Historical, Fictional and Illustrative Readings of the Vivisected Body 1873-1913

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Contents

Abstract

This thesis analyses why the practice of vivisection captured the imagination of a small section of late-Victorian society, and how these individuals articulated their concerns. By adopting an interdisciplinary approach, this study brings together the texts of both anti and pro-vivisectionists to place literary texts alongside medical textbooks and illustrations, essays and campaigning leaflets to suggest a representation of the vivisector throughout the different texts assembled. The first chapter explores the interaction, in print, between activist Frances Power Cobbe and physiologist, Elie de Cyon alongside the ways in which the anti-vivisectionists used images of vivisected animals, sourced from scientific manuals, to assist in constructing the movement's identity. The second chapter analyses the lecture notes of two young medical students published as The Shambles of Science (1903) and how the authors strived to secure a literary representation for pain. These findings will then pave the way for an examination of how anti-vivisection rhetoric influenced fiction. The next chapter is concerned with the relationship between the 'heart' and 'science' and considers the more positive outcomes for those existing on the periphery of scientific experimentation. The fourth chapter examines the relationship between vivisection and hydrophobia, while simultaneously considering the implications of nurturing the young vivisector. The final chapter examines how the signature of the vivisectionist can be read through the incisions made on the surface of the opened body. By delving into these interactive, textual and imaginative bodies, this chapter explores the ways in which the vivisected body, traced by the scalpel and relayed by the instrumentation of the laboratory became a literary object.

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Published parts of this thesis are as follows:

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Introduction: Historical, Fictional and Illustrative Readings of the Vivisected Body 1873 – 1913

This thesis explores the late-Victorian context in which the anti-vivisection movement developed its critique of the practice of vivisection. There is a wealth of literature produced across the late-nineteenth century all of which demonstrate that the medical profession was challenged by the anti-vivisection debate. Based on articles from the Zoophilist, the official periodical of the Victoria Street Society; pamphlets, essays, fiction, poetry, and images of vivisected animals, this study focuses on the methods used by activists to articulate their concern that vivisection transgressed boundaries and instigated "a moral lobotomy on its practitioners" (Straley 355). By embracing a new historicism approach, this thesis adopts a parallel reading of literary and non-literary texts of the same historical period. Through analysing the movement's periodicals, which have received little interest from scholarly research, alongside the fiction of the debate, this study considers why one strand of scientific investigation captured the imagination of a small section of society. This thesis does not place "literature on the one side and history on the other" (Bennett and Royal 118) or treat the categories of 'literature' and 'history' as intrinsically separate. Although acknowledging that literary texts transcend history, the writings of the vivisection debate determine an understanding of the time in which they are set. It was common for activist writers to use the courtship plot to drive the vivisection topic forward and for this reason, this study has selected fictional texts that incorporate such secondary issues as hydrophobia[1] and the role of maternal nurturing. In doing so, this it will expand on earlier discussion that has focused upon women's identification with the wounded animal to suggest positive interpretations within experimental science. The "scribbling women" (Smith 37) who wrote for the periodicals were

[1] Rabies was the disease of the dog. In humans, the virus was recognised as hydrophobia. See Pemberton, Introduction.

also those that successfully campaigned to change legislative rights for animals. By exploring the topics covered in specialist periodicals, this thesis interrogates why the anti-vivisection movement was considered, often in a disparaging context, a 'women's cause.' As Mary Ann Elston has surmised, late-Victorian women were not only "wives and mothers, they were [also] the guardians of family health" (277). These women were fortuitously placed to recognise the moral cost of vivisection to domesticity. Anti-vivisectionists held the opinion that vivisectors lacked sympathy and needed to be 'hardened' to the pain of others to carry out their profession. In turn, pro-vivisectors diagnosed women anti-vivisectionists as suffering from 'zoophile-psychosis' (Buettinger 857) and were thereby able to categorise the activists with a mental illness and, in turn, attack the credibility of their judgement. At times, each side of the debate appeared more concerned with the character of their opponent, rather than the controversy per se. This study adopts the original stance in acknowledging the contributions made by both the pro and anti-vivisectionists, and to determine how the vivisected body came to be read as a literary object.

HISTORICAL SETTING OF THE DEBATE

The start date of this thesis is the publication date of John Burdon Sanderson's Handbook for the Physiological Laboratory (1873). Sanderson was Professor of Physiology at University College London and co-edited the Handbook with Emanuel Klein, Professor of Comparative Pathology at Brown Animal Institution, T. Lauder Brunton, Professor at University College London, and Michael Foster, who held a Praelectorship in Physiology, Trinity College, Cambridge[2]. As Christopher Pittard suggests, the late-Victorians considered "[v]ivisection [as] suspiciously continental" (161) and Sanderson's Handbook was the first British publication of physiology that was accessible for a lay-audience. The text revealed the

[2] See French, chapter 3, for extensive coverage on the relationship between the *Handbook* and The Royal Commission into Vivisection (36-60).

similarities between the growing practices in Britain and the established ones based abroad. The Handbook received considerable press coverage that was primarily due to an omission in Sanderson's preface regarding the use of anaesthesia. Sanderson's oversight contributed to the considerable attention the Handbook received at the Royal Commission on Vivisection (1875). The Government Blue Books carried transcripts of the findings of the Commission and Klein's comment that he "only bothered with anaesthetics ... to avoid the scratches and bites of agonized dogs or cats" (French 104) supported much of the anti-vivisection propaganda. This thesis is bookended with the last edition of Louisa Lind-af-Hageby and Leiza Schartau's The Shambles of Science published in 1913. By this date, the authors were aware of a symbolic shift in the presentation of animal rights: most of the earlier activists and pro-vivisectionists were now deceased and the cause was entering a new era. For this reason, Lind-af-Hageby and Schartau realised that the movement would need to adopt fresh tactics to progress and survive. The Shambles of Science went through five editions in ten years, and this thesis concerns itself with the first and last editions. Except for the prefaces, to date, it has not been possible to locate the intervening editions.

Between 1873 and 1913, there were important legislative events that changed the face of the controversy for both parties, namely the Royal Commission into Vivisection (1875) and the Cruelty to Animals Act (1876).[3] Susan Hamilton has noted in "Pets and Scientific Subjects" that the Act emerged in response to manage the concern arising from the trial of Sir David Ferrier on 17 November 1881**.** Ferrier was Professor of Forensic Medicine at Kings College Hospital and Medical School, London, and he was charged, as reported in The London Times, of "perform[ing] experiments, calculated to give pain to two monkeys, in violation of the restrictions imposed by the Vivisection Act" (10). As Steve Farmer has

[3] For further details on the 1876 Cruelty to Animals Act, see French, especially chapters five and six.

surmised, the "[a]nti-vivisectionists cried foul and used Ferrier as a test case for the 1876 Act" (15) but there is evidence to suggest that the Ferrier trial aided fictional plots. In Heart and Science (1883), Wilkie Collins cites Ferrier's "writing on the Localisation of Cerebral *Disease"* in his preface addressed "to his readers in particular" (39). The reference to Ferrier's study confirms the legitimacy of Collins's research in constructing his fictional vivisector, Dr Nathan Benjulia. Additionally, the heartless nature of H. G. Wells's Dr Moreau owes much to Klein's contribution at the Royal Commission. Laura Otis has extensively examined the Ferrier trial and its relationship to the fiction of Collins and Wells with her essay "Howled Out of the Country: Wilkie Collins and H. G. Wells Retry David Ferrier" (2007). Otis advocates the necessity of reading these fictional representations of medical science in parallel with the public record (20). This thesis extends beyond the reportage of the vivisection trials and reads their literary representations as a question of negation between "text and reader within the context of a history … that cannot be closed" (Bennett and Royal 120). Historical texts are not to be construed as either the background or the essential key to understanding the literary text. Rather, the trials are to be understood as texts through which questions of politics and power can be negotiated to show that these representations of literary trials challenged the core values of science in numerous ways that were unavailable during an actual trial. As Beverley Southgate has further suggested, history and fiction must be considered in their "interrelatedness, interdependence and the borderlands they share" (20) and the anti-vivisection cause was like other reform movements which characterised the period: it vied for public attention with a great many other issues that appealed to the same kind of fear and hostilities attached to science and medicine. Foremost among them were the anxiety surrounding compulsory smallpox vaccination, socialism and the passing of the Contagious Diseases Acts (CDAs) in 1864, 1866 and 1869[4] but as Richard D. French points

[4] See Elston for information relating to corresponding debates 274-5.

out, "the real issues" in the debate "revolved around the place and scientists in Victorian Britain" (345). Between 1870 and 1900, "English physiology was transformed from a subsidiary branch of anatomy to an experimental school of international reputation" (Richards 27),[5] and the question was not so much one of scientific method as one of cultural dominance - defined most sharply by the emergence of T. H. Huxley as the prophet of science (Harris 103). Doubt about vivisection, whether medical or moral, has been virtually coeval with the emergence of the practice from antiquity but as Hilda Kean has observed, the "real growth of vivisection in Britain dated from Darwin's arguing for an understanding of the commonality between species" (97). As a public debate, it began in 1863, when the first organised agitation against animal experimentation took place in Florence, led by Frances Power Cobbe[6] who had discovered that horses were used to practise surgical techniques without the use of anaesthetics (Hopley 2). In response, Cobbe wrote "The Rights of Man and the Claims of Brutes" (1863) and distributed the pamphlet through the Victoria Street Society for the Protection of Animals Against Vivisection (VSS).[7] Cobbe did not deny that vivisection had provided man with knowledge in the past, but believed that the advancement of science could be reached by other means that did not justify the 'torture of the beasts'. Cobbe's part in the anti-vivisection movement led to the forming of the International Association for the Total Suppression of Vivisection in early 1875 and the Victorian Street Society, headed by Cobbe, later in the year. The London Anti-Vivisection Society was formed in 1876, followed by the British Union for the Abolition of Vivisection (BUAV)[8] in 1898. During this time, several other smaller parties existed but these groups often appeared to work at odds with one another, namely over the decision to either abolish vivisection

[5] For a comprehensive account and penetrating analysis of the development of English physiology, see Richards 27-56.
[6] For further information, see Obenchain 24-26
[7] The Victorian Street Society for the Protection of Animals Against Vivisection was later known as The Victorian Street Society (VSS).
[8] BUAV changed its name to Cruelty Free International in 2015.

entirely or to modulate the procedure through stringent guidelines. Despite the fragmentation, the movement won a few victories, notably the passing of the Cruelty Act[9], which remained intact for the next one hundred years. As Hamilton has suggested, the "anti-vivisectionists presented themselves as representatives of a broader public" (On the Cruelty to Animals Act 2), and some activists saw the bill as too lenient and essentially legalising the very issues they disputed. The Act was received with discontent on all sides and became known as the "Vivisector's Charter" by those who opposed its passing. Sir Eric Grant from Leonard Graham's novella *The Professor's Wife* (1881) admits that the profession was "legalised" by sympathetic Government inspectors, leaving the activists impotent "at their own game" (45). Graham's text shows how late-Victorian fiction was keen to follow on from the debates. Throughout this study, it has been evident that the historical and fictional writings have proved to be inseparably twinned to such an extent that one cannot be understood, or even conceived, without the other. However, an objective understanding of the debate can only be obtained by reading between the lines of animal reports, outraged letters and inflammatory propaganda. Lorraine Daston and Peter Galison define "objectivity [as] the suppression of the self" (36) but in the words of George Levine, it is difficult to "empt[y] the mind of all prejudice" (Dying to Know 19), especially when concerned with the intricate details of a controversial topic such as vivisection. Faced with numerous accounts of "baked and boiled" dogs (Cobbe, Bernard's Martyrs 13) and "rabbits dying in convulsions" (Rhodes 66) it is difficult for any scholar of vivisection to stifle emotive response and remain "at the margins of the text" (Bennett and Royal 120).

Victorian Britain produced a plethora of eminent scientists, among them Michael Faraday, Sir Humphrey Davy, Charles Babbage, Sir Charles Lyell, Charles Darwin, Alfred

[9] For details, see Michael A. Finn and James F. Stark 12-23 and Obenchain 90-96. Also, Hamilton "On the Cruelty to Animals Act, 15 August 1876".

Russel Wallace, Thomas Henry Huxley and James Paget. As Roslynn D. Haynes has noted, many of these individuals were "skilled communicators of science, [and] would capture the public imagination and have a considerable effect on the status of science in an increasingly literate society" (105). With the vivisection debate, pro and anti-vivisectionists were keen to promote their writings as authentic representations of the controversy, and it could be said that the fiction produced from the vivisection debate acts as a cultural artefact in determining a historical event. The writings of the anti-vivisection movement were reflexive in illustrating the imagination of their scientific opponents. Martin Willis succinctly notes that "imagination … enables knowledge-production to occur" and further remarks that the imagination "as performance" has historically acted as a "far greater force in mobilising science" (3). Legal trials and publication of activist propaganda has shown that the pro-vivisectionists were reluctantly drawn into a public debate. Although it is evident that scientific texts fuelled the imagination of the activists, this contagion was reflexive. Images of vivisected animals published in activist literature forced readers to engage with "imagined performances captured on the page" (4). In turn, science professionals were required to acquire fresh imaginative ways of communicating their ideas to thwart the derailment of their profession by the animal rights movement. Southgate states that historians "have long prided themselves on producing works that specifically contrast with fiction" in a way that is "verifiably true" (1). In the latter half of the nineteenth century, science became "less concerned with questions of Truth" (Haynes 105) as it moved further away from its origins as the whole body of knowledge by becoming specialised and more occupied with specific problems. This trend toward specialisation was reflected in the Victorian novel, where characters were no longer described as 'scientists' but as astronomers, biologists, geologists and vivisectors. The vivisection writers attempted to represent a discipline of which they had little direct knowledge but as Mary Hesse has noted "[n]either theory nor observation language are

immune from correction" (xvi). With this comment in mind, this this study unpicks numerous instances of adjustment and excision of an 'opponent's' text from both sides of the debate.

Fiction does not always aspire to represent the 'truth' but literary writings are embedded within the economic and social circumstances in which they were produced and consumed. Although fiction hints at a strand of historical 'evidence', these instances are susceptible to being rewritten and transformed and become part of a circulation of "social energies" (Bennett and Royle 119). The cultural history of the vivisection debate is in many respects textual but there can be no knowledge of the past without interpretation. At times, history and fiction may appear competitive to "distinguish themselves" in "superiority in the disciplinary hierarchy" (Southgate 20) but this thesis declines to 'privilege' the literary text. As Kiernan Ryan states that to understand the historicity of a specific text, it demands of any analysis the task of "stitching it back into the intertextual quilt of its initial context" (xiv). It is only possible to grasp any understanding of the vivisection debate by exploring the trajectory of the activist imagination. Instead of a literary 'foreground' and a historical 'background', this study envisages a mode of study in which literary and non-literary texts are given equal weight and constantly inform or interrogate each other. In the words of Peter Barry, the objective of this study is to not represent the past as it really was, but to "present a new reality by re-situating it" (175). This thesis constitutes another remaking, another permutation of the past. It juxtaposes literary and non-literary texts, reading the former in the light of the latter by looking at patriarchal structures and their perpetuation.

The Oxford English Dictionary confirms that there is no alternative for the word 'vivisection'. No other word authentically defines the procedure, not even the closely related 'dissection.' Throughout the late-Victorian debate, the word 'vivisection' became reliant and,

at times, vulnerable to metaphoric interpretation. As Charlotte Sleigh has deduced, "metaphors and images act as frames for knowledge" (5) and are "forever suggesting new connections" (15). This thesis will show how the writers of the debate used the term 'vivisection' as a subtle metaphor to illuminate wider societal issues, namely those concerning the working-class, repressive legislation and the vitality of the natural world. Mary Hesse has demonstrated the ways in which natural scientists relied upon metaphors such as "waves", "packets" and "elevators" as predicates that assist in explaining scientific ideals. (111) Metaphors nourish the formulation of new ideas throughout this thesis and an example is the incorporation of hydrophobia. The virus used by writers as an agent of contagion to challenge new ideas central to the progress of knowledge. The late-Victorians considered the virus a 'working-class' infection but activist writers stripped it of its medical heritage and redefined it as a maternal threat. Throughout this study, vivisection as a practice, is shown to be often suffocated by other identities attached to character. Primarily it acts as a frame of communication to engage scholars in the matters that concerned people at the time the texts were published. Throughout this thesis, vivisection is presented as the stealthy occupation of needlework, romance, maternal nurturing, fragmentations of class and a virus.

THE ROLE OF FICTION IN THE ANTI-VIVISECTION DEBATE

As Anne Stiles has remarked, "[s]cientific genius was a timely theme well suited for imaginative literature" (127) and a plethora of novels, short stories and poetry were inspired by the events attached to the controversy. While it is not a surprise that these writings frequently lacked cohesion, many of the texts do justify the resurgence of an interest in this topic. The general content and style of the activist literature would initially suggest that a considerable number of the contributors could have been individuals not possessed of first hand scientific or literary experience. The topic did come to the interest of notable cultural

and public figures. Alfred Lord Tennyson, Christina Rossetti, John Ruskin, Lewis Carroll[10], George Bernard Shaw, Robert Browning and Thomas Carlyle all supported the anti-vivisection movement in various ways through literature. In turn, the pro-vivisectionists could boast such names as Charles Darwin, Sir Victor Horsley, Stephen Paget, T. H Huxley and Wells. Although Darwin and Huxley appreciated the role of vivisection in advancing scientific experimentation, neither were prolific vivisectors. Regarding the Anti-Vivisection Bill, Huxley served on the Royal Commission and although Darwin made many favourable references to the French physiologist Claude Bernard in The Expression of Emotions in Man and Animals (1872), and was sympathetic to the anti-vivisection cause, he found some of the rhetoric inflammatory. It was likely that for this reason, that Darwin's name is notably absent from much of the debate.[11]

Vivisection novels do not predominately focus on love but romantic tropes outweigh scientific integrity throughout most plots. It is conceivable that writers adopted this approach to compensate for a lack of expertise, but this tactic could also have prevented writers from alienating those readers who may have turned away from the cruelty and methods associated with vivisection operations. It is unlikely that many anti-vivisection authors had made the acquaintance of a real-life vivisector or laboratory and it is fair to presume that scientific profiles published in specialist periodicals were embellished to create a textual fiend to fit the plot. On 1 August 1884, the Zoophilist published the serialised "Vivisector's Directory". The 'Directory' was a chronological profile of English and continental vivisectors that documented their scientific speciality, personal details and references to published articles.

[10] Charles Lutwidge Dodgson (1832-98) published anti-vivisection literature under his pen name Lewis Carroll.
[11] For further discussion on the role of scientific individuals connected to the debate, see French, especially chapter 5.

Some of the profiles provided aesthetic qualities of an identified vivisector and, at times, appeared like a casting list for fictional writers.

Anne DeWitt has noted, that the anti-vivisection writers were often more concerned with the nature of the vivisector than with the animals themselves (148). The anonymously published Merciless Love (1900) depicted Olive Rolleston as a young woman who did "not care for animals in the least." At the outset, Olive is an active pro-vivisectionist, and her general concern was for the "humane treatment [of the] helpless" (71). Although Olive's stance changed over the course of the novel, the author was keen to emphasise that not all the activists were partial to animals.

In 1883, Wilkie Collins published his novel Heart and Science, which is now recognised as the most well-known text depicting the debate. Closely following Collins's ownership of the 'vivisection novel' is H. G. Wells's speculative fiction, The Island of Doctor Moreau (1898). Wells's novella is widely acknowledged for its adverse and, at times, graphic, portrayal of vivisection methods. Lesser known texts such as Florence Marryat's An Angel of Pity (1879), Florence Fenwick Miller's *Lynton Abbott's Children* (1879), Leonard Graham's *The Professor's Wife* (1881), Maria Daal's *Anna: The Professor's Daughter* (1885), Sarah Grand's loosely autobiographical The Beth Book (1897) and G. Colmore's Priests of Progress (1909) all engage with the topic of vivisection within a romantic quest. Unlike Collins who wished to "leave the detestable cruelties of the laboratory to be merely inferred," (12) Marryat and Colmore deploy their texts to place the reader inside the laboratory to view the "cutting off the limbs" (Marryat 289) and to hear the "howls and groans" (Colmore 257) of the animals. In *Lynton Abbott's Children,* Fenwick Miller takes the unusual step of placing vivisection in the hands of a juvenile male. Like Graham's The *Professor's Wife,* Marryat explores the role of maternal nurturing of the young vivisector. Grand was a "didactic novelist, anti-vivisectionist and sexual purity campaigner" (Elston

280) and these interests materialised in the portrayal of her vivisector Dan Maclure who manages a Lock Hospital and reinforces the suggested link between experimental science, women and animals.

