Testaments', p.97.
[15] Davidson, [Letter to William Archer 15 June 1901], quoted in Sloan, *John Davidson,* p.200.
[16] Robertson, 'Science and Myth in John Davidson's Testaments', p.96.

to experiment by the same irrepressible impulse that compels the artist's creative 'self-torture' seems personal as well as general. The vivisector's desire to fulfil the will of Matter by cutting a never-before trodden path to knowledge on '[a] sheet unsoiled' rings with modernism's most enduring mantra, 'make it new':

> […] Oh, for a sudden end
> Of palimpsests! Expunge the o'erscored script
> That blurs the mind with poetry and prose
> Of every age; and yield it gladly up
> For me to carve with knowledge, and to seal
> With Matter's signet. (17)

Animal experimentation gave twentieth-century writers a useful frame of reference. As well as providing, for example, an apt metaphor for certain formal challenges to literary convention (such as stylistic fragmentation), 'vivisection' offered a justification for new literary methods and preoccupations. It helped to strip away old myths and pleasant fantasies about human nature. Published on the cusp of the twentieth century by a man whose writing confounds neat categorisation, 'The Testament of a Vivisector' captures a period of transition. This poem's vivisector has much in common with other scientific characters populating nineteenth-century antivivisection propaganda and fiction. Typically, however, fictional vivisectors remain inscrutable and their gazes are directed towards external subjects of analysis, whether human or animal. By contrast, the vivisector of Davidson's poem recognises that he is part of the matter that must be penetrated. For Davidson, amongst others, rendering hyper-visible previously hidden facets of experience meant uncovering the material forces which drive the human subject – the invisible and competing 'wills' which govern one's consciousness. In other words, gaining ultimate knowledge also meant surrendering oneself to the knife.

Five years after the publication of Davidson's dramatic monologue, on 17 September 1906, the government appointed another Royal Commission on Vivisection. Some scholars suggest this was provoked by persistent antivivisection complaints about the administration of the 1876 Act, combined with related public concern about the tremendous growth in animal testing.[17] Indeed, campaigners had long alleged that the AAMR and the Home Office were in cahoots and that licenses were being liberally handed out without impartial oversight. Yet neither the AAMR's influence nor protest against it were new. Most likely, concern about the civil unrest provoked during the 'brown dog affair' was the more immediate catalyst for the establishment of another Commission.[18] Pro- and antivivisection parties gave evidence and, soon, the Second Commission

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[17] E. M. Tansey, 'The Queen has been dreadfully shocked:' Aspects of teaching experimental physiology using animals in Britain, 1876-1986', *American Journal of Physiology*, 247 (1998), S.18-S.33.
[18] Elisa Aaltola, *Animal Suffering: Philosophy and Culture* (New York: Palgrave Macmillan, 2012), p.86.

became hampered by many of the same thorny issues as the First. Proceedings dragged on until March 1912, by which time two of the ten original commissioners had died. The final report stressed, once again, the importance of adequate anaesthetisation yet stopped short of giving further guidance on the issue. Recommendations included doubling the numbers of laboratory inspectors (from two to four), maintaining more detailed records, and establishing a committee to advise the Home Secretary on matters relating to animal testing.[19] These were additional checks designed to increase transparency and accountability rather than to create fundamental change.

Despite initially enjoying high levels of public support, the antivivisection movement made little progress in curbing the practice. The smaller and less wealthy pro-vivisection lobby gradually won over the government, legislature, and universities.[20] As the twentieth century progressed, animal experimentation produced results that were harder to dismiss, and which were directly relevant to public health, such as vaccines. The two World Wars forced the campaign into periods of dormancy; it was harder to scrutinise animal research when the Home Office only produced skeleton reports, and bans on private members bills meant much reduced recourse to Parliament.[21] There was also little appetite for animal welfare when human lives were at stake, and opposition to the military's blast injury and poison gas experiments was deemed unpatriotic.[22] Broad intellectual and social changes, such as a less hostile relationship between science and religion, also rendered 'the dualistic rhetorical politics' and the antagonistic binaries that underpinned antivivisection propaganda less effective.[23] During peacetime, antivivisection groups competed with other social causes vying for public and government attention. By then, the movement had broken with many of the rhetorical strategies used in the previous century, especially religious frameworks. Its purpose broadened to include related animal welfare issues such as fur- and leather-wearing; 'animal rights activists' rather than 'antivivisectionists' described such workers.