The fear that vivisection would transfer from non-humans to humans was a major concern for the late-Victorians. In Barry Pain's The Octave of Claudius (1879), Claudius Sandell enters into a Faustian pact with Dr Gabriel Lamb to "sell himself, body and soul, for one thousand pounds" (30). Arabella Kenealy's short story "A Human Vivisection" (1896) describes a vivisection experiment performed on a human "subject" (40) that raises concerns more about social hierarchy than scientific progress. Likewise, *The Professor's Last Experiment* (1888) by Stanley Stewart and Ritson Stewart is also concerned with the emotional and ethical cost of human experimentation to the vivisector. Almost one hundred years prior to the first artificial heart being implemented in a human chest, Sir Ronald Ross wrote the gothic short story The Vivisector Vivisected (1882)[12]. Inadvertently, Ross's vivisector performs an operation with an artificial heart upon his sibling but in line with other vivisection novels, the plot reveals the moral repercussions of a failed romance. Authors that explored the threat of human experimentation, rarely incorporated animal vivisection in their plots and for this reason, they appeared to exclude the core message of the movement.

There exists alongside the more recognised titles, a sub-genre of anti-vivisection texts that are now largely out of print. These novels and short stories are often relegated to the footnotes of scholarly analysis. Any explanation for their neglect is purely speculative but most of these novels remain in their original three-volume format and have not aroused enough interest for a modern print run. The novels often bear titles that do not lend themselves favourably to any scholarly library catalogue search for 'vivisection', and often

[12] For details of Ross's medical background and Nobel Prize achievement, see Eli Cherin.

only rise above the literary parapet when accompanying a discussion concerning the more well-known texts. Compton Reade's Who Was Then the Gentleman? (1885) Ellie Marston's The House of Chloe (1900), the anonymously published Merciless Love (1900) and Myrtle Reed's A Spinner in the Sun (1906) have as much to offer the debate as the more familiar titles. On 2 July 1900, *The Zoophilist and Animals' Defender* provided a review of The House of Chloe. The anonymous reviewer said that "apart from its views … on the subject of vivisection, the book is well worth reading and every one who reads it will be charmed with Chloe the heroine" (87). The *Zoophilist's* review focused upon the aesthetic and moral qualities the "motherless girl" (5) Chloe Mainwaring, rather than highlight the relevance of vivisection to the plot. Likewise, Reed's A Spinner in the Sun appears more concerned with the cost of a woman's beauty as the price for loving a vivisector over any detailed interaction of vivisection practice itself. Late-Victorian Christian theologians often sought to account for physical pain and suffering within a religious context. George MacDonald's Paul Faber: A Surgeon (1878) and Maria Corelli's The Master Christian (1900) both interweave concepts of vivisection with a religious subtext. J. Cassidy The Gift of Life (1897), H. Huntley The Birthright of Grimaldi (1913), Maarten Maartens The Healers (1906), William Babington Maxwell The Guarded Flame (1906), E. Melena Gemma or Virtue and Vice (1897) and E. S. Phelps Through Life Us Do Part (1908) are additional novels that address the theme of vivisection as a secondary consideration. At times, the place allotted to vivisection is so small as to warrant the topic almost non-existent. The authors of these novels often interweaved social issues, such as the endemic problems with employment, childhood diseases, and laws of primogeniture and poverty. The incorporation of these topics in the plot, at times, often appeared to overwhelm the subject of vivisection. For this reason, this thesis provides a small space for the inclusion of a selection of these forgotten voices.

In addition to plots of human experimentation, there exists the emotive anthropomorphic short stories and poetry that centred on a devotional pet, which was usually threatened with vivisection. The autobiography of the "tiny Maltese" (2) Puck (1870) recalls "his vicissitudes, adventures, observations, conclusions, friendships and philosophies" but his story is edited' by Ouida, suggesting that readers could emotionally connect much more easily with nonhuman animals than humans. In December 1876, the pastoral periodical The Sunday at H*ome: a family magazine for Sabbath reading"* published the short story "Only a Dog" where the heroine's hand in marriage is won by rescuing the family pet from the vivisector's bench. Adding to these canine tales is Cobbe's The Friend of Man, and his Friends, the Poets (1889). As DeWitt points out, there was a shift between the writers of fiction and poetry, namely the latter were not concerned with the character of the vivisector, but rather with the nature of the animals and the relationship between pets and owners. Given that this claim shifts the focus from the experimenter to the experimental animal, the comment is an obvious but rarely stated observation. By adopting such modes of attack, it meant that the activists were able "to circumvent what they lacked [scientific] expertise" (133) and respond to a cultural debate in a swift and concise manner. Although DeWitt rightly notes that there is less of the animal-centred anti-vivisection literature in comparison to the novels (148), the movement's periodicals did publish anthropomorphic poetry and short stories with regularity, which suggests a faithful readership for this strand of 'literature.' In March 1881, The Zoophilist introduced 'The Playground' to its readers. 'The Playground' was a section reserved for contributions on any aspect of the vivisection controversy but it primarily published anthropomorphic content. Although this specialised section only ran until the following June, it offered its contributors the freedom to let their pens "roam more imaginatively" (Southgate 1) because it emphasised that it was a haven from the more detestable aspects of vivisection. By acknowledging a shift between the sentimental writings

of the periodicals and the humanistic morality of the novels, it is credible to contemplate that a more varied community of writers, readers and correspondents existed within the wider framework of the debate than has earlier been considered. In the first instance, it appears that a shared interest in animal rights united the movement's writers, but it is fair to speculate that the contributors to the periodicals were not likely to be those that authored the novels and poetry. It was rare that the specialist periodicals reviewed the fictional works with regularity and, at times, fiction appeared at odds with the legislative and core messages that supported the journal writer's enthusiasm. It is clear from the topics covered in the novels, that authors were indebted to the subject matter discussed in the periodicals but it did not appear as though "cultural traffic ran both ways" (*Darwin's Plots.* Levine xii). As Hamilton has noted, "the practice among antivivisection periodicals of circulating their material primarily through libraries, coffee houses [and] working people's clubs, as well as personal subscriptions" (25) meant that there is no reliable source of information regarding circulation figures. Similarly, French suggests it is plausible to presume "that the movement's periodicals reached only a small proportion of the population" (264), and this explanation could account for the narrow imaginative plots and pathos drenched poetry. As most literature was penned either hiding behind pseudonyms or published anonymously, it is difficult to pinpoint specific literary identities. The novels did possess the greater ability over the periodicals to tap into an established readership via bookshops and libraries as authors habitually adopted sensation and gothic tropes. Readers could have been coerced into reading vivisection texts because they felt familiar with earlier novels that also played on the nerves and thrilled the senses.

Writers from the scientific field also offered their own literary contributions in response to the vivisection question, although they were not as prolific in their output as their opponents. The pharmaceutical chemist Walter Hadwen declared in the preface of his lengthy and over-detailed anti-vivisection novel The Difficulties of Dr Deguerre (1926), that "[n]o

medical man during his student days is taught to think" (7). Hadwen does not expand upon his statement but whilst his characters that inhabit the text are not by any means intellectually stretched, they can boast thought provoking illustrative names. For example, Dr Syringham injects anti-toxins, (265), Mr Pleadwell campaigns against muzzling, (534) and there is a collective of surgeons called Chippaway, (46) Cuttensaw (48) and Slashett (49). In 1926, an anonymous reviewer for the JAMA said of Dr Deguerre that the "story is conspicuous most of the time by its absence" and concluded that it was "inconceivable that anyone could ever wade through its 600 pages of mediocrity" (1326). Indeed, at times, Hadwen buries the vivisection plot: it becomes suffocated and strives to be heard against the varied, and disjointed topics of sleeping sickness, germ theory, evolution, circulation of blood and a lengthy and somewhat misplaced collection of chapters on the Malta fever and the benefits of the fresh milk supplied by the local goats. These supplementary topics appear specific to The Difficulties of Dr Deguerre as they rarely make an appearance in other anti-vivisection novels, which could suggest that the novel became a hobby-horse for Hadwen to promote a range of issues that had little to do with the vivisection debate. The Difficulties of Dr Deguerre may be arduous in its plot structure, content and length, but Hadwen was unusual in publicly contributing to the anti-vivisection voice from a scientific perspective. Science professionals reacted to threats to curtail their profession but with very few exceptions, they appear to have ignored much of the activist literature. One notable exception was Elie de Cyon's response to Cobbe's essay "Light in Dark Places" and 1876, The Edinburgh Medical Journal published 'Vivisection: A Satire' that challenged the core of the anti-vivisection argument. The satire's rhyming couplets cut as deftly through the activists' manifesto as the surgeon's scalpel sliced through flesh. By adopting the vocabulary of the anti-vivisectionists, the satirist employed the pen as a "cruel knife" (29) to illustrate how domestic culinary procedures mirrored that of surgery. The core message of the anti-vivisection cause was one

of cruelty directed at science but the satirist insinuated the activists were also 'experimenters' willing to "gratify [their] palate" (57) through "inhuman torturing" (55).

The unknown pen created a satiric glass for the activists to view their own ethical position concerning culinary and sporting practices. In doing so, the lay opponent becomes less 'lay' and the satire implies that the two factions have more in common than that which divides them. The tactics each side of the debate used to engage in 'conversation' is discussed later in this thesis, especially the above 'Satire'. Linking the scientific writer with the literary pen through vivisection discord is the physician Sir Arthur Conan Doyle's *The Physiologist's* Wife, published in *Blackwood's Magazine* in 1890. Conan Doyle's vivisectionist, Professor Ainslie Grey, is entombed within an unhappy marriage. As Robert Darby has suggested, Grey is a fitting model for the heartless scientist and palaeontologist Richard Owen, whose "lamentable coldness of heart" (96) was probably a factor in his son's suicide. There is a likelihood that the characterisation would have resonated with Conan Doyle's lay readership who devoured countless variations of the vivisector as a merciless devil. With The *Professor's Wife*, Conan Doyle, like Wells and Ross, was fortuitously placed in writing from a scientific advantage, but all three authors offer emotionally bankrupt scientists who can only converse with others through the cold language of science.

GENDERED HISTORY: ANTI-VIVISECTION AS A "WOMAN'S CAUSE"

It was not an issue lost on women that the powerlessness and suffering inflicted on animals by the Victorian experimental scientist suggested a similarity to the way that women were treated by doctors who engaged in "hypnotism experimental" (Finn 197). The kind of triumphalism that attached itself to the notion of experimental science preyed on certain sensibilities of women for a reason. Here, the activists surmised, was the irresistible machismo of the male scientist embedded in a speciality that demanded live subjects. As

Smith as noted, Elaine Scarry's study The Body in Pain is "mostly about men" (61) and it could be said that due to the high numbers of women involved with the cause, the anti-vivisection debate was concerned with women's 'pain'. Through fiction, anti-vivisection writers attempted to deny men who were associated with vivisection practices any access to women's bodies which they felt were already figured as potential subjects for the experimental gynaecological experiments. In the Priests of Progress, Colmore's narrator explains in detail the invasive operations undertaken on two very different women that warned its readers that social class held no protection for the woman patient. Colmore displays a collective of socially diverse vivisectors boasting varied backgrounds, education and personalities, highlighting how the stereotypical vivisector was a mythical concept. Roslynn D. Haynes has identified six representations[13] showing the evolution of the scientist in Western literature and concludes that the most frequently levelled charge against science and scientists was one of "aloofness and emotional deficiency" (211). Emotional isolation was a topic penetrating most vivisection texts and this indifference was extended in the plot to the "men [that] resented women who attempted to engage them on an intellectual terrain" (Smith 79). Colmore emphasises the ramifications of these characteristic flaws through a complex web involving romance and ambition alongside scientific nihilism. Vivisection plots repetitively cautioned women "not to consort with the vivisector, specifically not to marry … them" (Hamilton 31). Although often ridiculed for her obtuse comments, Wilkie Collins does permit his amateur scientist Mrs Gallilee, to attend public lectures on scientific subjects and thus shows how these gatherings charted the "feminine side of amateurism" (Smith 6). These events considered the work of women amateurs and their contribution to the development of intellectual and political womanhood as a historiography that stands as a high accomplishment. As Ellen Stockstill has concluded, "thousands of women were attracted to

[13] See Haynes, Introduction, 3-4.

the movement [with] 40 to 60 percent of the membership being female to begin with" (127). Some fifty years after the inauguration of the first anti-vivisection society, Wells stated in his pamphlet Popular Feeling and the Advancement of Science (1928) that the typical anti-vivisectionist was either: "[h]is or her [but] it is most commonly her" (267). The philanthropic and reform movements had provided women with an entry into an area of public life, from which they were generally excluded but the anti-vivisection movement was unique in that it gave women the opportunity to become involved in the leadership of the organisations to which they belonged. There were numerous links between the women's movement and the anti-vivisection cause[14] but the BUAV considered their volunteers as displaying a "devotion little short of heroism" (Hopley 9) and this battle trope became a familiar feature of activist literature. When the pioneering gynaecologist Robert Lawson Tait[15] addressed a public demonstration against vivisection on 26 April 1899, his address suggested that there could be more to the campaigning than a devotion to animals. Tait informed his audience that he did "not take it for granted ... that this merely [was] ... an Anti-vivisection question ... there is something very much deeper than this mere word conveys to the mind when you join in a movement such as we are taking part in tonight" (5). Tait's statement underpins the reason why this study has chosen to examine texts that suggest women's involvement in the movement may have extended beyond sentimentalism and victim identification.

Women like Cobbe, Lind-af-Hageby and Anna Kingsford were willing to devote their working lives to the cause. Kingsford volunteered her own body for vivisection purposes to save an animal. (Maitland 1:309). All three women wrote on the topic but Cobbe produced a

[14] For further discussion on the history of the British Union for the Abolition of Vivisection, please see Hopley, especially chapter 2 for the specific role of women within the Society.

[15] Robert Lawson Tait (1845-1899) was a Scottish surgeon, a self-proclaimed gynaecologist and the first to perform salpingectomy to treat a ruptured tubal pregnancy. He was also the first to record a removal of an ovary for relief of pelvic pain and to induce menopause.

prolific output of essays, reports and pamphlets for the Movement.[16] Except for Lind-af-Hageby and Schartau, Cobbe was one of the few women activist writers that attempted to engage with science individuals as an intellectual equal. She was relentless in the tactics she adopted to confront the profession and swell the ranks of anti-vivisectionists. In 1885, the VSS published "81,672 books, pamphlets and leaflets" (French 255). Writing in her autobiography, Cobbe resolved to "never to go to bed at night leaving a stone unturned which might help to stop vivisection" (278) and consequently, her voice punctuates every chapter of this thesis to emphasise the numerous ways she considered the practice of vivisection responsible for hardening the sensibilities of the practitioner and violating the 'rights' of women.

Coral Lansbury's landmark text The Old Brown Dog: Women, Workers and Vivisection in Edwardian England (1985) draws parallels between sexual imagery common to Victorian and Edwardian pornography and the iconography of animal experimentation. In her preface, Lansbury stated that "the vivisected animal stood for the vivisected woman: the woman strapped to the gynaecologist's table, the woman … bound in the pornographic fiction of the period" (99). DeWitt acknowledges in Moral Authority, Men of Science, and the Victorian Novel (2013) that although "Lansbury's thesis remains widely influential in literary studies" (128), it has instigated "article [after] article confirming that female characters are vivisection's victim" (128). No study concerned with the representation of the vivisection debate would be complete without referencing these human and non-human parallels, and DeWitt is correct is pinpointing Lansbury's text as foundational in igniting scholarly debate. As Andrew Rosen highlights, the Brown Dog Statue became "a symbol of the victim, whether that victim was animal, woman, or worker" (400).[17] Historians such as French and

[16]For information of Cobbe's output for the anti-vivisection cause, see *Life* 2:241-316.
[17] For details, see Lansbury, especially chapter 1 and Hopley 20-21.

Elston stay closer to the surface in explaining the predominance of women in anti-vivisection by aligning the movement with other social issues that had more explicitly feminist agendas. Lansbury differs in her approach by contending that it was "left for the writers of fiction to make disturbingly clear that when these women wept for tortured animals, they were crying for themselves" (129). In her annual address to the 1889 annual meeting of the Victoria Street Society, Cobbe addressed the 'tone' in the movement and urged the Movement's supporters to abandon "hysterical excitement". On 1 July 1880, The Zoophilist published Cobbe's advice:

> *Don't* be sentimental! Don't, above all things, be hysterical and tearful! There is reason enough for our womanly tears, God knows! But don't shed them in public, my sisters! Don't let our opponents say that our party is composed of excitable people, and our object a sentimental fad. (Emphasis as original 80)

Cobbe was addressing what physiologist Michael Foster had referred to as "the many fruits of a mawkish sentimentalism" (368) associated with the movement. Physiologist Gerald Yeo agreed that the continental experimenters were repulsive to scientists as well as the lay public, but accused the activists of wilfully conflating the two and making "one great agony-producing community" (199). Given that Yeo was a fierce opponent of Cobbe who relentlessly questioned her authority to present facts coherently, they did share a common ground in attempting to diffuse the hysteria attached to the debate. Cobbe was not endorsing a separate-spheres ideology, instead she was asserting that a woman's special moral insights should direct science by suggesting that women were being disqualified in the debate by the emotionality displayed. Through other means, namely the use of scientific illustration, Cobbe found an effective and more credible way of channelling sensation and grasping the attention of the movement's audience.

IMAGES OF VIVISECTION

Except for Hamilton's "Still Lives": Gender and Literature of the Victorian Vivisection Controversy" (1991), these images of vivisected animals have drawn scant scholarly interest and this study is unique in providing a space to explore their essential role within the debate. Susan Sontag proposed that an image "has the deeper bite [and acts] like a quotation" (19) and Cobbe admitted in many of her essays that the use of illustrated placards was far more effective than any of her writings. By exploring the role that these illustrations held as propaganda tools, this thesis analyses how the activists sourced their material and, in turn, manipulated the work of others that had taken years to master. On 24 June 1876, the weekly anti-vivisection periodical The Home Chronicler used an image of a vivisected rabbit sourced from de Cyon's Atlas de Methodik der Physiologischen Experimente und Vivisectionen (1876) for its frontispiece. As Hamilton rightly states, The Home Chronicler was the "only exclusive antivivisection periodical to reproduce such illustrations regularly" (25). Specific images became synonymous as the work of all vivisection practice and "whether intentionally or not" the periodical "*inflict[ed]* ... trembling and shuddering on their audiences" (The Story of Pain. Bourke 234). Cobbe[18] manipulated her editorial power of the images to support her own argument that the vivisection laboratories be recognised as the "torture chambers of science" (2) in her pamphlet "Light in Dark Places" (1883). This thesis explores how these images of what some considered repulsive may have become alluring to an unintended audience. Anti-vivisection societies displayed a range of images showing various stages of vivisection in their shop windows.[19] The location was carefully selected as Ronald Edwards observed:

[18] For further information on Frances Power Cobbe's relationship with the anti-vivisection movement, see Mitchell, Obenchain, particularly chapter 1, and French, chapter 5.
[19] For further details on the Movement's occupation of vacant shops, see Hopley 8-9.

> that during the early twentieth century, you would encounter two shop windows, side by side. In one, displayed by the Anti-Vivisection Council, was a realistic model of a dog strapped to an operating apparatus. … The other window … represented the Research Defence Society. … its two windows may be pure symbolism … [e]ach window only exists as a moral rock to be thrown at the other. (51)

On 10 March 1877, the editor of The Home Chronicler confirmed that "the proposal to have Anti-Vivisection Placards upon the public hoardings of London, as well as upon the stations of the Metropolitan Railway, is being rapidly carried out" (602). The use of these images enabled the activists to situate the debate within the public arena but in doing so, they drew the wrath of the science professionals who felt the activists had "mutilated the texts [and] distorted [their] quotations." There is reason to suggest that scientists felt their own professional body had become 'maimed' by a collective of "hypocritical humbugs and hysterical old maids" (de Cyon 499-500) and in this sense, these concerns could be read as exposing a perceived vulnerability of the vivisector himself.