In his statement to the Second Royal Commission, Stephen Coleridge (the Honourable Secretary of the NAVS) reeled off the names of eminent literary writers who supported the cause and 'whose opinions upon a matter of conduct cannot be disregarded'.[24] These included Alfred Tennyson, Robert Browning, John Ruskin, James Anthony Froude, George Meredith, James Martineau, Leslie Stephen, Mark Twain, Leo Tolstoy, and Victor Hugo. 'As the humble spokesman of this constellation of great writers', he declared, 'I feel the extreme inadequacy of my powers fitly

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19 [Anon.], *Final Report of the Royal Commission on Vivisection* (London: 1912).
20 Bates, *Anti-Vivisection and the Profession of Medicine,* p.14; Obenchain, *The Victorian Vivisection Debate,* p.225.
21 Obenchain, *The Victorian Vivisection Debate*, p.236.
22 Bates, *Anti-Vivisection and the Profession of Medicine*, p 9, p.12.
23 Li, *Mobilizing Traditions,* p.319.
24 [Anon.], *The Royal Commission on Vivisection, Evidence by the Honourable Stephen Coleridge* (London: NAVS, 1907), pp.13-14.

to give voice to their solemn condemnation of painful experiments on animals as a practice repugnant to the promptings of humanity and degrading to mankind'.[25] Foregrounding the perspective of literary writers, Coleridge is most anxious about his ability to 'give voice' to them, rather than to laboratory animals. Evidently, the movement's leaders still considered literary persons uniquely willing and able to express the claims of brutes, and it trumpeted a steadfast allegiance to a type of 'literary culture' that was rapidly waning.

Indeed, the philosophy and tactics of the antivivisection movement now seemed out of date. Romanticism had produced a repository of literary resources upon which antivivisectionists had heavily relied. These texts helped generate humanitarianism and promote the didactic and inspirational function of literary reading and writing. Amateur critics, including notable antivivisectionist leaders such as Coleridge, Lizzy Lind-af-Hageby, Frances Power Cobbe, and Henry Salt, were 'most insistent on literature's moral basis and power to shape society'.[26] As English literature became consolidated as an academic discipline, however, this group was overtaken by a professional critical class.[27] Tennyson, Browning, and Matthew Arnold had touted literature's moral purpose (and thereby their own prophetic function) but, by the Edwardian period, writers were less likely to see themselves or their work through this lens. The rise of realism, modernism, naturalism, and aestheticism 'freed literature from its moral and social mission' and 'contributed to a decline of authors' traditional moral prestige' while 'art for art's sake' directly challenged the moral and socio-political use of literature; absolute moral truths and didacticism were no longer in vogue.[28]

The diversification of the literary landscape around the turn-of-the-century brought fresh challenges that the antivivisection movement found unnavigable. The artist was no longer expected to represent bourgeois culture and ethics, and modernist writers in particular self-consciously broke with literary tradition. This disrupted the antivivisectionist message, conveyed most explicitly by humane genealogies, that readers could turn to a cross-culture and cross-period literary or artistic 'personality' for moral guidance on various matters, including the proper treatment of animals. Furthermore, vivisection offered various opportunities rather than hindrances to a new generation of novelists, poets, and playwrights interested in charting the unconscious self, exploring materialism, and engaging with scientific practices and new technologies. In fact, the representational preoccupations opened up by vivisection debates had long sat uneasily alongside

[25] Ibid., p.14.
[26] Li, *Mobilizing Traditions*, pp.318-19. See also Josephine M. Guy and Ian Small, 'The British "man of letters" and the rise of the professional', in *The Cambridge History of Literary Criticism, Volume VII, Modernism and the New Criticism*, ed. by A. Walton Litz, Louis Menand & Lawrence Rainey (Cambridge: Cambridge UP, 2006), pp.377-88.
[27] Ibid.
[28] Li, *Mobilizing Traditions*, p.318.

a socio-political commitment to animal welfare; since the movement's inception, literature had been a protest tool as problematic as it was powerful. Despite concerted efforts to present writing and vivisecting as rival activities, pen and scalpel too often resembled each other.

In his essay 'Anti-Vivisection: Popular Feeling and the Advancement of Science', initially published in the *Sunday Express* (July 1927), H. G. Wells suggested that the vivisection question served to 'classify men's minds'.[29] Interested in disentangling 'the root of the feelings of the anti-vivisectionist', he finds that what antivivisectionists really cannot bear is 'the thrusting of a scientific probe into mysteries and hidden things'.[30] Wells continues:

> The world that the pro-vivisectionist is by his nature impelled to strip bare, the anti-vivisectionist clothes in rich swathings of feeling and self-projection. He imagines souls in birds and beasts, long memories and intricate criticism. He can imagine dogs and cats pressed by forebodings, a prey to anxiety, vexed and thwarted. […] He enriches reality but at the same time he distorts and conceals it by these ornamentations. He is afraid of bare reality as a child is afraid of a skeleton.[31]

Supporters of vivisection, such as himself, were disposed to 'see things plainly', even if this meant confronting unpleasant or unnerving truths. The experimenter was at the forefront of this empirical drive for knowledge as a 'characteristic good'; he did not seek practical application, but neither did he reject it, just as he was not dismayed by pain, nor welcomed it in his laboratory.

The photograph below, taken when Wells was at university studying for a science degree, shows the young man posing beside the skeleton of a gorilla whose frame has been arranged upright, like that of a human being. The young man stands, knee cocked, with one arm nonchalantly draped around the primate's neck while in his right hand he grasps another skull (see Fig. 25). The gorilla's remains, thus arranged, present man's animal ancestry, while the second skull reminds the viewer of another inescapable biological law: mortality. Yet even this image is unable to demonstrate the 'bare reality' of man and animal's shared materiality without scientific truth being inflected by literature, drama, and art. Although the scene is captured by the camera – a technology that promised to narrow the gap between representation and reality – it does not succeed in circumventing the artist's pencil or brush. The *momento mori* iconography situates the photograph in a long and rich history of portraiture, and Wells appears like Hamlet mediating on Yorick's skull, his posture and his props both part of a dramatic gesture.

[29] Wells, 'Popular Feeling and the Advancement of Science', p.221.
[30] Ibid, p.225; p.228.
[31] Ibid., pp.229-230.

Figure 25. [Photograph] H. G. Wells posing with a gorilla skeleton [now held in the Grant Museum of Zoology].

Although Wells denigrated antivivisectionists for being naïve idealists 'afraid of bare reality as a child is afraid of a skeleton', he shared some of their reservations. Davidson's materialist philosophy is ultimately undone when he claims a transcendency for poetry.[32] Similarly, Wells – like other writers of the time who insisted that literature should submit to science – was reluctant to abandon an artistic, if imperfect, vision. In his essay, Wells reflected that the 'type of humanity' represented by the vivisector and his supporters 'may or may not be increasing in the world', since,

> Most of us do not stand up to knowledge like that. We want to keep our illusions. We do not want knowledge for ourselves or others very much, we prefer to be happy in our imaginations.[33]

After all, once 'dream-enriched' animals are stripped bare, the related stories we tell about human beings, including ourselves, are also pulled to pieces. Moreover, as Wells acknowledged, the 'world of fantasy' that antivivisectionism sought to protect will always be 'cherished' and 'necessary'.[34]

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[32] Ralph B. Crum, *Scientific Thought in Poetry* (New York: Columbia, UP, 1931), pp.228-37.
[33] Wells, 'Popular Feeling and the Advancement of Science', p.229.
[34] Ibid., p.228.

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