LITERATURE REVIEW

Any work concerned with the late-Victorian debate is indebted to Richard D. French's Antivivisection and Medical Science in Victorian Society (1975) and Nicholaas Rupke's Vivisection in Historical Perspective (1987). French and Rupke offer a cultural historical approach to the debate and present a penetrating analysis of the events from meticulously researched sources that are connected through an intricate matrix of statistics, reviews, essays and Government reports to the Victorian animal rights movement. Neither French nor Rupke is primarily concerned with a literary analysis of the debate, but Mary Anne Elston's chapter entitled "Women and Anti-vivisection in Victorian England, 1987-1900" within Rupke's volume, supports the popular feminist argument that "animals have an advantage over

women: they are not constrained by male-dominated language" (262). Covering every facet that applied to women's suffrage and linking ovariotomy experiments in the 1870s to 1880s to the destruction of "women's essence" (279), Elston offers an infinite number of sources that present a meticulously researched argument for the reasons why the anti-vivisection debate became perceived as a woman's cause. John Arthur Goodchild's Somnia Medici (1887)[20] introduces Elston's essay along with a quote from "Vivisection: A Satire" (1876) but apart from a brief mention of Sarah Grand's The Beth Book (1897), Elston does not cover the fiction resulting from the debate in depth but does chronologically situate the controversy within earlier feminist texts that set the scene for the potentiality of women's involvement. A unique aspect of Elston's study is her coverage of the 'lady vivisector' (281) and Cobbe's controversial editing of The Nine Circles. Building on the historical analysis of French and Rupke is Emma Hopley's Campaigning Against Cruelty (1998), which considers a hundred-year period of the history of the BUAV. Hopley briefly covers similar ground as French and Rupke, but in drawing on Cobbe's inspiration to organise one of Europe's foremost animal protection organisations, Hopley blends history with a manifesto to capture the passion of animal rights campaigning during this time. Richly illustrated from the BUAV archive collection, Hopley provides a personalisation to the rallies and debates that is not always evident from other sources. Susan Hamilton's three-volume study entitled Animal Welfare and Anti-vivisection 1870-*1910: Nineteenth Century Women's Mission* (2004) provides a rich tapestry of primary sources covering pro and anti-vivisection sources. With the first volume dedicated to the writings of Cobbe, the second and third volumes follow with tracts from both the anti and pro-vivisectionists. By structuring her study in this format, Hamilton provides a well thought out synopsis of essays, correspondence, short fiction and poetry to provide an unbiased landscape in which to view the debate. Although Theodore G. Obenchain

[20] Originally quoted in *Zoophilist* 1 May 1885, 1.

acknowledges The Victorian Vivisection Debate: Frances Power Cobbe, Experimental *Science and the "Claims of Brutes"* (2012) is "aimed more at an enlightened general" (ix) than a scholarly readership, its analysis is focused more on the achievements of Edward Jenner and his pioneer research of the smallpox vaccine alongside Louis Pasteur and microbial fermentation. Adding to the historical setting of Obenchain's study is Chie-hui Li's essay "Mobilizing Literature in the Animal Defense Movement in Britain, 1870-1918" (2006) where Li discusses the important of "a special canon of writers and texts which [the movement] proudly proclaimed its "own" (34). Li claims that the vivisection novels presented "engaging plots and realistic representations" (46) and supports this analysis with examples of how it was the activists' "primary task" to undertake a process "involving the selection, interpretation and reintroduction of works" which they re-fashioned" (34) to fit the cause. The vivisection 'canon' developed by the activist writers is also explored by DeWitt who draws on two diverse "book reviews" published in the first number of the Zoophilist. DeWitt notes that although the article on Italian physiologist Paolo Mantegazza "purports to be a review … its real focus is what it reveals about his character" (126). The Zoophilist implied that the "book itself is a picture of the vivisector's mind" who places "helpless little animals into a glass box where he pinches them, tears them, and crushes them for hours at a time … noting with keen interest and satisfaction every detail of agony" (126). The use of this passage is key because it aligns Mantegazza's moral character with a further review on the subsequent page. DeWitt's analysis of the two sources also supports the suggestion that anti-vivisection writers sourced their material from articles such as the "Vivisector's Directory" published in a later edition of the Zoophilist. Although Graham's novel The *Professor's Wife* is fictional, it makes the same point as the Mantegazza review: both men become psychologically hardened through practising vivisection but Graham's vivisector Eric Grant is almost too attractive. By the close of the novel, Grant, like Mantegazza, is

transformed from a charismatic and eye-catching man into a "hard, cold, remorseless physiologist" (Dewitt 127).

Sara Murphy's "Heart, Science, and Regulation: Victorian Antivivisection Discourse and the Human (2014) provides an insightful and thought provoking analysis of the legalities relating to the Cruelty Act alongside Collins's Heart and Science as a site of law and literature. Likewise, Erika Behrisch Elce's "One Remarkable Evening": Redemptive Science in Wilkie Collins's Heart and Science (2014) offers an original, and much welcomed, reading on the positive outcomes of science in Collins's novel. Both Murphy and Elce break away from the usual scholarly analysis of Heart and Science and review the novel as a stand-alone text that does not exist in the shadow of Collins's larger, more successfully acknowledged, canon of work.

CHAPTER BREAKDOWN

The first chapter of this thesis examines the early tactics adopted by the anti-vivisection writers to formulate the various animal rights societies. By focusing attention on the editorial severity employed by certain activist writers, this chapter explores an exchange conducted in print between Cobbe and de Cyon. The forcible, and at times, emotive, vocabulary embedded within both essays testifies to the strength each writer held in their conviction regarding their belief in relation to vivisection procedures. By unpicking the various literary tropes and metaphors used by Cobbe and de Cyon, in what, at times, appeared to be little more than barely rising above 'trading insults,' this chapter analyses how activist and vivisectionist made generalisations about the intellectualism of their opponent. By reviewing Cobbe's pamphlet "Light in Dark Places" (1883) produced for The Contemporary Review, alongside her editing role in the controversial text The Nine Circles, various leaflets and tracts published by the movement, this chapter interrogates Cobbe's assertion that throughout her

publications "[e]very one of the illustrations is a reproduction" (Light in Dark Places 3) of the original text. Scientific research was accessible to lay-readers through journals and this literary freedom did leave their work open to interpretation by those not expertly trained in the profession. Cobbe textually reframed images of vivisection in her own publications to strengthen her line of argument. When considered in this light, the bodies of the scientific texts became as vulnerable as the animal bodies that inhabited the texts. One handicap facing the activist literature over time was the issue of everything becoming repetitive, and the movement ran the risk of diminishing the interest of the topic to their readers. The vivisection images captured the campaigning spirit of the movement through a sense of urgency and helped to counteract a certain dullness within the campaign.

While the first chapter explores the foundational elements of the anti-vivisection movement from a lay perspective, the second chapter analyses the lecture notes of two scientifically trained women and their experiences of the vivisection laboratory. The Shambles of Science (1903) by Swedish medical students, Louisa Lind-af-Hageby and Leiza Schartau was promoted as an authentic record of their lecture notes from the vivisection laboratories of University College London. It was a key moment in the anti-vivisection movement as it claimed to be the first authentic evidence drawn from laboratory experience that was easily accessible for a lay audience. The Shambles of Science was also a flagship moment in the activist movement for opening a space for the woman's voice from the laboratory to be heard. Lind-af-Hageby and Schartau were scornful of those sentimental women who drowned themselves and their listeners in pathos when they spoke of the sufferings of animals under the vivisector's scalpel. The two women were "determined to arm themselves with the language and arguments of the enemy, and speak as doctors" (Lansbury 9) but their own writings are embedded in literary tropes and sensation metaphors. In exploring "pain speech" (Southgate 53), this chapter pays attention to the language the two

women seized hold of to represent the scenes before them in the laboratory. By analysing their literary fingerprint, it becomes possible to discuss if The Shambles of Science was a text representing science or an argument to examine moral authority. The two women became interested in anti-vivisection after witnessing experiments performed at the Pasteur Institute in Paris.[21] They enrolled in the London School of Medicine in 1902 with the deliberate intention of mastering physiology so that they could better expose the evils of vivisection. (Hamilton vi). From the laboratory, the two women recorded what they had witnessed during Professor William Bayliss's experiment on a brown dog with an unhealed wound in its side, seemingly the result of a previous experiment. They recognised this as a clear violation of the 1876 Cruelty to Animals Act and published their findings in the chapter entitled 'Fun'. In November 1903, Bayliss sued the publisher, Stephen Coleridge, for libel.[22] After a sensational trial, which attracted a great deal of public attention, Bayliss won the suit: Lind-af-Hageby and Schartau were forced to withdraw the section of The Shambles of Science dealing with Bayliss, which they replaced with a lengthy description of the trial. The second part of chapter two examines how anti-vivisection rhetoric fed into fiction through a close reading of Leonard Graham's *The Professor's Wife* and G. Colmore's Priest of Progress. The chapter analyses how these fictional 'Frankensteins' "penetrated into the recesses of Nature" (30) through the use invasive scientific experimentation upon women. Scholars such as Hamilton, Lansbury and Greta Depledge have already noted that late-Victorian women recognised their own repressed condition in the image of the vivisected animal physically constricted to the laboratory bench. Colmore draws from this parallel to provide two accounts of life-changing intimate operations on two very different socially classed women to emphasise the loss of the patient's voice. Colmore and Graham both present women who lose

[21] For further information regarding the Bayliss Case, see Lansbury 10-12

[22] At the date of publication, Coleridge had held the post of honorary secretary of the National Anti-Vivisection Society (NAVS) since 1897.

their voices at the very time that they should speak, and this chapter explores how 'silence' is a recurring feature of anti-vivisection fiction. Thus, there is a strong argument for analysing why Lind-af-Hageby and Schartau did not 'speak' in their professional voices, and scope for exploring the tactics used by fictional writers to make their characters heard only when they have lost the recourse to language.

The third chapter provides fresh evidence to suggest that vivisection performed a positive role in the lives of individuals existing on the periphery of the practice. By analysing Wilkie Collins's novel Heart and Science and Florence Marryat's An Angel of Pity, it examines the different outcomes for a woman's stepping outside the boundaries of normal female behaviour within the confines of a late-Victorian marriage. In 1882, the Zoophilist commented that Heart and Science "becomes with each number more interesting" (192). The following year, an anonymous reviewer for the Fortnightly Review offered a more literal summary suggesting that Collins was "upon the war-path" and had "said to himself, Vivisection is a horror and an abomination, and I will smite it hip and thigh." The anonymous reviewer further suggested that although this "serious novel of vivisection [is] fair-minded and properly informed … [it] still remains to be written" (880). At the time, Heart and Science was termed a 'propaganda' novel and it is commonly recognised by modern scholarship as one of Collins's lesser accomplished works. This chapter aims to rectify this view and show that the novel is unique in showcasing numerous positive cases for experimental medicine, while at the same time, subtly revealing that even the supposed scientific villains of the novel have the capacity to engage in heartfelt emotions.

Collins wrote for a potentially varied readership and created a two-part preface for his novel. The first preface is addressed to "Readers in General" and the second, "To Readers in Particular". "Readers in General" was written for Collins's stable fiction readership whilst with "To Readers in Particular", Collins presented the scientific interests of his novel. By

writing to both audiences, Collins presented his anti-vivisection argument. In the second preface, addressed to "Readers in Particular", Collins states that at times the reader will find the character "talking" and sometimes "the author talking of scientific subjects in general", but he emphasised that this is gleaned from "promiscuous reading" and not borne out of wanton "gross caricature" (39). This comment is clearly evident in the character of his amateur botanist, Mrs Maria Gallilee. In the first part of the preface, Collins admits to an awareness that his work would likely become scrutinised as a socially political document by "Readers in Particular", including not only professional reviewers but activists on both sides of the vivisection debate. With this aspect in mind, Collins was very careful not to alienate his loyal readership and assured his "Readers in General" they will not be invited inside the laboratory as he "will leave the picture to speak for itself" (38). This tactic enabled the reader to imaginatively fill the gaps in a way that perhaps the author was professionally unable to fulfil.

As the circulation of the anti-vivisection periodicals grew, so did the secondary topics that captured the imagination of writers and readers alike. During the late 1870s, the non-human rabies virus and, in turn, its recognised human form of hydrophobia became a popular topic of The Home Chronicler, The Anti-Vivisection Review and The Zoophilist. At times, its presence grew more forceful with each issue and the vivisection articles struggled to find their own voice. Chapter four examines the trajectory of this relationship and its use as a literary trope in anti-vivisection fiction by focusing on Florence Fenwick Miller's Lynton *Abbott's Children* alongside Compton Reade's Who is Now the Gentleman? A secondary feature that accompanied parental loss in these novels was the inclination of activist authors to cast the vivisector as suffering from cynophobia, an abnormal fear of the dog. With the demise of the biological father, the child often became an orphan. It was exceptionally rare that birth mothers were a feature of anti-vivisection literature and the child was either

dispatched to live with an unfamiliar extended family or enrolled in an educational establishment specialising in scientific study. Both options offered next to nothing in the way of maternal nurturing. This chapter explores the possibility that birth mothers are side-lined as a way of explaining how men develop interests in vivisection. This chapter further examines the inclinations that could have potentially inspired the vivisector to vivisect, both physically on animals and psychologically with human specimens. By drawing together the strands of these seemingly unrelated topics of hydrophobia and motherhood, this chapter analyses if anti-vivisection writers linked these topics to metaphorically empower themselves from the page. For centuries "contagionism and anticontagionism (miasmatism) has been competing as explanations of diseases" (Membranes Otis 10) and this chapter examines the ways in which activist writers made infectious contagion believable. To date, Lynt*on Abbott's* Children is still published anonymously and Fenwick Miller's authorship can only be detected through her autobiography, An Uncommon Girlhood (1884), where she confirms it was her intention to publish without adding her name (Chapter 30). Fenwick Miller admits that the novel's "literary success" would have been advantageous at the time, but she "wished for a sterner intellectual position than that of a writer of fiction." She added that:

> "[m]y dominant idea being to help women, I wanted to do things that other women had not already succeeded in doing …. [a]nd I thought that my reputation …[i]n this direction, would be hindered rather than helped if I were stamped as a novelist. (Chapter 30)

From the above passage, it appears *Lynton Abbott's Ch*ildren was itself a 'motherless' text and the "literary success" would have alleviated Fenwick Miller's dire financial situation at the time, but the revelation also shines a light on the reasons why many of the novels were published without their creator's identity. Fenwick Miller was a journalist, pioneer, suffragist and platform speaker. She sought medical training with the leading feminist medical pioneer

Sophia Jex-Blake in the unsuccessful attempt to win women's admittance to the University of Edinburgh. When this failed, Fenwick Miller earned a certificate for midwifery from the Ladies' Medical College in London and she began writing and publishing while still a student. By her early twenties, she had practised midwifery among the poor, published articles and books about physiology, and become a respected participant in the London Dialectical Society, an invited speaker in the Sunday Lecture Society, and a popular lecturer in tours across the country. Fenwick Miller did not belong to the sentimental collective of authors associated with the anti-vivisection movement, but it appears that she felt that writing a 'novel' and supporting the anti-vivisection movement would diminish her professional credibility. By teasing out the maternal thread of the novel, which provides the sub-plot, this chapter explores the ways in which Fenwick Miller felt women were under-represented in professional society, namely medical roles. Rosemary T. Van Arsdel, the recognised biographer of Fenwick Miller, confirms that "[a]t one time, Mrs. Fenwick-Miller was referred to … as perhaps one of the best known women of the world yet today she is a 'lost lady' and her career must be completely restructured" (108). To date, Fenwick Miller's novel continues to be published anonymously but this thesis provides a space for the 'lost lady' to be reclaimed and repositioned within the vivisection canon.

The last chapter of this study examines representations of the vivisected body as a portal of communication. By analysing three different accounts of the vivisected body, this chapter considers the conjoined relationship between the scalpel and the pen. By initially focusing on an account of a vivisected rabbit body in Michael Foster's essay "Vivisection" (1874), published for *Macmillian's Ma*gazine, this chapter probes into the inscribed cuts that Foster makes upon the lacerated body as a representation of the physiologist's signature. Through a close reading of Foster's narrative, it is possible to detect the tactics used to seduce the reader to interact with the text. This approach then provides a path to discuss the textual

body and its dissection by the words of other writers. In "The Anti-Vivisection Agitation" (1883), Elie de Cyon claimed that activist writers had disfigured and dismembered his research through their callous motives to promote the movement to a generalised audience. By examining both the editing and writing process of scientific promotion relating to the debate, this chapter challenges if a text can become metaphorically as painfully dissected as the body it is supposedly representing. The third body concerns the imagination. In Claude Bernard's An Introduction to the Study of Experimental Medicine (1865) Bernard conceded it was impossible to "separate … head and hand" (3), emphasising the tactile nature attached to vivisection. Bernard was a vivisector renowned for his brutality in scientific practice, but his writings owe much to his earlier abandoned literary apprenticeship and often sit at odds with his mature professional profile. By exploring how these apparently diverse strands inhabit the imagination of one mind, this chapter draws out, somewhat pastoral and, at times, beautiful specks of writing in an otherwise blood-soaked, pitiless and insensitive narrative.

As Richards has noted, there already exists a substantial scholarly literature on the late nineteenth-century opposition to the new experimental physiology, which encompasses an impressive array of arguments and insights attributable to the anti-vivisectionists. Of the physiologists' own attitude to the substantial questions of practical ethics in which they were immersed, we know much less. It is nevertheless quite possible that the insights of scientists themselves have special, and perhaps ever unique interpretative value, and by looking at the writings of such scientists as Foster, de Cyon and Bernard, and how they implemented their trade, this chapter analyses the hybrid nature of the scalpel and pen. In doing so, this thesis explores the ways in which the bodies of the vivisection laboratory functioned as books: as their metaphorical leaves were turned, knowledge found many ways of expressing cultural and societal concerns.

1: "More Sinned Against than Sinning": The Case for the Late-Victorian Physiologist

This chapter examines the tactics used by the anti-vivisection lobby to amplify its voice and construct its own identity. By initially taking as its focus a selection of writings by the leading anti-vivisectionist, Frances Power Cobbe and images of vivisected animals published by Russian born physiologist Elie de Cyon,[23] this chapter examines the tactics employed by the anti-vivisection lobby to amplify its voice and construct an identity. Pro and anti-vivisectionists rarely engaged in formal conversation and most of their discourse was conducted through a "barbed exchange" (Daston and Galison 191) of essays and correspondence. For this reason, the discussion between Cobbe and de Cyon illustrates a fundamental part of the debate in showing the language and methods used by each side to articulate their argument. This chapter explores how each side of the debate became "trapped in the language of representation" (Dying to Know Levine 7) and the methods used to represent the vivisector to a lay-readership. The second part of the chapter examines how the poetic contributions offered by both sides of the debate provided an opportunity for individuals to contribute to the controversy. Judging from the narrow subject matter and linguistic skill displayed, these writers were likely literary novices but poetry provided an outlet for their creativity.

During the late 1870s and 1880s, certain anti-vivisection writers employed images of vivisected animals to move their readers to project a sentimental significance on to the scene before them. For the anti-vivisectionists, these images were by their very nature a more accessible medium of communication because they appealed to a diversified audience. Unlike scientific reports, which can present themselves as lengthy and difficult to the lay reader,

[23] For further information on Elie de Cyon (1842-1912), see Fox, 3-23 and Rothschuh 209, 271, 327.

images, even unfamiliar ones, often have the capacity to convey complex information or bypass it altogether, in a single perspective. In the case of the anti-vivisection movement, animals were considered as anthropomorphic vehicles of emotional identification, and the activist writers employed a combination of visual metaphors and graphic literacy to support the cause. As Bonnie Smith has suggested "metaphors nourish the formulation of new ideas" (31)[24] and images of wounded animals, as the anti-vivisection writers discovered, possessed the ability to offer themselves as agents for analytical thought and extended interpretation. However, as Hesse has contended "a metaphor is also capable of communicating something other than was intended and hence… being misunderstood" (115) and this chapter examines the misunderstanding and misrepresentation evident in the writings of both sides of the debate.

In 1882, Cobbe published an essay for the Contemporary Review entitled "Vivisection and Its Two Faced Advocates" where she accused the science profession of writing "one-way for each other and quite another for the general public" (Otis 130). According to Cobbe, scientists had intentionally developed two different styles for describing their experiments: a procedural one that voiced their exact motives for their peers, and a more general one that stressed their usefulness to society. This opinion was disputed by the science professionals who supported vivisection and the charge of duplicity likely owes its heritage to how each party either interpreted or assumed the intellect of the other rather than any concrete evidence to support the charge. English physiologist, Gerald Yeo responded to being "oft-told" (50) by Cobbe in a letter published in the same periodical. Yeo further chastised Cobbe for "exposing numerous fallacies" (51) in what he summarised as an ill-informed attempt to "mislead" readers and deride the practice of experimental science and certain practitioners. (51) Cobbe

[24] See Hesse for how metaphorical thinking has assisted scientists to breakthrough and advance careers, esp Chapter 4.

and Yeo consequently embarked upon a war of words that, at times, appeared to focus more on the moral character of each other than the topic of vivisection itself. During the late nineteenth-century, as science established itself as a discipline, scientists valued their "particular terms because their language helped to establish their identities as scholars" (Otis 130) but as Charlotte Sleigh has suggested**,** "science cannot be conducted without language, and language is not a neutral tool" (6). By its very nature, scientific investigation is instigated by ideas and consequently, these ideas must be documented but as Laura Otis notes in discussing literature and science in the nineteenth century, "can people writing in the same culture, using the same inherited, highly connotative words to represent their thoughts, really tell such different stories" (130)? Here Otis highlights the difficulty in determining how thoroughly interdisciplinary writers can be in expressing almost identical ideas. The fundamental issue facing the anti-vivisection movement was the task of attempting to transpose one set of terms from one discipline to "grasp new techniques and expertise swiftly; which others had spent years mastering" (Beer 12). As Daston and Galison note, "[o]bjectivity and subjectivity are as inseparable as concave and convex; one defines the other" (197). The anti-vivisectionists relied on specific images to extract what they believed to be the "true idea beneath false or confusing appearances" but these individuals were indicted by the science profession for "sinning against objectivity" (Daston and Galison 195), primarily due to their failure to emotionally distance themselves from the debate. For the activists, who appeared to exhibit little self-restraint and self-control, the editing of scientific text enabled them to challenge the mechanical objectivity of the science profession. For many scientific practices of the latter half of the nineteenth century, self-elimination from their professional duties became an imperative part of their career. Activist writers, and especially Cobbe, punctuated objective texts with a subjective personality to manufacture a credible activist voice. Although as Daston and Galison note, "technological innovations such a

photography create[d] scientific objectivity" (197), the images used by the activists were engravings that were likely compiled by hand. The tactile nature attached to the production of the images has, at times, become claustrophobic for the requirements of this study. Cobbe emphasised numerous times the close proximity in which the engraver and vivisector worked to keep the animal alive and to achieve the desired scientific result. While the activist authors appeared, at times, to find it impossible to impartially present their argument, it is, in turn, crucial for this study to quash sentiment, and recognise that "something like objectivity" (Levine 12) is mandatory to transcribe the ways in which thought and feeling are entangled.

LAY MANIPULATION OF THE SCIENTIFIC IMAGE

To compensate for a lack of scientific intellectualism, the activists were aware they required an effective tool to entice others to support their cause. Most of the anti-vivisectionists did not hold first-hand scientific knowledge and in attempting to create a symbolic identity, were often appealing to a like-minded audience. As Susan Hamilton has identified, for this reason the movement turned to assemblage and the repeated use of a small number of key scientific texts to amplify the anti-vivisection voice (67). By remaining faithful to a group of set texts, the activist writers could protect their readers from intellectual alienation by scientific jargon and manipulate reader identification with these texts to their own advantage. This literary tactic often trapped the activist writers in a "notion of inside and outside" (Dying to Know, Levine 7) and they ran the risk of making false claims for integrity. To strengthen the argument, the activists took up the language of observation of the laboratory. They published countless pamphlets, essays and propaganda leaflets,[25] often with accompanying graphic illustrations of wounded animals sourced from specialist scientific manuals. This approach enabled activist writers to use, and often manipulate, the power of sight and this, in turn,

[25] For details of literature produced by the movement, see French chapter 8.

presented the opportunity to 'show' something through language. Using these means of expression, they drew the medical laboratory into the imaginative landscape of fiction and metaphorically permitted the reader to peer around the laboratory door. The movement did, in time, reach and secure a considerable loyal readership base but this collective interest was dismissed by medical professionals as nothing more than an "illegitimate critique of science" (Hamilton 67).

In 1883, Cobbe published a further pamphlet for the Victorian Street Society entitled "Light in Dark Places" to support her argument for the vivisection laboratories to be recognised as the "torture-chambers of science" (3). "Light in Dark Places" showcased a collection of illustrations of vivisected animals primarily sourced from Elie de Cyon's Atlas zur Methodik der Physiologischen Experimente und Vivisection (1876) and Claude Bernard's Leçon de Physiologie Opératoire (1879). In this pamphlet, Cobbe declared that:

> [e]very one of the illustrations is a reproduction, in most cases of reduced size, by photo-zincography, of the engravings and wood-cuts in the standard works of the most eminent physiologists. In every case the reference to the original work is given, and the perfect accuracy of the reproduction guaranteed. Nothing has been added and nothing has been taken away, except somewhat of the strength and vividness of the larger originals, which have been lost in the reproduction. Thus every illustration in this pamphlet may be taken with certainty to be *a Vivisector's own picture of his own work,* such as he himself has chosen to publish it. (Emphasis in original. 3)

The above passage is studded with references that allude to its authenticity, and it is plausible that Cobbe's readers may have read the passage in the confidence that it was a true

representation of the '*Vivisector's ... own work.'* Cobbe clearly chose her vocabulary well as the word 'reproduction' sweeps through the passage to reinforce its legitimacy, but it also supports Cobbe's additional claim that the experiments are not "single instances" (3). These examples, Cobbe emphasises are representational of "*stock"* experiments that are "gone over by each new recruit in the army of science" (4). As George Levine states in Dying to Know, sometimes it is required by readers to differentiate if "true is not the operative word" and perhaps "valid, or the case" (10) is a better representative. Cobbe's issuing of de Cyon's actual image per se, can be considered as a 'true' representation but it is not a 'valid': it is a subjective representation of an objective judgement for scientific experimentation.

The word **'**reproduction' is associated with a process of imitation or procreation, by which an 'offspring' is produced from its parent. Echoing the metaphoric ending to the Introduction of Mary Shelley's Frankenstein (1818) when she bids her "hideous progeny" to go forth and prosper (52), de Cyon inadvertently 'gave birth' to an image that gained its own immortality through a proliferation of activist literature. Cobbe did not make the mistake of supposing that the images she replicated in her essay would have one language and could simply speak for themselves. She specifically isolated a significant group of images for use in her own essays that acted as primers: no matter what the reader read, the message was always the same and, for this reason, complete objectivity of the reader's sensibilities became impossible. It would likely have been impossible for the reader to embrace a "[r]eal detachment, [such as] objectivity is" (Levine 15) and their understanding becomes a desire to understand. One example of this method is Cobbe's utilisation of de Cyon's image showing

the “cutting through the trigeminal nerve” (viii) of a rabbit:

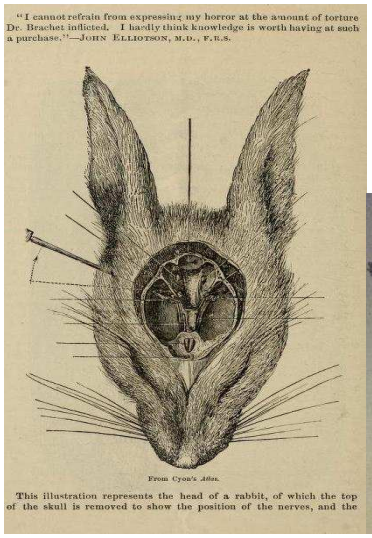

Fig. 1. Frances Power Cobbe Illustrations of Vivisection (1888) (6) Original image sourced from Elie de Cyon’s Atlas der Methodik der Physiologischen Experimente und Vivisection (1876) Plate XXXV

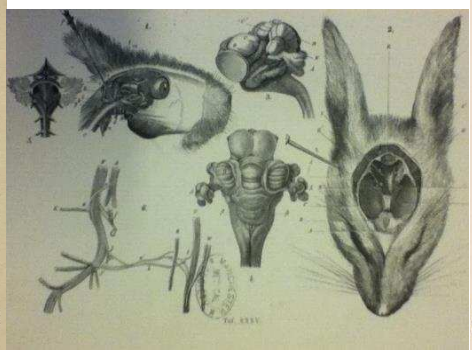

Fig. 2. Elie de Cyon. Atlas der Methodik der Physiologischen Experimente und Vivisection (1876) Plate XXXV

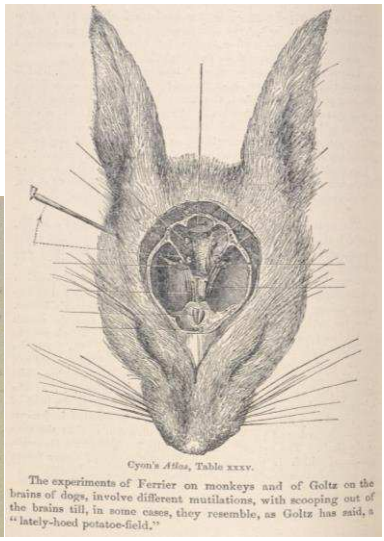

Fig. 3. Frances Power Cobbe. Light in Dark Places (1883) (28) Original image sourced from Elie de Cyon. Atlas der Methodik der Physiologischen Experimente und Vivisection (1876) Plate XXXV

The above figures are illustrations of a vivisection operation performed on a rabbit sourced from Plate XXXV of de Cyon’s Atlas der Methodik der Physiologischen Experimente und Vivisection. The central image (see fig. 2) is the original, while figures 1 and 3 are adaptations by Cobbe. De Cyon’s text was originally published in two volumes, with one devoted to illustration, from which the above image is taken, and the other volume contained a set of corresponding explanations. The original image held an accompanying set of simple diagrammatical terms and the plate did not carry any explanatory narrative, not even to its possible scientific utility: these details were held, notably in German, in the corresponding volume that the activists largely ignored. An image may be used to carry a

consistent meaning but its interpretation is dependent upon the nature of the recipient. De Cyon's image itself appeared to have been faithfully reproduced, but upon its re-issue, it carried additional text, placed by Cobbe but not authorised by de Cyon's hand. As André Lefevere has suggested, "rewriting is manipulation" that could be said to introduce "the shaping power of one culture to another" (4). In textually reframing figures1 and 3, Cobbe has altered the ethical landscape of the original text and created a textual space in which to engage with her critics on her own terms. By editing the image's message, Cobbe introduced scientific investigation to an unfamiliar audience, one that was likely to be unintended by de Cyon, and one that had the capacity to distort his voice as much as the manipulated optical illusion. As Bernd Hüppauf and Peter Weingart have observed in discussing scientific imagery: "the tearing apart of images was implicated in a discarding of systems of belief and knowledge and was followed by enthroning new ideals" (3). Cobbe's metaphorical 'tearing apart' of the image is indicative of her desire to halt what she perceived as the cavalier attitude of the 'priests of progress'[26] attached to the discarding of moral ethics.

To frame something, either textually or otherwise, is to exclude unwanted or unnecessary articles. Cobbe deleted de Cyon's original explanatory narrative from the image (see fig. 3) and added the following statement: "[t]he experiments of Ferrier on monkeys and of Goltz[27] on the brains of dogs, involve different mutilations, with scooping out of the brains till, in some cases, they resemble, as Goltz has said, "a lately-hoed potato-field" (28). The description does indeed support the image, but it originally belonged to a different experiment on a different animal. De Cyon confirmed in his essay "The Vivisection Agitation" (1883) that he had never performed an experiment on a monkey (503), a statement that invalidates Cobbe's statement, but for the purposes of her thesis, authenticity was

[26] For references to the context of the term 'Priests of Progress' and the anti-vivisection debate, see: Ouida (Louisa de la Raimee) *The New Priesthood.*
[27] For a discussion on the Ferrier trial, see White.

sacrificed for spectacle. Goltz's comment appeared to support Cobbe's assertion that vivisection operations were performed with rhythmic frequency and it offered the opportunity for Cobbe to promote the vivisector in print as a barbaric torturer. As Lefevere suggests, "[t]he non-professional reader increasingly does not read literature as written by its writers, but as re-written by its rewriters" (4) and Goltz's reference to a "lately hoed potato field" when reading in conjunction with de Cyon's image, invoked connotations of a brutal, unskilled task that could involve scant emotional or intellectual attachment. It was common for vivisection novels to adopt plots that focused upon the dissolution of a woman's rights at the hands of her vivisecting husband. As Coral Lansbury has suggested in The Old Brown Dog: Women Workers and Vivisection in Edwardian England and her subsequent essay "Gynaecology, Pornography, and the Antivivisection Movement (both 1985), women identified with the bound and gagged animal fastened to the vivisector's bench. For this reason, it is plausible that late-Victorian women read the penetration of de Cyon's scalpel through the rabbit's skull with its lately-hoed potato connotation, as exploitation akin to rape. When viewed through a gendered lens, it is suggestive to read the image as emblematic of the struggles of female emancipation against a predominately male-dominated medical profession, but left to the reader's imagination, the images become an invitation to pay attention, to reflect and to learn.

It is a contentious issue as to whether it was Cobbe's intention to edit, and consequently suffocate, the vivisector's voice but by offering an alternative, Cobbe adopts the role of ventriloquist and by making her voice appear to be coming from somewhere else, she can advance the debate from the relatively secure space of the textual page. More importantly, it presented Cobbe with the opportunity to create a textual space to place the spurious scientific

pioneer on trial in a way that had denied her with the reality of the Ferrier Trial of 1881.[28] The image of the rabbit head, at the instruction of Cobbe's hand, has now adopted a limitless personality but on the surface, it remained as the recognisable face of de Cyon's publication. The doctored image now anticipates Roland Barthes's comment in that it represents a "tissue of quotations" (6) as the dissected rabbit head contains multiple layers and meanings.[29] However, the essential message of the work depends on the impression of the reader, rather than the enthusiasms of its creator. The fluid boundary of the re-fashioned image's utility lies not in its origins or with its creator but in its re-destination, and de Cyon's image now struggles to determine its own identity. Nevertheless, there is an obligation by the reader to linger, examine and reflect with the more clinical term 'examine' becoming substituted for the sensational 'look at' the pictures. While the image is an invitation to look, the added captions that now frame the image more than not insist on the difficulty of doing just that. A voice, presumably the author's, nudges the viewer to challenge whether they can bear to look. It is difficult to look at the images and 'read' without the image encroaching upon the imagination – the two go hand in hand, and even if the images are only tokens and cannot encompass most of the reality to which they refer, they still perform a vital function. They say that this is what humans are capable of doing, may volunteer to do, either enthusiastically or self-righteously, and this was the message supporting the entirety of Cobbe's crusade against scientific experimentation.

De Cyon originally published the image (Plate XXXV) in his foundational text, Atlas der Physiologischen Experimente und Vivisectionen to enhance a professional identity but the image has been forced to sacrifice its scientific birth-right by being coerced into a union with an unlikely partner. The re-fashioned image has now been released to a 'life' outside of the

[28] See *The Zoophilist.* 1 December 1881 141-142 for a detailed account of the trial Professor David Ferrier. Also see, Turner. 113.

[29] See Otis, *Membranes* for discussion on the observation of the body as a collection of tissues, 12.

laboratory and speaks in a fresh language for a potential new audience. This new identity could have moved the image to appeal to new horizons outside of the movement's target audience, namely those offering a sentimental or legislative commodity

The movement's literature was freely available through bookstalls, coffee shops public lectures and campaign headquarters: the potential to reach a wide readership was vast.[30] The temptation to view the representations of invasive surgery on helpless and vulnerable beings may have attracted potential individuals who did not necessarily support the concerns of animal rights. It cannot be said with any certainty who engaged with the activist literature depicting countless representations of flayed and dissected bodies, but as Deborah Rudacille has suggested, the practice of vivisection could be read as "simple sadism dressed up in the language of science" (9). Like lust, cruelty tends to feed off itself and can become unstoppable if left unchecked. In this respect, it is plausible to consider that certain 'readers' may have viewed the illustrations of vivisection as erotic, tantalising or even as pornography.[31] Activist literature played much upon the concealed nature of the vivisector's laboratory but by furtively viewing the literature purporting to represent the wounded bodies of these very sites, the reader unwittingly becomes as secretive as the vivisector. The various interpretations that were potentially open to activist material are explored by Florence Fenwick Miller in *Lynton Abbott's Children* (1879), especially through Marshall Abbott's engagement with a clandestine pamphlet that hints to holding sexual connotations and one that he keeps hidden from family members. (59) For some, pictures of the repulsive can also become alluring and although de Cyon's images do not dwell on the beauty of the animal form, all images that display the violation of a body, whether complimentary or abhorrent,

[30] See letter from Sydney Holland, Chairman of the Research Defence Society published in *The Anti-Vivisection Review* requesting the whereabouts of "anti-vivisection" shops for the purpose of distributing "the truth about vivisection as practised in England" (372).
[31] See Lansbury.

are in differing degrees personally invasive. De Cyon charged Cobbe and her fellow activists of issuing countless “defamatory pamphlets, hair-stirring placards, and monster petitions” (499) and exhibiting them, often larger than life, in public places under the title the “Horrors of Vivisection” (500). The passing of the Cruelty to Animals Act increased lay interest in the activities of the experimental laboratories and their practitioners. This wide-spread curiosity presented a fresh opportunity for the anti-vivisection writers to promote their concerns to a wider audience, other than their list of core subscribers. Most of the activist fiction was published after the passing of the Act but this period also gave birth to a cluster of specialist periodicals that were devoted to the movement’s cause in many ways. One of the first to be formed on 24 June 1876 was the anti-vivisection periodical, The Home Chronicler. Its front page reproduced a large illustration of Plate XII sourced from Cyon’s Atlas:


THE

HOME CHRONICLER,

With which is incorporated "The Health Chronicle."

VIVISECTION.—ILLUSTRATION

Fig. 4. The Home Chronicler. (1876)
Elie de Cyon. Atlas de Methodik der Physiologischen Experimente und Vivisectionen (1876)
British Library: LOU.LON [1876]

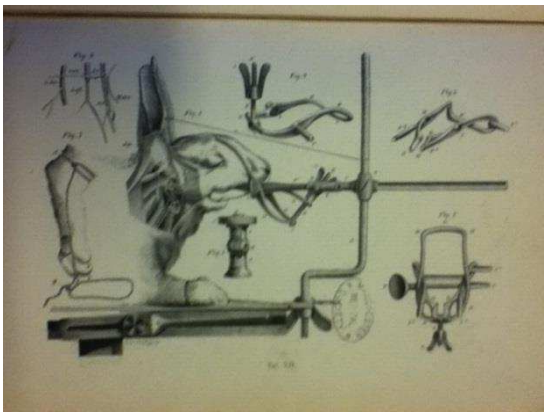

Fig. 5. Elie de Cyon. Atlas der Methodik der Physiologischen Experimente und Vivisection (1876) Plate XII (Wellcome Institute)

The periodical's mission statement was placed directly below the image and within the periodical; a short article entitled "Our Illustration" was published supporting the editorial decision to use de Cyon's image. It is clear from the sympathetic tone of the passage that its vocabulary had been considered with care. The reader is assured that the reproduction of de Cyon's image "speaks for itself" and The Home Chronicler is clear to express that there is no "exaggeration in the copy" (9). By employing the possessive pronounce 'Our', the periodical is demonstrating a perceived ownership of the illustration. As Robert Hariman and John Lois Lucaites have suggested in a discussion on the birth of iconic symbols, the image could "orient the individual within a context of collective identity, obligation and power" (1). By remaining faithful to a few select images, the anti-vivisection movement was able to develop into an identifiable commodity through a few recognised symbols that tapped into the recognition of many people of varied backgrounds. The periodical's decision to remain faithful to a narrow set of images cultivated its identity in what would be now recognised as a striking parallel of a modern-day brand logo. Although the Home Chronicler emphasised that de Cyon's image 'spoke for itself', in effect it stood as witness to something that exceeded words. It became a veneration symbol that could elicit emotional responses from anyone that viewed the image and who would then hopefully subscribe to the cause. Consequently, the representations of de Cyon's brutalised and wounded bodies helped in securing an identity for The Home Chronicler: acting like a flag of pride and patriotism, the image rallied the troops to battle against the 'army of science.' After its first issue, The Home Chronicler chose to abandon the publication of all images until a double page spread appeared on the penultimate pages, thirty-one weeks later, faithfully reissuing the same two illustrations from de Cyon's Atlas. With subsequent issues, the images slowly crept, page by page, through the periodical, until they returned to the front cover.

Occasionally de Cyon's 'illustrations of vivisection' were substituted for an image sourced from Claude Bernard's Leçons sur la Chaleur Animale (1876) showing a rabbit undergoing a process entitled "For Studying the Mechanism of Death by Heat," but the central focus remained with de Cyon's text. Cobbe was Honorary Secretary and held a position on the Executive Committee of The Home Chronicler, and it is plausible to suggest that she was instrumental in the editorship of the images, especially as they were often identical to those gracing her publications. The repetitive use of the one set of images, ensured Cobbe's argument maintained its potency for a variety of audiences. Her dogmatic approach to editing scientific texts placed her numerous times on the front line for receiving vitriolic attacks in the scientific press on charges of misrepresentation.

As Hamilton has surmised, The Home Chronicler was unique in publishing such representations of vivisection in such a bold fashion. Other activist periodicals, namely The Zoophilist, thought that the images would limit the periodical's appeal to its readers and make them turn away in disgust and for this reason, it declined to follow suit.[32] The Zoophilist did offer "Photographs and Woodcuts" of large diagrams of a vivisected dog and rabbit for purchase, and it is fair to presume these matched those that they declined to publish[33]. The Home Chronicler did receive reader complaints urging the cessation of the illustrations and although these letters were never published, the letters supporting the reintroduction of the illustrations were printed sporadically, although it is not conclusive who authored the supportive correspondence. After completely withholding the images from its readership, The Home Chronicler decided to make an editorial change and recommenced with the following statement on the front cover for 5 January 1878:

[32] *The Animal World,* the monthly periodical of the Royal Society for the Protection of Cruelty to Animals carried many pastoral illustrations of animals. *The Anti-Vivisection Review* (1909-1927) regularly published photographs of activist events, prominent members of the periodical and embraced the use of cartoons.
[33] See *The Zoophilist* "Photographs and Woodcuts" 2 May 1881 (16).

> the publication of our 'illustrations of Vivisection', has been resumed. These will be published weekly on the two pages next to this title page, there, but there only. Those who wish to avoid them may do so, therefore, by not cutting the first leaf. (1)

The periodical then reassured its readers that they could read their Home Chronicler "in security, in the knowledge that nothing afterwards would make them afraid" (1). This presents the reader with a conundrum as they cannot escape from being morally compromised despite the decision they adopt. When the images did make an appearance, the reader subscription form had been transferred from the inside back cover and was repositioned directly below the image. From now on, if any reader wished to renew their allegiance to the cause, they had to either view the images at the same time or sign the page with their eyes closed. In this manner, it is evident that the reintroduction of the images was discretely manipulated and readers were reassured that it was the editor's intention "to shortly give a second illustration of vivisection" (40). Small, thoughtfully placed announcements were issued on a weekly basis informing readers that the next issue would carry the 'illustrations of vivisection', but they failed to materialise until a further two months after the initial announcement. This tactic continued until the periodical announced that "owing to an accident, the image would be 'postponed' (88). The editorial bravery shown by The Home Chronicler in publishing such images confirmed its place as peerless throughout its short existence. This inflexible approach was ruthlessly employed from the outset and no other anti-vivisection periodical demanded such commitment and engagement of its readers. The first number of The Home Chronicler incorporated The Health Chronicle: a publication concerned with topics of domestic health and pastoral care. It is clear from its introduction that The Home Chronicler had not yet secured its own identity:

> 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 much 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. (1)

The two periodicals were conjoined until 28 July 1877, but during the initial stages of The *Home Chronicler's* editorship, the twinning of the periodicals enabled the anti-vivisection movement to reach out to potential new readers through a variety of more domesticated topics. When The Home Chronicler did become independent, it re-fashioned itself as "A Journal Advocating The Total Abolition of Vivisection" (913). By subtly drawing in connotations of slavery, it strengthened the movement's intention for the total eradication of oppression and servitude, likely identifying with both animals and women. In the words of the anti-vivisection poet Ella Wheeler Wilcox, the periodical literally became "the voice of the voiceless" (1) and was likely to appeal to all those that understood, and experienced, repression in a variety of forms. There was no forewarning that The Health Chronicle would be discontinued and it has not been possible to ascertain if the readership welcomed the new format or to obtain any accurate circulation figures, but it is fair to speculate that those readers who welcomed such topics as the "Dietary of the Sick-Room" (11) alongside accounts of "The Great Rose Show" (37) may not have been ready to partake in seamless accounts of the experimental laboratory with accompanying graphic illustrations.

By the time of the reintroduction of the images in 1878, The Home Chronicler was placed in the fortuitous position of building on the public interest shown in animal welfare after the passing of the Cruelty Act. By this stage, there could have been a fear that compassion had been stretched to its limits and the movement could have been required to formulate a fresh ability to shock as people can turn off, not just because of a steady stream

of images of violence has made them indifferent, but because they are often afraid. The Home Chronicler had already engaged with the power of withholding the image. The editors had clearly shown the ways in which they knew how to manipulate its audience's sensibilities, but if the reader followed the periodical's suggestion and cut to page 3, they would have had little choice as to whether they viewed the image, as the image viewed the reader as they turned the page. The illustration below shows the image at a forty-five degree turn:

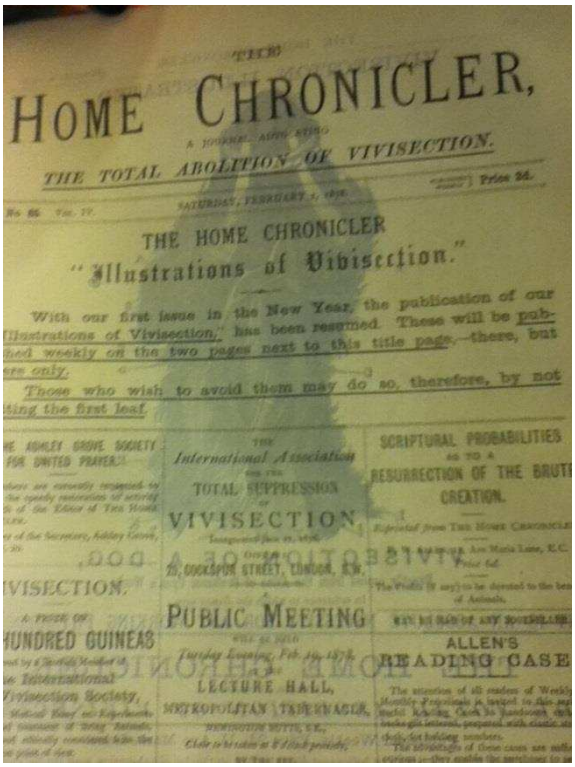
THE
HOME CHRONICLER,
A JOURNAL AND ORGAN
OF
THE TOTAL ABOLITION OF VIVISECTION.
Price 2d.
SATURDAY, FEBRUARY 1, 1879.
THE HOME CHRONICLER
"Illustrations of Vivisection."
With our first issue in the New Year, the publication of our "Illustrations of Vivisection," has been resumed. These will be published weekly on the two pages next to this title page,—there, but there only.
Those who wish to avoid them may do so, therefore, by not reading the first leaf.
THE ASHLEY GROVE SOCIETY FOR UNITED PRAYER.
THE International Association FOR THE TOTAL SUPPRESSION OF VIVISECTION,
SCRIPTURAL PROBABILITIES AS TO A RESURRECTION OF THE BRUTE CREATION.
Reprinted from THE HOME CHRONICLE
PUBLIC MEETING
ALLEN'S READING CASE
LECTURE HALL,
METROPOLITAN TABERNACLE,

Fig. 5. The Home Chronicler (1) Original image sourced from Elie de Cyon's Atlas der Methodik der Physiologischen Experimente und Vivisectionen (1876) British Library. LOU.LON (1878)

As the reader turns the page, the image of de Cyon's vivisected dog is clearly outlined through the leaf. The clarity of the image, and consequently the possibility of controlling an allusion to the intensity of pain experienced by the animal, may be manipulated using light filtered through the page. As the page is tilted, the image becomes stronger and hence, the

wounded detail more explicit. This action provides the reader with a clearer view of the wounds, cuts and lashes that metaphorically draw them closer to the laboratory bench. Given that the core purpose of the periodical was to assist in the elimination of these very experiments, it appears now to invite the reader to engage in a form of the process itself. During the natural progression of turning the leaf, readers are invited to be voyeurs, regardless of their original intention. In each instance, the gruesome invites the reader to be either a spectator or coward, and their responsive actions challenge their own morality in a role that is authorised by the glorious depictions of another's suffering. There is an important distinction between 'looking' and 'seeing'. 'Looking' is a physical event while 'seeing' is an active process mediated by the mind. 'Seeing' interprets and processes the image of the mind and, readers could not look at an image and see nothing. However, for all the voyeuristic lure and possible satisfaction of seeing the image, it could suggest that everyone is a theatrical spectator who views the images of others' pain.

THE RELATIONSHIP BETWEEN VIVISECTION AND DOGS

The anti-vivisection writers did not rely entirely on images of the gruesome to motivate the readers into action. They recognised that the strong focus on dogs as victims of abuse was particularly persuasive in convincing the public to join the cause and decry vivisection. Dogs were identified in the Victorian consciousness as family friends and devoted servants: they embodied Victorian values more fully and consistently than any other creature. As Paul White has observed, they were "ranked among the highest animals because of their moral nature, not their intellect" (67), and the appreciation held for pets provided a lucid space for the activists to symbolically construct an identity that would resonate with a wide-ranging set of readers. According to some, the freely flowing exuberance and affection of dogs made them more human than man. Cobbe described them in her autobiography, Life of Frances Power Cobbe, as "intensely human" (2:241) and the movement frequently used Sir Edwin

Henry Landseer's popular anthropomorphic paintings of dogs for this reason. Landseer's identity was cast in his life-sized paintings that usually offered a narrative content and drew attention to the dog's human characteristics: specifically, the soulful look and gentle dignity. The Home Chronicler was not alone in using Landseer's paintings. In 1910, The A*nimal's* Guardian published a supplement revealing the "Shocking Abuses in a Scientific Laboratory" with a cover picture of Landseer's Divine Member of Humanity that presented the moral challenge: "Save me! I would Save You" (1). Although there is no public record of Landseer advocating any anti-vivisection interest directly, given his subject matter, it could be considered that he would not have objected to providing any posthumous support. The use of Landseer's anthropomorphic paintings of dogs did help to "sentimentalize the vivisection debate to a broad audience" (Stockstill 126) and diffuse the mental 'sting' of the brutality attached to the practice of vivisection that may otherwise have alienated certain readers.

On 12 August 1876, a small oval engraving based on Landseer's painting 'A Distinguished Member of the Humane Society' (1831) replaced the image of de Cyon's wounded animal body on the front cover of The Home Chronicler. Viewed as the size of a small badge, it was strategically 're-pinned' across the cover at editorial will: a subtle tactic that enabled the periodical to concentrate, and redirect, emotive support to the crucial topic carried on any individual issue. The 'pin' depicted a variety of breeds and, therefore, 'spoke' in a multi-lingual voice, but a strong resemblance to Landseer's portrait of the Newfoundland dominated the group. The diversity of the dogs mirrored the uniqueness of the readers and it was a clever reflexive tool: readers would likely identify with a resemblance of their own cherished pet on the 'pin'. The decision to focus on dogs, and especially those breeds recognised as pets, reflects the innate nature of how the movement understood the breed's persuasive power over a British audience. After the contentious issue of publishing de Cyon's

images had passed over, The Home Chronicler offered an alternative of a large image clearly modelled on Landseer's painting:


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 INTER-
NATIONAL ASSOCIATION.
THE SLAUGHTER-HOUSE QUESTION.
COUNT TORNIELLI—A Correction. A FEW WORDS FROM THE DUMB.
FEATHERED FRIENDSHIP. CORRESPONDENCE.
&c. &c.
THE FRIEND OF MAN.

Fig. 7. British Library. LOU.LON (1878) The Home Chronicler June 8. 1878. No 103. Vol IV

Fig. 8. Sir Edwin Landseer (1802-1873) "A Distinguished Member of the Humane Society" (1831) Image sourced www.Tate.org.uk

Landseer's portrait possessed the potential to entice those readers to the periodical that had been repulsed by de Cyon's images, but despite its stoical façade, if inclined, the reader would be able to detect the ethereal figure of de Cyon's Plate XXV, that was now relegated to the inside leaf, and shadowed the cover image through the page (see fig 7). The two images appear to strive against one another to compete for the reader's attention and consequently, salvation for the wounded animal chips away at the reader's moral conscious. Once the dual image is detected, they appear at the outset, conjoined, but there is one significant aspect that divides their union: one stares directly at the reader, while the other is sightless. Susan Sontag

has identified that one of the most striking and obvious ways to achieve sensory identification is to highlight the eyes (23). As Bourke has identified, "pain is infinitely shareable" (234) and Landseer's sighted animal appears humane, full of expression, devoted and patriotic while its counterpart, de Cyon's wounded, visionless being, is battling for a voice: it appears brutalised, mute and inhumanely silenced. If not concerned with an optical experiment, it was common for illustrations of vivisected animals to be shown with eyes closed. It is a natural reflex to clamp one's eyes shut when experiencing pain but the activist writers subjectively trained their readers to concentrate on 'reading' the wounds using the eye's ability to read pain.

When the two images are viewed as a pair, Landseer's portrait demonstrates a power of stoicism that breaks up the pattern of assurance. As a humanitarian shield, it attempts to protect its tortured brethren and embodies the role expected of the anti-vivisectionist. The ethereal shadow of the vivisected dog strives for a release from its consistent pain but although silent, sightless and suppressed, it 'speaks' to the reader of all that is possible of the vivisector in the name of experimental science. As the image pushes away from the internal page to reach the reader, it demands direct interaction. If the viewer declines to engage, their own moral integrity could be classed as negligible. Like the 'Brown Dog' monument erected in Battersea Park (1875) to honour the animals sacrificed to vivisection, the twinned image represents all that was hidden, wounded and tortured in the name of experimental science. For the anti-vivisection writer, this polycephalic image exists akin to a Jekyll and Hyde character that easily fed into the dualistic personality of the vivisector that was avidly promoted within the pages of activist fiction, and epitomises the content and concerns of Cobbe's essay "Vivisection and its Two-Faced Advocates."

Throughout "Light in Dark Places" and "Vivisection and Its Two-Faced Advocates", Cobbe had described the vivisection experiments in Gothic terms, and the boundary between fictional representations of science and what happened in the laboratory became increasingly blurred. As Keir Waddington has identified, late-Victorian "[r]eaders were familiar with the multiple personas doctors adopted in fiction, from the family doctor … to their darker role as villains in Gothic fiction" (251) but late-Victorian Gothic fiction no longer centred on the themes of earlier Gothic tradition. For example, although Catholicism and corruption still shadowed the vivisection text, late-Victorian Gothic fiction concerned itself more with the human body itself. Gothic explored the theme of the human body and mind changing. Physiologist Michael Foster testified in his article "Vivisection" (1874) that he personally knew men who "might be an angel in the bosom of his family, but a demon in the laboratory" (368). Cobbe referred to vivisection experiments in her essays as "the deeds of darkness" where the "victims" of the laboratory were "larded down with nails" and fastened to the "torture troughs" ("Light in Dark Places" 56). Cobbe does not engage with the gothic tropes of exotic landscapes, crumbling castles and torch-lit monasteries, but she does repetitively hint back to hidden times and the dubious crimes of "Christian countries" (56), namely shadows of the fifteenth-century Spanish Inquisition filter through many of her texts. In "Light in Dark Places", she quotes verbatim from de Cyon's Atlas der Methodik der Physiologischen Experimente und Vivisection where he describes a vivisection practice that accompanies Plate XXXV:

> The rabbit is firmly fastened to the ordinary vivisecting table by means of Czermak's holder. Then the rabbit's head is held by the left hand, so that the thumb of that hand rests on the condyle of the lower jaw. This is used as a *point d'appui* for the insertion of the knife … To reach the hollow of the temple the instrument must be guided forward and upward, thus avoiding the hard portion of the temporal base and leading

> the knife directly into the cranial cavity … The trigeminus then comes under the knife. Now holding the head of the animal very firmly, the blade of the knife is directed backwards and downwards and pressed hard in the direction against the base of the skull. The nerve is then generally cut behind the Gasserian ganglion, which is announced by a violent cry of agony (einen hefigen Schmerzensschrei) of the animal. (Emphasis as original in Cobbe 7)

The passage has been quoted at length to emphasise both the tactile nature embedded within the passage and the intricacies involved in vivisecting a body. Illustrations of Kaninchenhalter von Czermak's laboratory apparatus were regularly featured in activist literature as examples of the 'instruments of torture' used in the vivisection laboratory. These images never carried any accompanying descriptions as to the utility of the apparatus: this was likely due to the anti-vivisection writers not knowing how they functioned than for any devious intention. As mentioned earlier in this chapter, there was always the possibility that images of the gruesome attracted those individuals existing outside the periphery of those concerned directly with the welfare of animal rights. Almost six months after its initial publication, The Home Chronicler published a letter authored by F. G. F. Goddard who requested an explanation as to the "purpose and effect of the "infernal machines" proposed to assist "unscientific minds" (411). At the outset, Goddard's request appeared inquisitive, but as the correspondence progressed, Goddard became intrinsically concerned with the level of pain associated with the apparatus. Without offering any clear scientific reasoning, Goddard asks if "the apparatus is intended … to stifle the cries and shrieks of the victims, and suppress them into internal moans" and further enquires if it is fit for purpose as "in spite of gags and stifling straps, it seems that shrieks and yells will force their way, to ring again" (411). The enquiry then focuses on the potentiality of these cries, shrieks and moans in attracting attention from a passing stranger who upon "making his way into the hell-pit, should discover

the … playfellow of his children" (411). The "stifling straps," "shrieks" and "yells" appears to owe more to imaginative connotations of Victorian pornography than to the vivisector's laboratory, and there is a strong insinuation that Goddard is primarily concerned with self-detection than with the initial enquiry relating to the utility of the machines in any scientific sense. The description Goddard provides of the opening of a non-specified body appears particularly brutal:

> The skin is cut into, flayed, and turned back like the flaps of a book, exposing the viscera and all the sensitive internal organization, giving free access to the knife, and wha'ever other modes of experimental torture it may suit the pleasure of the operator to apply. (411)

There is no information offered as to Goddard's specific profession or gender. Judging by the simplistic interest in the vivisection apparatus, it is fair to conclude that Goddard would not be familiar with first-hand laboratory practice. Therefore, the above passage can only be interpreted as imaginative and could be read as representative of the close relationship between fiction and factual understanding of the laboratory. On 5 August 1876, The Home Chronicler published a small illustration of de Cyon's vivisected dog that notified the reader that there was "no question" (105) that anaesthesia had been employed during the operation. The article appeared to clearly emphasise the pain experienced by the dog during the operation. The text was placed at the lower right-hand corner of the page, just beneath the image, where it confirms to the reader that the vivisector performed these "methods of injury with his own hands" (104). This is just at the point where the reader was likely to use their own hand to turn the page. The hand of the reader and the vivisector come into proximity via the image. The vivisector and the anti-vivisectionist metaphorically both touch the animal and due to the nature of the image, it could be read that it was a shared experience.

PROTECTING SCIENTIFIC IDENTITY

To counter the swelling tide of anti-vivisection rhetoric, de Cyon responded in the same year to Cobbe's "Light in Dark Places" with his own essay entitled "The Anti-Vivisection Agitation", published in the Contemporary Review. Despite admitting that "too much has already been said of this unhappy topic", de Cyon did not refrain from taking "to task" the "voluminous" (496) literature which he felt the debate had already produced. From the outset, de Cyon made it clear that he did not reserve his wrath solely for the "explosions of a coarse fanaticism" (499) and he publicly reprimanded his "own scientific co-religionists" who, in de Cyon's estimation, had "gone too far in the conflict with unreasonable adversaries" (498). De Cyon questioned his peers as to what:

> they possibly propose to themselves in carrying on a scientific discussion with the persons whom interest or eccentricity has led to declare a war against laboratories? … Fools cannot be convinced … [d]o they hope to influence public opinion and keep it from going astray? If so, one can but admire their childlike confidence in the general good sense. How can they expect to come victorious out of a contest with maniacs by taking the ground of scientific discussion where all the chances of success – insecurity, ignorance, and, above all, human stupidity, the supreme dictator of every popular verdict – range themselves on the side of the enemy? (498-9)

The tone of de Cyon's passage is brusque, chastising and likely written to elicit a response from both sides of the debate. The above rebuke is punctuated with connotations of warfare and he appears to have written with a scalpel in one hand and pen in the other, while fuelled by passion and resentment. He sneeringly childes his peers for engaging with a group of "outsiders whose judgement" de Cyon considers is "worthless in matters of science" (499). There is no biographical record of de Cyon engaging personally with any anti-vivisection

movement, but the content of his essay implies that he held a considerable interest in their activities. De Cyon was writing in the shadow of the much publicised Royal Commission on Vivisection (1876) that was set up to regulate the practice, and he was likely to have been acutely aware that the future of any research was likely subject to Governmental funding. The findings of the Royal Commission were published in the publicly accessible Parliamentary Blue Books, and the rhetorical statements of vivisectors were frequently gleaned and edited from these Books to re-emerge in supporting much of the activist literature. This profile-splicing tactic assisted the anti-vivisection writers in constructing a personality for the vivisector from his own words that, in turn, graced their fiction and ignited their reader's imagination.

Throughout his essay, de Cyon appeared to isolate the women anti-vivisectionists for what on the surface appears as a misogynistic attack, irrespective of the interests, age or appearance of these women. He addresses his reader direct and asks "[i]s it necessary to repeat that women – or rather, old maids – form the most numerous contingent of this group?" (507) Given that de Cyon's essay would probably have been read by both sides of the debate, it is plausible that he is deriding, or more likely, baiting, the very people he is addressing. He unquestionably assumes that these women's interests have developed from a lack of adhering to the stringent Victorian discipline of the separate spheres. De Cyon's analysis appears to have been drawn from the assumption that these "old maids" who are "despised by man" have consequently found no alternative in life other than to fling their unrequited passion "at the feet of cats and parrots" (499). At no point does de Cyon acknowledge that free will may have compelled these women to choose to join the movement. Neither does he appear to consider that the movement was not purely confined to women members. Many of these women were married, and this was an issue de Cyon freely chose to ignore throughout his essay. Rather than achieving 'satisfaction' within domesticity,

de Cyon cites “excess time” and “misplaced sexual and maternal energy” (500) for their involvement with the Movement. Further into the essay as de Cyon builds a stronger portrait of the anti-vivisectionist, he focused this gendered lens and demanded of his “adversaries” to “contradict” him “if they can show among the leaders of the agitation one young girl, rich, beautiful, and beloved, or one young wife who has found in her home the full satisfaction of her affections!” (507) There was no direct reference to Cobbe, but she was the publicly recognised face of the anti-vivisection movement and de Cyon’s staunchest opponent. She was middle-aged, unmarried and without a private income, and it is fair to presume that de Cyon metaphorically moulded every activist in her image, regardless of age, background or intellectual bearing. Cobbe consistently referenced de Cyon’s publications throughout her activist writings and it is fair to interpret de Cyon’s essay as a personal, and unfair, attack upon her character, appearance and professionalism. The essay closes with de Cyon embracing an evinced identification with “[e]very sensible reader [that] has already passed judgement” that these “disordered minds” (236) should take “refuge” in convents (510). The inclination to suggest that women activists would be better suited to Christian duties was a subject that filtered in to vivisection fiction throughout the debate. De Cyon’s comments appear misogynistic but Florence Marryat addresses an identical scenario in her novel An Angel of Pity. Madame de Comtesse advises Rose Gordon, the strong willed, and medically educated, wife of her nephew, Quinton Lesquard, that if she cannot accept his vivisection interests, then there is always a place for “a lady” to embark on a “respectable refuge in a convent” (218). De Cyon’s essay was written prior to the publication of Marryat’s novel, but by placing it on the lips of Madame de Comtesse, the phrase illuminates that prejudice was experienced by women who supported the cause from others than the male professional. De Cyon’s characterisation of labelling these women as lonely, forsaken ‘old maids’ with only their pets for company, appears a lazy reference to the stereotypical spinster portrayed in the

Victorian card activity called the "Jolly Game of Old Maid": a solitary figure who was always depicted as having tea with her cats and a parrot.

In May 1888, The Zoophilist published a letter from "one of M de Cyon's Hysterical Old Maids" (89-90), and the literary fingerprint points to the likelihood that it was authored by Cobbe. The penning of anonymous letters to the anti-vivisection periodicals was a discreet and effective way for Cobbe to respond to the science profession without receiving any acerbic retribution for publishing her opinions. The 'Old Maid' referred to de Cyon as the "illustrious – and illustrated professor" (89) and in doing so, teased out his vanity as a satirical focal point of the response. She neatly side-stepped any reference to the anti-vivisection agitation and reflected de Cyon's cutting tone by exposing what she perceived as a shallowness of his character. The 'Old Maid' mocks de Cyon's outrage over his portrait published in an unreferenced activist cartoon. De Cyon had earlier rejected the profile of the "shabby old man, with pimpled face and spectacles" as an imposter, especially as, at the time, he was "only thirty-two" years old. (90) The 'Old Maid's' empathy that he "still suffer[s] after five years, from the same short burst of street celebrity" (89) thinly masks a charge of vainglory. There is substance to this claim as most of the science profession did not respond to the activists in print, but de Cyon's outburst was as emotive as the very people for whom he was attacking for being drenched in sentimentalism. Almost with exception, activist writers portrayed vivisectors as being driven by professional recognition: they yearned for peer recognition and adulation. The "famous doctor" (184), Nathan Benjulia, from Wilkie Collins's Heart and Science, admits to his brother, Lemuel, that he researches, and consequently, vivisects, for his "own unutterable pleasure in beating other men – for the fame that will keep my name living hundreds of years hence" (190). Cobbe assisted Collins with the research for his novel and although there is clear evidence to argue that Benjulia is drawn from the neurologist David Ferrier, the Jewish heritage and celebrity status that de Cyon and

Benjulia share also strongly suggests that Cobbe was instrumental in extending his "short burst of street celebrity" for some considerable time.

There was no need for a counter-argument from the activists as de Cyon's own words returned to challenge his reputation. In "The Antivivisection Agitation", he admitted that his vivisection plates could "no doubt be distressing" for those "possessed of excitable sensibilities" to witness if "they had represented operations on the living subject" (503). De Cyon then provided a detailed account of an operation that supported Plate XII and emphasised that the image was drawn from the "dead body of an animal." In describing the operation, he outlined how "the blade of the knife is directed backward and downwards and pressed hard in the direction against the base of the skull. The nerve is then generally cut ... which is announced by the violent cry of agony" from the animal" ("Light in Dark Places" Cobbe 27). It cannot be said with any certainty but it is plausible too that the image of the vivisected rabbit was drawn from the body of a dead animal, but it is clearly apparent from de Cyon's own account of the operation, that the procedure was executed on a living being as there could be no "cry of agony" if life were extinct. Cobbe further challenges the issue of pain attached to these images regarding one of the drawings of a dog used on the "life-size ... hoardings of London in 1877" (23). One of the images depicted a dog wearing an "elaborate muzzle", which she rightly stated would have been unnecessary if pain relief had been administered. It also confirmed that the image was likely drawn while the animal was still alive and undergoing the operation.

Cobbe's editorial reputation later fell under further close inspection with her association to the Nine Circles of Hell of the Innocent (1892) edited by G. H. Rhodes and printed at the expense of Cobbe[34]. Cobbe admitted that she had given the sanction of her name and

[34] For further information on the critical reception of *The Nine* Circles, see Stephen Paget. *The Case Against Anti-Vivisection,* The Scientific Press Ltd, 1904.

"planned" (vii) the book, but stressed that she was not liable for any of the quotations it contained. Like many of her earlier publications for the Victorian Street Society, the Nine Circles was compromised of edited sources from medical and scientific texts. Indignation was roused from the science profession because of twenty-two out of the one hundred and seventy narratives of various experiments, many of them cataloguing a series involving a variety of animals in each – the mention of the use of anaesthetics was omitted. In Life, Cobbe recalled how she was asked to provide an account of her responsibility to the text at anti-vivisection meetings (2:309-10) but said she had adequately addressed the use of pain relief in the preface (xi). Cobbe used colloquial language throughout Nine Circles to describe the experiments. By abandoning scientific jargon and using graphic imagery to describe the "insertion of broken glass into ears, muscles [and] and intestines" alongside the poisoning and stiffening of a dog "like a piece of wood," (xii), she was able to place simple, but stark, images in the minds of her readers without resorting to illustrations. Physician Edward Berdoe wrote in various publications defending Cobbe against fellow physiologist Sir Victor Horsley, who described The Nine Circles as "one of the rankest impostures that had for many years defaced English literature" and implied that Cobbe had "deliberately and fraudulently misrepresented the actual facts" (Mitchell 339). With descriptive accounts of animals being "stewed to death" (129) and of "fastening animals till they grow together" (133), The Nine Circles of Hell was, irrespective of Cobbe's involvement, a damning indictment of the practice of experimental science. The text tapped into Cobbe's use of Gothic tropes to acerbate the dread of vivisection transferring from non-human to human beings. Cobbe stated in the preface that Nine Circles consisted of "verbatim extracts with references" (viii) taken:

> in most cases from the actual reports of the vivisectors themselves as published in their own books and in the scientific journals, or abridgements of the same; with

> occasional explanations of the scientific terminology or notes on the presence or absence of anæsthetics. (viii)

Nine Circles was a collection of heavily edited accounts of vivisection practices, but the left-hand margins carried at irregular intervals the word '𝔈𝔫𝔤𝔩𝔦𝔰𝔥' displayed in red ink as evidence of vivisection practices performed on home shores. This 'stamp' of shame proceeded to wander through the text like a trail of bloody footprints that metaphorically stood at the front door of every English laboratory in justification. The randomly spiked crimson inked words could not have passed unnoticed and likely infiltrated the reader's conscious as effectively as if the animal had dragged its body across the page dripping blood. For this reason, the Nine Circles took on the appearance of the real-life vivisector's notebook, with pages that appeared to be splattered with the internal organs from those described on the page. As the reader is perusing the pages of graphically recounted operations, it was as though they were assisting in the laboratory and compiling their own set of notes. One of the most intricately detailed chapters was the seventh entitled "Flaying alive and Varnishing." The short chapter described the methods of scalding and skinning dogs alive, "leaving only those parts covered which were difficult to deal with, namely the head and feet." The text further confirms "they never survive the loss of their natural covering (127) implying that a similar fate should be attached to the moral sensibilities of the reader. Cobbe's use of the Blackletter typeface for the word 'English' held biblical connotations. It was used in the Gutenberg Bible, one of the first books printed in England, but during the 1500s, it became less popular for printing in many countries except Germany. By announcing in the preface that the "most cruel experiments are only performed abroad" (xi), Cobbe proceeded to splatter the pages with the red-inked Blackletter typeface across the page. This visual tactic tapped into the trope of the vivisector as a 'priest of progress' alongside the threat of the continental physician.

The publication of The Nine Circles caused considerable damage to the reputation of the anti-vivisection movement, and although Cobbe never admitted that she "willingly stretched the truth" (Obenchain 9), she offered to issue a revised edition "to wipe out the wrong" (2:309). In the Case Against Anti-Vivisection (1904), Paget stated that although the Nine Circles "purported to be an exact account, from original sources" (20), anti-vivisection literature was prone to revision and a reissue following critique. Paget highlighted a "revised issue" in "[t]his" 'official journal of the National Society … the *Zoophilist"* and dismissed the claim that the periodical "speaks … as a 'scientific journal'" (21). He classified The Zoophilist as the "organ of the anti-vivisection movement in England" that is obtained through "any bookseller" (21). On 1 September 1900, the front cover of The Zoophilist and *Animal's Defender* named three booksellers where copies could be obtained and as it is clear from the members' list, many of its patrons were from the cultured classes who embraced the era of the journal. Professional scientific journals were available through subscription and not published with the sole intention for mass lay consumption, but literary and scientific articles accompanied each other in such journals as The Fortnightly Review and The Contemporary Review. Paget's implication that The Zoophilist, and consequently, The Nine Circles, are no more intellectually based than 'shilling shockers' has more to do with their content alone, than with any parallel with the mass production of sensation novels.

THE PLAYGROUND: POETIC CONTRIBUTIONS

Fiction, essays, interpretive accounts of the laboratory and poetry provided a voice for the anti-vivisection writers to name and articulate emotions. These contributions were published by the activist periodicals with regularity but they often appeared as a textual echo because they addressed topical concerns discussed in an earlier issue. Poetry appeared to be written in response to a contributor's letter or a published article, and this could suggest the identification of a readership group, although not always the specific identity of any

individual author. As DeWitt has observed, most of the short stories and poems focused on a vulnerable pet (147), and these 'literary' contributions could have been an attempt for editors to reach out beyond their core, loyal band of supporters. Generally, the poems did not centre on the core issues concerning the debate, namely the advancement and methods particular to vivisection or any other scientific method, and contributors presented eulogies, devotional pieces and pastoral verse. By moving focus away from the moral character of the vivisector, the anti-vivisection writers, were able to "circumvent accusation that they lacked [scientific] experience (DeWitt 133). This tactic enabled individuals to respond to a cultural debate in a swift and concise manner in a fashion that fulfilled their needs, and not always those crucial to the movement. The anonymity attached to the poems and the diverse range of topics from which they appear to have hatched, renders it impossible to decipher if the poetry was gendered. It cannot also be discounted that the cloak of secrecy could have offered science writers an opportunity to contribute to the anti-vivisection cause without risking professional ruin. A small section of the poetry did address the moral integrity of the vivisector and these occasions could have permitted science professionals to find a 'voice' that would otherwise have been ostracised by their peers.

Despite the varied ground from which the poetry emerged, it did lend itself well to the bursts of radicalisation attached to, and existing on the periphery, of the cause. Writers were able to create narratives that showed the power of literature: every word, and every stanza, was packed with sentiment. The opening line of Ella Wheeler Wilcox's poem, "I am the voice of the voiceless" (1) written especially for the Animal Congress in 1909, was devised to be sung, like a hymn. Similar to Cobbe's use of explicit scientific images, Wilcox's verse could be easily remembered, unified its congregation and appeal to many as all-inclusive. Through the power of verse, those that felt isolated were no longer one 'of the voiceless'. Wilcox's reworking of the line "I am my brother's keeper" (21) from the biblical

"Am I my brother's keeper" (Gen. 4:9) recalls the anti-slavery motto "Am I Not a Man and A Brother" that accompanied Josiah Wedgewood's medallion issued in 1787. Wedgewood's docile and supplicatory figure was widely reproduced on domestic objects and popular fashion accessories. In 1861, Punch satirised Darwin and Huxley's evolution hypothesis in a reworking of the phrase with the cartoon "Monkeyana" showing a Gorilla wearing a tabard with the slogan "Am I A Man and A Brother?" By drawing on earlier inspiration, Wilcox's verse helped galvanise support for the cause.

The majority of the anti-vivisection periodicals maintained an editorial template in publishing poetry. The contributions kept to the same pages in every issue, and offered a sense of protection from the gruesome details attached to the essays. The Zoophilist also introduced a section entitled "The Playground", where readers could publish fiction, poetry and memorabilia. The Zoophilist introduced this section to its readers on 1 January 1883. It said:

> We hope to present our readers each month in future with a certain proportion of literary matter of a brighter hue than that which belongs to our leading articles, reports, and reviews. For the present NEW YEAR NUMBER, we have exceeded our allotted space to afford to all true Zoophilists the pleasure of reading the entire Tale of Pompey's Peril, written for and generously presented to the Victoria Street Society, by MRS CASHEL HOEY. Our readers must, of course, pass their own judgement on this story, but we can assure them in advance that they will not be pained by its perusal. (3)

The passage above invites its readers to frequently visit 'The Playground' as a site of textual respite from the 'horrors' of vivisection. There appeared no specific regulations for reader submissions, other than the overwhelming pastoral nature that prevailed every issue.

The Animal World, the official publication of the Royal Society for the Protection of Animals, was recognised as the main pastoral publication and it is plausible to suggest that "The Playground" aimed to appeal to the same readership. Despite its narrow focus, the 'Playground' did assure its readers that 'illustrations of vivisection' will not be a feature. In this section, the pain was sanitised and the mechanics of the practice merely inferred, if at all, although the wounds themselves would be lying just below the surface page and for this reason, the 'Playground' offered an area to register a deep moral response, but from a comfortable distance. Like all playgrounds, it was a defined by its borders and there were no contributions published from the science profession. 'The Playground' therefore, presented a one-sided perspective of the debate. The title suggests an area for family recreation but as Hamilton, as suggested in "Pets and Scientific Subjects" (1992), "it is not clear that this section was produced primarily for children" (91). Parents could have read the morality tales to children but like a fairy tale, there was always a bogey man lurking in the shadows: in the 'Playground', 'flayed' and 'dissected' bodies often lay a page away. The Zoophilist abruptly ceased publishing 'The Playground' after three months, without any explanation and it has been impossible to detect a return to publication. A plausible reason could have been a lack of submissions or interest but a more likely scenario was one of committing the pages to core vivisection issues.

In July 1887, Lewis Morris published a poem entitled "In a German Laboratory" for The Animal World. Morris was a prolific contributor to activist periodicals and provided a signature to his work. The poem presents the internal monologue of an anonymous vivisector considering the outcome of a neurological experiment performed on a dog:

> Later on, still a thirst for knowledge, once more
> I carved the weak brain, as I did before,
> Till the poor dumb wretch, as he lay on his side,

With a loving look regarding me, died (32-36)

The Animal World did not publish images of vivisected animals and Morris's lines textually attempt to recreate an instance of scientific nihilism for its readers. It is stated from the outset that the vivisector had taken care to select an "intelligent dog" (1) for its "truthful, half human face" (40). Reproductions of Landseer's "A Distinguished Member of the Humane Society" accompanied numerous anti-vivisection tracts. It would not have taken a huge leap of the imagination for readers to conflate the "truthful, half human face" with the "poor dumb wretch" that lay on the bench. Landseer's Newfoundland made visual contact with the readers of the Home Chronicler, but in the absence of a graphic image, Morris textually sketches an image to 'visually' connect the reader to the "loving look" (36). The last stanza draws to a close with the final breath of the dog:

Poor brute! he lies dead for knowledge, and I
If I grasp not the clue, yet I may by-and-by.
Strange how weak man is, and inform of will,
For sometimes I see him and shudder still- (37-40)

Morris affords the vivisector a conscience but the closing lines concentrate on the power of sight and punctuates the reader's consciousness. The anonymity of Morris's vivisector is not an unusual feature. It is not only the vivisector that may "shudder" at the sight of the carved, poor brute, the lines also hold the power to haunt the reader and author.

Scientific journals sporadically published poetry reflecting upon the debate. In common with the writers of the anti-vivisection periodicals, these contributions were usually published anonymously. One month before the passing of the Cruelty to Animals Act, a nameless pen authored "Vivisection: A Satire" for The Edinburgh Review. Drawing on the

perceived gender imbalance of the movement, it opens with an address to "[o]ld women of both sexes" (1). The line derides women and emasculates men in five words and appears to be addressing the "snooping fanatics" (Bynum 170) that had earlier been categorised by de Cyon as "fools," "maniacs" and "pseudo-humanitarian" (498 - 500). From the outset, the satirist sets the tone and swiftly sets about dissecting the anti-vivisectionists' argument:

> They make a fuss 'bout so-called vivisections,
> And scatter frantic bosh in all directions.
> With arguments as weak as water-gruel,
> They try to prove that Doctors are all cruel,
> And take delight in giving needless pain
> To living animals-for purpose vain. (Emphasis in original 1-6)

The opening rhyming couplets set a swift pace that provides ground for a tight argument and closes off any space for interjecting voices. The science profession rarely counteracted the claims made by anti-vivisections through works of fiction and the satire does not suggest a conversation. The iambic metre bestows the lines with a textual pulse that would likely mimic the rhythmic heart-beat of the reader. A progression through the satire would likely enable the reader to detect their own portrait. The long stress placed on the "so-called" vivisections, mocks the legitimacy of the activists' grasp of scientific knowledge, insinuating that their intellect holds as much substance as their "water-gruel" argument. By referencing practitioners by their professional title of "Doctors" and not vivisectors, a title primarily used by the activists, the narrator reclaims scientific authority for his profession. Additionally, the title of "doctor" lends an air of domesticity and as the satire progresses, the argument moves from the laboratory to the dining room table at the centre of family life. The satire speaks with an independent voice, whereas the activists spoke as a collective,

diminished their sense of authority. Gillian Beer has noted that "[r]hyme has repeatedly been written about … as if it were a person, or two persons [and] not a pair of words" (180). Here, the application of rhyme through a progression of stanzas, permits the satirist to ventriloquize the anti-vivisection voice, impersonating Cobbe's pulling of the textual strings attached to de Cyon's images of vivisection:

> "What! Shall these ruffians bone our cats and dogs,
> To rip them up alive as they do frogs?
> Perish the thought! We'll go to Parliament,
> And get a Bill such horrors to prevent."
> Such is their cry; and sure enough a Bill
> They've got, which, if it pass, must do much ill.
> A heavy blow undoubtedly 'twill give
> To Science in Great Britain, we believe.
> Thus fettered – Physiology must die,
> Or to enlightenment and free countries fly,
> To seek that progress that is here disbarred
> By stringent laws, which Science disregard. (7-18)

Mirroring the nature of vivisection, rhyme is concerned with the parts that are hidden. The rhyming couplets of the satire appear to couple but resist the temptation to collapse into each other and sit close together across the tip of meaning. The second pairing word encroaches upon the boundary of its partner and becomes its progeny and in doing so, dismantles the activist argument line by line. The "dogs" and "frogs" cling together as word mutilations that are defined by sound, but are quickly forgotten due to the pace of the lines

and the satirist discards their existence as adeptly as the dismissal of the "old women of both sexes". In rousing spirit, the lines flex to mock the activists, but they are embedded in a familiarity because the argument is well-worn through earlier discussions. For this reason, there exists a timidity within the lines: the anti-vivisection movement is aware of its own argument and hardly needs its mantra fed back through poetic verse. However, it is not until the satiric glass is turned to face the bosom of domesticity, and family dining table, that the lines make for an uncomfortable read for the activist:

> He may before a Justice of the Peace
> Be hauled at once, for there obtain release,
> Until a penalty, if proved the case,
> Of fifty or a hundred pounds, he pays,
> 'With fair round belly, and good capon lined'-
> And would astonished be if you should say:
> 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. (19 - 31)

The rhyme words play on the "phonic grotesque" (182) and builds in argument, line by line, to make for an indigestible menu as the satirist adopts the vocabulary of the activists. In 1704, Jonathan Swift said in the preface to The Battle of the Books that "satire is a sort of

glass, wherein beholders do generally discover everybody's face but their own" (1) and at this stage, the activists would be likely to recognise mutations of their own argument staring out at them from the page. It would be fair to presume that the same charge could be levelled at science, and the satirist runs the risk of becoming metaphorically cut by their words. Anti-vivisectionists rarely employed satire in their writings, preferring a hybrid of pastoral and sensation. Rhyme, especially caustic rhythm, remains longer in the ear than the eye and consequently, holds the potential to present a stronger argument, and the argument that sits on the lines plays neatly to the indecisions between eye and ear, without having to offer any 'images of vivisection.'

The science profession charged the activists with being carnivore hypocrites and questioned their ethical reasons for hunting while campaigning for the rights of animals. The narrator suggests that both sides of the debate partake in the 'cruel knife' but presents the conundrum: will your enjoyment be justly matched when science saves your life using similar procedures. In 1874, Physiologist Michael Foster said in *MacMillan's Magazine* that there is more pain "in any one week … in [the] butchers' shambles in providing flesh to fill the mouths of the people of London" (368). Penned a couple of years after Foster's comment, the satirist suggests the reader to examine their own dining table:

> 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 that prime relish Pate 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. (32-61)

The satirist returns the activists' vocabulary that they employed within their own essays to digest from their dining table. The "quivering muscles," of animals "boiled alive," were phrases used to describe the perceived 'torture chambers' of science in Cobbe's essays, and those of her fellow campaigners. Science achieved what was beyond the activists: it adopted a multi-lingual voice and learnt the linguistic skills favoured of anti-vivisection rhetoric, but it still managed to maintain its professionalism. For a neutral reader of the verse, the satirist and the anti-vivisectionist are now appealing directly to the same readership and who would likely by this stage be questioning their own habits. By punctuating the lines with culinary terms specific to French cuisine, the satirist clearly defines its target as from the genteel classes. Working class dining tables were unlikely to enjoy *"Mayonnaise d'Homard"* (38) and "Pate de foie gras" (43). The "gourmands" (48) were likely those persons that engaged in domestic help and were unaccomplished in domestic chores. The membership lists of the anti-vivisection journals confirmed that their patrons were drawn from the upper middle class and aristocracy, confirming that the satirist penned the lines for a specific audience. There is no reference to the activist writers acknowledging the satire but Cobbe did confirm that she scoured scientific journals for material for her own essays, and it is implausible that the satire was published unnoticed.

CONCLUSION

On 1 June 1900, *The Zoophilist and Animal's Defender* quoted Professor Tyndall who said that "the poet of science" must "possess a certain pictorial power" (54). During the movement's foundation, "[p]ictorial power" was the strength behind the anti-vivisection campaign. It was a brave and clear-sighted decision by the editors of The Home Chronicler to publish the vivisection images. By manipulating editorial power of the image and permitting it to creep page by page through the periodical until the front cover was tantamount to the activist leading the vivisector out of the laboratory, step by step. From the shops that stuffed

their windows with reproductions of animal bodies strapped to replica vivisection benches to the life-sized hoardings pitched up in railway stations, the image of the vivisected animal became the loudest voice in the campaign. The negative side to using the images was that once they were released into the public domain, the activists had no control how these images were interpreted. The promotion of images of vivisection in The Home Chronicler was sporadic and the editors could have been aware that these images may have drawn unwanted attention from various other interests. There can be little doubt, that the use of a set of key images provided a recognised identity for the movement. The downside to such a campaign was one of morality: the activists effectively 'stole bodies' that belonged to others who had spent a life time incubating a professional body of work. Despite numerous charges, some of which proved accurate, it is clear that activist writers edited at a ruthless pace to construct a format that supported their argument. The anti-vivisection periodicals show that if the direction of debate altered, the image adapted its appearance accordingly.

The images and poetry were effective in underscoring an urgency attached to the 'making of a movement.' As it was common for contributors to hide behind a pseudonym, or to simply offer the author's initials, it has been impossible to trace independent author. The Old Brown Dog statue erected at Battersea to honour all the animals sacrificed to the vivisector's bench was merely an extension of the activists' use of image to cement the movement's identity. When reading the movement's history in this light, there can be little doubt that the images were an integral part of the debate. "Vivisection: A Satire" displays how the science professionals managed to outmanoeuvre their opponents through language. The activist periodicals revealed the varied individuals that contributed literature to the debate, but it is clear that most writers struggled to represent the vivisector in ways other than the stereotypical vainglory scientist and it is fair to suggest that to consider that the vivisector felt, at times, persecuted like the animals he experimented upon.

2: Writing Pain from the Vivisection Laboratory

With the likely exception of 'celebrated' physiologists such as Claude Bernard and James Paget, few activists involved in the late-Victorian vivisection debate had heard of vivisectors outside of their restricted circle. This knowledge changed with the publication of The Shambles of Science (1903) by two Swedish physiology students, Louisa Lind-af-Hageby and Leiza Schartau.[35] This chapter examines the figurative language used by the two women to communicate the pain involved in vivisection operations. The Shambles of Science proclaimed to closely resemble the lecture notes of the two women's medical studies undertaken over a two-month period in 1903 at University College London, one of the most prominent sites of vivisection in Britain at this time. As Hilda Kean notes, whilst the book cannot be compared in its influence to Anna Sewell's Black Beauty (1877), its publication was nevertheless a key moment in the anti-vivisection campaign (142). The Shambles of Science is often relegated to the footnotes of scholarship but this thesis secures its place within the debate by examining how the text interjected the woman's voice into the field of professional science. At the time, women were writing on a variety of scientific subjects, including vivisection, but their writings were dismissed by science professionals based on their lack of formal scientific education. The Shambles of Science was the first publication by anti-vivisectionist writers based on scientific experience gained from within the laboratory that was easily accessible for a general audience. The text also provided a platform for the marginalised feminine voice in what was perceived at the time as the predominately masculine field of science.

[35] Although Leiza Schartau shared editorship of *The Shambles of Science,* she played a reduced part in the anti-vivisection debate.

From the outset, Lind-af-Hageby and Schartau stated that they wished to speak as doctors and address the science profession directly, but in striving to find a literary representation for pain the authors relied on the possibilities of language itself – their writing owes much of its literary force to the influence of sensation and gothic tropes. The moral fibre of the vivisector was a topic that captured the imagination of the writers of the anti-vivisection movement and activist fiction often placed professional ambition at odds with the nurturing role of motherhood. The second part of this chapter considers the argument taken up by the fiction of the debate that the special moral insights of women should direct science and the consequences of its exclusion. In doing so, this chapter will explore how vivisection rhetoric fed into fiction with an analysis of G. Colmore's Priests of Progress (1908) alongside Leonard Graham's novella The P*rofessor's Wife* (1881).

In the preface to the first edition, Lind-af-Hageby and Schartau state the object of the publication of The Shambles of Science was "twofold: first, to investigate the modus operandi of experiments on animals" and secondly, it was "to study deeply the principles and theories which underlie modern physiology" (vii). From the outset, the authors make it clear that the publication was to be an independent study. The two women clarify that their studies were undertaken to "find out the truth practically" (ix) and that these investigations were "carried out independently of any society" (xi). Lind-af-Hageby and Schartau were adamant that The Shambles of Science was not an attack on the science profession per se, and the location and dates of the operations were specified only in the first edition. Subsequent publications replaced these details with quotes from both the literary canon and contemporary writers, some of whom were renowned supporters of the anti-vivisection movement at the time.[36] Whilst the names of the scientific practitioners were withheld from all editions to

[36] Epigraphs in order of appearance in the 5th edition: Sir Edwin Arnold. *The Light of Asia* (1879); William Shakespeare, *Cymbeline,* (1623) Act I, vi; Robert Browning, *Tray* (1879)*;* Victor Hugo "Speech to a Deputation" (1884); Cardinal Manning, Speech (1884); Ruskin, Vivisection Speech at Oxford (1884); Voltaire "*Dictionnaire*

avoid being charged with any personal attack, the decision to replace the dates of when the operations took place did shift the tone of the publication. This information also provided an intimate insight into the laboratory and added realism to the narrative. No specific reason was given to remove the information. These details also held the potential to engage the reader in a real experience and to describe the experiment from different points of view. After their demise, the literary quotes appeared as a widespread need to seek general authority for the text, and weakened the authors' claim to 'speak as doctors.' Lind-af-Hageby and Schartau were not alone in removing identifiable information from such publications. To avoid "mak[ing] [the] controversy a personal one" (11), Aesculapius Scalpel adopted a similar tactic in *Dying Scientifically: A Key to" St Bernard's"* (1888). Like Dying Scientifically, the Shambles of Science attracted public attention and Shambles went through five publications in ten years. The first edition instigated a Court case and the chapter entitled 'Fun' became the victim of Government censorship. Lind-af-Hageby and Schartau were instructed to replace the chapter with a favourable account of the very trial that it instigated.[37] For this reason, this chapter will refer to the fifth and final edition of The Shambles of Science (1913), unless otherwise specified. To date, no record has been located of the intervening texts but the final edition carries the prefaces of the earlier texts, the chapter published to replace 'Fun', and bears witness to the complicated trajectory of the anti-vivisection movement, its ongoing relationship with the Press and the science profession over the period of a decade.

When the first edition of The Shambles of Science appeared in 1903, Lind-af-Hageby and Schartau clearly emphasised that they were scornful of the emotive outpourings written

Philosphique" English Translation. 22-30; Richard Wagner, "translated from a letter of vivisection to Ernst von Weber" (1883); Earl of Shaftesbury "Speech in the House of Lords" (1876); Ingersoll, from the *Chronicle of St George USA* (1891); Auguste Comte. *The Course in Positive Philosophy* (1842) Ch 40; Alexander Pope. *An Essay on Man.* Book III (1734); Alfred Lord Tennyson. *The Princess: A Medley* (1849); Professor Lawson Tait. Letter to "Medical Press and Circular" dated 10 May 1899.

[37] For details see Lansbury, chapter 1

by the earlier anti-vivisectionists. The two women wanted their readers to see what they saw and feel what they felt, but the publication did not include any images of vivisected animals. The decision to not use illustration could have arisen from the need to differentiate The Shambles of Science from the earlier activist writers such as Cobbe, but whatever the reasons, it does appear to have been a conscious decision. In the March-April 1912 edition of The Anti-Vivisection Review, Lind-af-Hageby challenged Dr Waller's suggestion that the two women imaginatively interpreted events in the chapter entitled "Painless Experiments." Lind-af-Hageby refuted this charge by revealing to Waller at the Royal Commission on Vivisection (1912) that "in my notebook I find a drawing made at the time of the cautery used" (142). In place of their notebook sketches, the two women employed a set of familiar interconnecting textual images that enabled them to blur the boundaries between fact and fiction and coerce their readers to step inside the laboratory, unlike earlier activist writers who had left their readers "shivering on the shore" (Bending 137). This strategy presented The Shambles of Science with the potential of reaching out to a diverse audience and its publicist Stephen Coleridge read selected passages of the text at public meetings in a deliberate attempt to court publicity.

The opening chapter of The Shambles of Science describes the scene unfolding in front of Lind-af-Hageby and Schartau during a physiology lecture. They note that the "modern physiologist":

> [a]rmed with scalpel, microscope, and test-tube … attacks the problems of life. He is sure that he will succeed in wrenching the jealously-guarded secrets of the vital laws from the bosom of Nature. (3)

The textual image imaginatively fuses the laboratory from Mary Shelley's Frankenstein (1818) with the action taking place in the real-life medical theatre of University College

London almost a century later. The portrait of the "modern physiologist" armed and eager to engage in battle with Nature, echoes Frankenstein's quest to "penetrate into the recesses of nature and shew how she works in her hiding places" (Shelley 30). The use of hyperbole provides the chapter with an opening narrative hook seducing the reader to explore further what they feel is an already familiar scientific territory. There is also the possibility that readers could have drawn parallels with Richard Brinsley Peak's popular romantic drama entitled The Fate of Frankenstein (1823) that closely followed the plot of Shelley's novel[38]. Although, Lind-af-Hageby and Schartau wished to distance themselves from the earlier activists, they appeared to have few misgivings about subjectively introducing familiar texts to their readers. These instances may have prevented their audience from abandoning what could have been perceived as a comprehensive scientific text, and for the authors to present a morality agenda disguised within the pages of recognisable literature. By casting the vivisector as an agent of warfare against Nature, with a capital 'N', Lind-af-Hageby and Schartau enter the battle themselves 'with a pen in one hand and a sword in the other.'

The casting of the vivisector in opposition to Nature was a comfortable trope employed throughout The Shambles of Science. By drawing attention to the "scalpels, scissors, forceps, pincers, knives [and] hooks" (45), Lind-af-Hageby and Schartau thread a collective of scientific utensils, known as the "vivisector's tools" (46), through the reader's mind like a string of morality beads to resurrect the historic image of Cobbe's earlier essay "Light in Dark Places", where she envisioned the science profession as an "army" equipped with "pincers … scalpels, … saws and knives" (7). The Shambles of Science stretches the warfare analogy further by injecting into the imaginative landscape scores of individuals who produced numerous "knives … operation-holders … and finer electrical batteries" (4) to

[38] For information on Brinsley Peak and *The Fate of Frankenstein*, see Frayling, Chapter 4, 111.

secure a "victory" against Nature (4). As Joanna Bourke has suggested [f[igurative languages are indispensable when we seek to communicate unpleasant sensations to ourselves and others" (53) and Lind-af-Hageby and Schartau undertook numerous metaphoric appeals to the sympathetic nervous systems of their readers, especially in recollecting aspects of earlier texts. The difference between Frankenstein's laboratory and the passage from The Shambles of Science is that the former reanimated cadavers, while the later engaged in the cutting and wounding of live beings. As Vernon Lee calculated precisely in 1882, if the physiologist only has the corpse, he has the living thing without its life, the sentient being without its sensation, the organism with its functions stopped, the vast organic laboratory with its chemistry suspended. (780) Therefore, in order for scientists to discover how the living body functioned, they had to repeat painful operations on living creatures to uncover the principles governing thinking, seeing and feeling. Lind-af-Hageby and Schartau adopt the same visual pattern throughout the Shambles of Science. Although the operations varied somewhat in purpose, the authors constructed a palimpsest of textual images that were continually thrust into the reader's consciousness to instigate identical sensory images of pain.

The anti-vivisectionists thought that constant exposure to pain would lead to the corruption of an individual's spirit strong enough to transform him, like Robert Louis Stevenson's Dr Jekyll into the heartless brute Mr Hyde. In 1878, Lewis Carroll wrote an essay on the topic, "Some Popular Fallacies about Vivisection", for the Fortnightly Review where he cautioned his readers that pain deliberately inflicted during vivisection operations may become the "parent of others equally brutalised"[39] (345). The anti-vivisectionists felt that successive generations of medical students who at first may have shuddered at such cruelty would go on to imitate their predecessors and develop hardened sensibilities with no

[39] Charles Luttwidge Dodgson used the pseudonym Lewis Carroll in his anti-vivisection publications.

sense of human morality.[40] The anti-vivisectionists thought that minors were especially vulnerable to the moral persuasion of their mentors, who often held the position of surrogate scientific father and in this role, were imbued with an immeasurable power. Anti-vivisection writers often indirectly incorporated Carroll's prophecy into their fictional plots, possibly to explore their understanding of science's corruption over human morality. Wilkie Collins, Leonard Graham, Florence Marryat and Myrtle Reed were authors who portrayed the vivisector as an individual who, in youth, was cast adrift from paternal moral guidance, and this issue is explored later in this thesis. Graham and Marryat also place a strong emphasis on presenting an emotionally bankrupt adult vivisector who assisted their father in the vivisection laboratory. In Vivisection and Medical Students (1912) Lind-af-Hageby supported Cobbe's earlier argument that vivisectors had fallen victim to Schadenfreude (Lansbury 419). Lind-af-Hageby quoted scientific examples, namely from The British Medical Journal, The Lancet and The Medical Times and Gazette to authenticate her claim that the Cruelty to Animals Act stipulated "repetitive demonstrations of known facts" (5) would morally "demoralise students" (3).

The Shambles of Science addresses this moral concern in the chapter entitled "A Grand Demonstration". Lind-af-Hageby and Schartau reference the laboratory assistant as a "boy" (145), insinuating that his youth may position him as dependent on others for moral guidance, but he is shown to be naturally "polite" in respecting the women's sex in standing aside and "letting them pass" through the laboratory entrance. Traditionally a door holds the transition from one place to another. It could be argued that the door of the vivisection theatre symbolically places the 'boy' on the cusp of his own moral maturity. Each time he passes through the door, he heads off to select a being to be delivered to the laboratory bench and

[40] See Cobbe. "Vivisection and its Two Faced Advocates" in *The Contemporary Review,* (1882) 610—625 for a detailed discussion on the 'hardened sensibilities' of the vivisector.

consequently embark upon a tortuous and lengthy ordeal until death. The biblical: "if you do not do well, sin is lurking at the door" (Gen 4:7) and "I am standing at the door knocking" (Rev 3:20) encapsulates the flexibility of freewill attached to the 'boy's' moral compass. There can be no doubt that he is aware of the suffering involved in the experiments, but it remains a matter of his conscience in condemning, and physically delivering, another being to brutalised pain. The laboratory door of The Shambles of Science serves as the induction point of pain in the text and in following the lead of his superiors, the boy becomes the child "of others equally brutalised" (345). When viewed in this light, Carroll's prophecy takes flesh and inhabits the text as a realistic proposition.

The issue of pain is ever present throughout The Shambles of Science and the importance of how Lind-af-Hageby and Schartau use literary tropes to "overcome the obstacles of pain speech" (Bourke 54) is evident throughout the two women's text. As a life force, the literary undercurrent of "pain speech" drives the tension and maintains reader interest but at times, the authors' accounts of animals struggling to free themselves from the laboratory bench, becomes immensely difficult to digest. Lind-af-Hageby and Schartau make numerous references to the transference of animals passing to and from the laboratory: threatening to leave the door ajar many times. When considering The Shambles of Science as an independent text, this approach would have sensationalised the lecture notes and pushed them toward a literary plot, but entry through the door was securely off limits to the reader and, for this reason, sensation often outstripped scientific representation. Secrecy was a major theme of gothic novels with texts situated in gloomy mysterious locations, incorporating castles with secret passages and trap doors. Gothic tropes are reworked by Lind-af-Hageby and Schartau to invite the reader to visit graveyards and meet clandestine doctors placed outside of the University College laboratory, but the trap doors and secret passages all lead to the vivisection bench. This literary tactic could have manipulated the reader's curiosity in

becoming seduced by the text and to imagine peering around laboratory door to visualise the 'victim' preparation rooms that the two authors never fully reveal. There is the possibility that as students, they may not have visited the 'waiting rooms' but, at times, the text never appears to honour what it has implied to the reader. By viewing the wounded body, the reader's own morality is compromised: the scene before them demands that they either support or condemn the actions of others. Consequently, it is the reader's ethical decision to keep turning the page to engage with the next experiment. The issue of pain involved in operations was always a central truth of the anti-vivisection argument and, at times, both sides of the debate were keen to alleviate the level of suffering experienced by animals. In describing the laboratory before an experiment is about to commence on a dog, Lind-af-Hageby and Schartau recall the atmosphere:

> There is a barking and howling, a groaning and snarling – a chorus of inarticulate voices which make the air vibrate with the music of the physiological laboratories. It is a strange music brought about by chords played upon by pain and terror. (19)

It is a vocal text with the flavour of a musical script. Lind-af-Hageby and Schartau rely on audible tactics to manipulate the tension of an impending operation. Strategically placed at regular intervals are key choral allusions that work in harmony tightening and relaxing the narrative. As James Kennaway has noted, "of all art forms, music has perhaps been the most closely associated with the nerves" (141). The 'music' of The Shambles of Science plays with the reader's emotions and works as a psychological weapon. Sounds motivate the messages within the laboratory 'music' and can subjectively manipulate an individual's sensibilities. As Kennaway further suggests, music can "undermine rational self–control and bring out latent desires" (154). As the "barking" gains momentum, these sounds could begin to appear to the reader as simple and catchy, like an easy to learn tune with

lyrical hooks. The reader becomes seduced by the sequence of the narrative and forgets that it is a reality: it is a gruesome, and painful, attack by science on a living body. The rhythmic, melodic and choral vibrations of the words 'barking', 'howling', 'groaning' and 'snarling' become in a macabre fashion, the most pleasing sound to the ear and push the text's potential to appeal to a varied and unfamiliar audience. The music could be understood as a form of sinister mind-control that may rob the listener of self-control.

By engaging with onomatopoeia at the opening of the passage, the reader instantly ignites with the emotional transference of pain emitted from the animal. This tactic ensured an identification of the wounded body with the reader of The Shambles of Science who would internally, and indiscriminately, start silently 'howling' along with the dog. Although it is not clear at the outset that the "chorus of inarticulate voices" are the medical students, the reader subconsciously becomes a member of the pack. Lind-af-Hageby and Schartau here sacrifice professional authenticity for a sensational as the reader is no more aware of any scientific utility of the procedure than when they began the text. The mission of the publication, to explore the human morality of science has, in this instance, been firmly relegated to the marginalia for the more effective tactic of stroking the senses.

Lind-af-Hageby and Schartau use these musical tropes to insinuate that the rhythmic beat of the audience's "clapping" adds to the anticipated expectation and momentum attached to events taking place at the laboratory bench. Cobbe wrote in The Education of Emotions (1888) that "it is enough for a small band of friends in an assembly to cheer and clap hands, to induce hundreds who had previously little interest in the work or person praised to join the hosannas" (224). Henry Sidgwick suggested a few years earlier than Cobbe that "[t]hrough sympathy people might catch the contagion of [another person's] complex sentiments, but this might result in gaining a 'purely pleasant excitement from the narrative of others'

suffering (579.) The Shambles of Science conflates the medical with the dramatic theatre and if the clapping increases, it rhythmically mimics, and conjoins with, the palpitating heartbeat of the victim, spectator and the reader. Whilst applauding a successful operation or event is a normal occurrence of the medical laboratory, the consistent clapping would coerce the reader's brain to adapt and redefine the occasion and the jocularity could possibly then appear normal. In turn, clapping is inclusive and it extends an invitation from the page for the reader to become a participant and view events from the privileged standpoint near the vivisector's bench.

The emotive language of the passage permits the reader to sub-consciously engage with the 'strange music' and inhabit the site of experimental science by proxy but at the same time, the text does not specify the exact nature of the operation, releasing the reader from any moral obligations. The opening long vowel pattern paints a picture of a dog pack, braying and suspiciously threatening. The influence here probably owes more to a late-Victorian revival in gothic literature than any medical lecture notes. The chapter is entitled "Fun" and the two women make fifteen references to 'jocularity' throughout their argument. "Laughter and applause" directly follow the failing procedure in which Lind-af-Hageby and Schartau state that "a cannula in the duct of the submaxillary gland" has been inserted and the "chorda tympani is stimulated" (22). By alternating between scientific technical jargon and emotive sensationalism, the narrative threatens to alienate both its fictional and scientific audience but the textual images all paint the same picture of ill–treatment. The vivisector is represented as an orchestrator of torture with the musical metaphor bringing to the fore the fears surrounding John Burdon-Sanderson's Handbook for the Physiological Laboratory (1875) that an individual who enjoys the musical hall would be likely to return home and vivisect for its entertainment value.

Demonstrations are reliant upon visual representation and Lind-af-Hageby and Schartau make the scene centre-stage and begin to construct a picture of the experiment, without specifying its direct purpose. Stretched on its back and fastened to an 'operational board' is a large dog prepared for a repetition of a demonstration, which had failed to produce the desired result the last time. (21) The dog is muzzled but struggles constantly throughout the operation and when 'stimulation' is applied, he begins to "work his shoulders like cut wings ... trying to tear off the strings to get loose" (20). Like the earlier anti-vivisection poetry of the periodicals, the narrative is keen to focus on the animal's distress and the text invites the reader to return and view the wounded body numerous times. This invitation poses a difficult question to the reader. If reader ceases to read further, then they could be accused of metaphorically leaving another being in distress but if the reader continues to revisit the site, they could morally be considered complicit in supporting the painful procedure. The actions of the distressed animal 'working its shoulders like cut wings' strongly suggest an apparent lack of pain-relief offered by the vivisector.[41] Wings are symbolic of flight and freedom and to damage the wing is to prevent flight without causing death. The dog's insinuated wings bring about its transcendence as an ethereal being, playing on the innocence of the laboratory victims, but it also shares in a major concern of women at the time. There are numerous allusions to psychological and physical restraint situated throughout the text and these could have subjectively tapped into the repression felt by women who were metaphorically 'caged like gilded birds' within a patriarchal society. In other words, Victorian women who experienced emotional repression may have identified their experience with the victims featured in the text. Birds were often kept as household pets, cooped up in cages that were often plush and expansive. Whether it was politics, sport or a mere desire to

[41] Anaesthesia was rarely used in operations as it paralysed the body and so an accurate reading of the sensory functioning could not be obtained. For a discussion of anaesthesia and its uses in physiology, see Hageby and Schartau p149-169. Also, see Bourke, 53

articulate opinions, women were not allowed to venture further than their own home, like the way a bird cannot fly far in a gilded cage. The authors do not address their women readers directly throughout the text, but Lind-af-Hageby's editorship of The Anti-Vivisection Review would likely have brought her into contact with a variety of issues prevalent to women. The majority of the contributors to the periodical were women, both at home and internationally. In turn, these women were aware of the 'horrors' of the vivisection laboratory and when reading in this repressed light, the image of the struggling dog attempting to cut free its shredded wings from the bench could quite easily be read as a wounded metaphor for a number of other gendered societal issues hovering beneath the vivisection text, namely those existing in the shadow of the Married Women's Property Act (1882), CDAs[42] along with the emergence of the Women's Social and Political Union (1903) by Emmeline Pankhurst. For this reason, The Shambles of Science may have appealed to women not naturally drawn to scientific interest. It was not always evident that the lecture notes are a real product of a scientific laboratory and the reports often presented as a review of sensationalist theatre. At times, especially the passages detailing emotive descriptions of animal experimentation, it is not clear which genre the text is representing. For this reason, there is always the possibility the reader could misinterpret scientific narrative as hysterical over-action. The uniqueness of The Shambles of Science is the frequency with which Lind-af-Hageby and Schartau place their readers in close proximity to vivisected animals. This is achieved by tactical choreographing of the non-human body throughout the text and by doing so, raises queries relating to the authors' moral persuasion. In attacking the vivisector's moral fibre by embroidering the wounds with sensation tropes suggests that the body became doubly wounded. The vivisector cuts the real-life body and in textually replicating these wounds, the body is doubly compromised: it is invaded and exhibited twice. Lind-af-Hageby and Schartau

[42] Contagious Diseases Acts 1864, 1866 and 1869)

devote parts of the text to simple explanatory procedures such as the history of anaesthesia but such accounts are held in a minority. The format primarily resembles small, concise chapters that echo the instalment publishing method of sensation literature. As each edition made an appearance, The Shambles of Science became a series of stories where the authors slotted accounts of trembling bodies and shivering sensibilities together with snippets of scientific jargon. As the reader's imagination moved across the chapters, the content presented the challenge of peering into the next opened body until the reader is "left with nerves as taut as the laboratory animal "(Straley 356).

Lind-af-Hageby and Schartau recognised that the operation on the dog that struggled with "cut wings" (20) was an infringement of the 1876 Cruelty to Animals Act that stated a vivisected animal is not to be revived after one experiment and used for another.[43] Although the identity of the vivisector of the chapter, "Fun" would have been unknown to the majority of the Shambles of Science's readers, Professor William Bayliss[44] was identifiable to those in the field from the date and location of the lecture notes printed in the first edition and, upon publication, sued the authors' publicist Stephen Coleridge for libel in order to protect his reputation.[45] As stated earlier, Lind- af-Hageby and Schartau were keen to emphasise in their initial preface that The Shambles of Science was not meant to be a personal attack, but purely an indictment against the system[46], but they lost the case. The Chief Justice ordered Lind-af-Hageby and Schartau to remove the chapter entitled "Fun" and replace it with a full account of the trial (Lansbury 10-12). The withdrawal of this chapter was viewed as a triumph for

[43] For a discussion on The Cruelty to Animals Act, See French, especially chapter 6 and Judith Hampson in Rupke, chapter 13.
[44] After the chapter fun became the topic of a trial, The Anti-Vivisection Review published court transcripts that identified additional practising physiologists previously anonymous in the Shambles of Science.
[45] The Rt. Hon Stephen Coleridge (1854-1936), great-grandson of the poet Samuel Taylor Coleridge (1772-1834) was an active member of the Victorian Street Society. See Lansbury for further information on Coleridge's involvement with the movement. 9-10.
[46] See also Fourth Preface of *The Shambles of Science* (xv – xxiii).

experimental science in maintaining professional authority. The censorship of 'Fun' was frequently referenced by pro-vivisectionists in their own periodicals as a triumph against activism. Lind-af-Hageby's editorship of The Anti-Vivisection Review did provide her with a second voice to counteract these claims. For example, pro-vivisectionist Stephen Paget[47] wrote extensively on the "recently impounded" (20) chapter in The Case Against Anti-Vivisection (1904) and the essay instigated considerable published correspondence. Lind-af-Hageby and Schartau subsequently embarked on a lengthy, bitter correspondence between Paget's lawyers and their own: an account of which they published in The Anti-Vivisection Review (319). The two women demanded that Paget withdrew what they considered a defamatory comment on their publication. Paget refused to comply but was a distinguished member of the Research Defence Society, which later became the prime target for cartoons throughout further editions of The Anti-Vivisection Review.

The Shambles of Science does not directly address the threat of human vivisection but, at times, the authors textually wrap the content in a maternal shroud[48] that may have subconsciously appealed to their women readers. An instance of this tactic is where the two women cast the vivisector in the role of a Herod figure and describe the actions of a vivisected frog in infantile terms.[49] Unlike the objective nature typical of scientific writing, they address the reader directly and enquire whether they have noticed the actions of the frog[50]. Lind-af-Hageby and Schartau highlight how "quaint" and "pathetic" the frog's face looks whilst its "childlike little hands" vainly attempt to push the scalpel away from its limbs.

[47] Stephen Paget (1855 1926): Hon Secretary of the Research Defence Society (1910)
[48] In August 1910, *The Anti-Vivisection Review* carried a cartoon of a female student in the laboratory "In the Laboratory – Advanced student: You silly girl to cry over a cat; I did when I first came, but I don't care a bit now." (30). The caption stated that four women "worked" as licensed vivisectors during 1909. One performed 174 experiments without anaesthetics, and another 148. One woman performed 24 experiments under Certificate B, which allows the operator to keep the animal alive after the first vivisection.
[49] See parallel Biblical passage on King Herod and the Massacre of the Innocents in Matthew: 2:16-18.
[50] Claude Bernard dubbed the frog "the Job of Physiology" (White 62)

It is fair to speculate that a considerable number of *Shamble of Science's* readers would not have any first-hand scientific experience and for this reason, they would have been likely to interpret the passage imaginatively. The frog loses the battle as the scalpel proves stronger than the flesh and the frog's limbs are systematically amputated. Finally, it is decapitated but the remaining "little bleeding piece of frog" still twitches[51]. Given that the ostensible purpose of The Shambles of Science was to educate their readers in the 'reality' of vivisection, for the scientific novice, the reading would likely have done little to improve their understanding of scientific investigation and the workings of the laboratory. Although in a minority, Lind-af-Hageby and Schartau were two women working within a male dominated profession but there is evidence that 'lady vivisectors' existed. As Elston has suggested "[i]f vivisecting indicated depravity in a man, in a woman it would be even more horrendous" (281). Women did support the actions of their mentor at the Bayliss trial and in doing so, challenged the integrity of Lind-af-Hageby and Schartau. At the time, there were many fears about the changing place of women that were expressed by both women and men alike. In 1878, The Animal World[52] expressed a concern that once aroused, women would be far crueller than men" (91-3) in the ways of science. Women were observed performing vivisection operations in Cambridge in 1891. Cobbe warned that:

> "[t]here are dangers all round us. The entrance [of women] into the medical profession is a danger. It 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 no signs of such ignominy." (Duties of Women 24 emphasis in original)

[51] For a discussion of the use of frogs in vivisection, see Charlotte Sleigh, *Frog,* London: Reaktion Books, 2012, Chapter 4.
[52] See, *Animal World* (1878) 127, 141-2 and (1898) 19-20.

The omission of pain relief was a topic that was always central to the anti-vivisection argument and both sides of the debate were keen to alleviate the level of suffering experienced by animals. Physiologist Henry Bigelow wrote in the Anti-Vivisection Review to suggest that it should not … be supposed that cultivation of the intellect leads a man to shrink from inflicting pain" and he went on to state that:

> "many educated men are no more humane, are in fact far less so, than many comparatively uneducated people … the more eminent the vivisectionist, the more indifferent he usually is to inflicting pain … however, cultivated his intellect, he is sometimes absolutely indifferent to it." (432)

In 1874 in English Men of Science (1874), Francis Galton advocated the rise of an "establishment of a sort of scientific priesthood throughout the kingdom, whose high duties would have reference to the health and well being of the nation" (260). Lind-a-Hageby and Schartau describe the laboratory that owes much to Galton's observance:

> The lecturer, attired in the bloodstained surplice of the priest of vivisection had tucked up his sleeves and is now comfortably smoking his pipe, whilst with hands coloured crimson he arranges the electrical circuit for the stimulation that will follow. (20)

By this stage in the text, Lind-af-Hageby and Schartau have constructed their vivisector as an individual of many guises. He is the progeny of Frankenstein, musical conductor, predator and priest. All of these roles metaphorically permit Lind-af-Hageby and Schartau to invite him in and out of the text when appropriate. The "priest of vivisection" contains heavy connotations of Catholicism and the Inquisition and appears an oxymoronic profession. Recognised as God's representative on earth, the priest was considered by most of society as a warrior against sin, but the Shambles of Science draws him as a common

slaughter man, unconcerned with the implications of his work. The word 'shambles' can be used to describe chaos or disarray but it is also representational as a place of slaughter. Shambles can also be used as a slang term, meaning: a 'dog's dinner'.[53] The shambolic procedure was undertaken in the chapter entitled 'Fun' deals with a study of "psychic secretion" (25). During the operation, the oesophagus has been cut and a fistula established so that the food eaten falls down on the floor instead of passing into the stomach. As the dogs eat, they were surprised to see the food fall out. The dog's dinner literally falls on the floor of the laboratory in this book. Employed as a subtle metaphor, the word 'shambles' initially appears simply to address the chaotic nature of science's arch to the future but it also silently sits on every page likely aligning the reader's consciousness with images of their own pet.

The cult of the Victorian pet provided Hageby and Schartau with an audience already sensitive to the needs of animals.[54]In the chapter entitled "Scarcely any Anaesthetic", a "white fox terrier"[55] is tied down to the operation table and the usual muzzle has been put in place for the preparation of a demonstration. The terrier is bleeding profusely from a wound in the head because of a hole bored through the skull (37). Lind-af-Hageby and Schartau inform the reader that, "a cannula, attached to a mercury manometer, has been inserted into the carotid in an operation to study the dog's brain (38). They mention that only morphia has been applied to offset the pain. The dog is in distress but Lind-af-Hageby and Schartau offer a short scientific narrative adding to the tension and, again, the scientific jargon being likely to confuse any new scientific recruits. The unexpected happens and a new stimulation is noticed which produces laughter from the "spectators" (40). Immediately after the announcement, Lind-af-Hageby and Schartau observe that the "fine little terrier" had a "clean, thick, glossy coat, as white and trimmed as if it had had a bath and a good brushing

[53] See Oxford Thesaurus of English. p786.
[54] See LI. 'Mobilising Literature in the Animal Defence Movement in Britain, 1870-1918: 46 and White, 59.

this morning" (39). They personalise the dog by noting that it had "brown and black spots on the muzzle and ears" and it is likely that many a pet owner would have closely read this description and have glanced at their own pet. (40) As Kean has stated, although the act of vivisection was hidden from the public eye, the very animals upon which such cruelty was perpetrated were the same animals seen elsewhere, in the homes of the poor and rich alike (98). There was always an emphasis on visual communication – viewers identified not with the animals themselves but with their placement in a familiar context.

Terriers were the breed of choice used in vivisection fiction as the companion pets of vivisectors' wives. These popular pets were often depicted as the confidant of the wife or more commonly, the substitute child of the marriage but nearly always fell prey to the vivisector's bench when the marital relationship deteriorated. This intimate connection between women and their pets taps into the anguish which Lind-af-Hageby and Schartau record with the scenes before them. Just before the two women take their leave from the laboratory, the terrier, in "utmost agony" opens and shuts his "clear brown eye several times, with an expression they never forgot" (42). If the readers of the Shambles of Science were inexperienced medically and struggled to form judgements on whether the experiments contributed to humanity's benefit, the image of the mangled terrier would have brought the vivisector from the professional sphere into the bosom of domesticity. The anti-vivisection writers' preference to cast pets as surrogate children or companions secured the attention from an already benevolent readership.[56] Earlier activist writers of the 1870s and 1880s had been accused of "dishonesty of interpretation" and "favourable editing" (de Cyon 499) in editing scientific texts to fit the cause. Although Lind-af-Hageby and Schartau state in their preface that they wish to "speak as doctors" (Lansbury 9), they adopt a similar literary tactic.

[56] See Marryat, *An Angel of Pity* for a sample text of animals as surrogate family members, especially the pet dogs, Bran and Bee.

They add information to an independent text that would not have been present in their lecture notes. Describing a demonstration in the chapter entitled "A Dog Injected with the Substance Derived from a Lunatic", the authors take leave of the text and transfer the narrative to a French graveyard. (70) They inform their readers that the dog strapped to the operating table at University College "reminds them of another dog that we have seen somewhere long ago":

> As we stand beside the body of the dead dog, a scene from the past arises in our memory. It was an old cemetery in France on a bright, sunny autumn day ... There was nothing in the place to attract particular attention ... We were just leaving the church yard when a grave that seemed to be rather new aroused our interest. In the soil there were ... traces of small paws ... and in the middle of the mound ... we found the body of a small grey-black dog which was dead. His wavy coat had such a peculiar silky appearance ... The little loving dog had gone to find his human friend. (70)

The reader is likely to make the connection between the British pet fastened to the operation board and the French dog lying with his owner. Both images conjure up martyred connotations of self-sacrifice, a common theme of anti-vivisection propaganda. It was essential that Hageby and Schartau embraced a writing style that spoke to a diverse audience to differentiate their text from the earlier emotive writings of the movement. As further editions of the Shambles of Science appeared, the original format changed from a set of lecture notes to a resemblance of a collection of short stories. By the time the fifth and final edition appeared, each chapter was now prefaced with a quote by a leading literary figure and this tactic enabled The Shambles of Science to embed its own voice within a wider cannon of work. What differentiated the text from other anti-vivisection accounts was the relationship its authors held within the wider publication framework.

THE ANTI-VIVISECTION REVIEW: A JOURNAL OF CONSTRUCTIVE ANTI-VIVISECTION

The Shambles of Science was not the sole outlet for the two women's campaign against the prevention of vivisection practice. During the period 1909 – 1919, Lind-af-Hageby held the editorial post at The Anti-Vivisection Review and at the same time, was the Hon General Secretary of The Animal Defence and Anti-Vivisection Society (formerly The Anti-Vivisection Council). In 1909, the periodical's mission statement declared that it would focus on the "abolition of vivisection" and would "devote the ink in our pen, the love in our heart, and whatever thoughts we may possess" (5) to achieve this aim. Lind-af-Hageby upheld this proclamation by becoming a proficient public speaker and gave weekly lectures for the Society. The Anti-Vivisection Review provided Lind-af-Hageby with a self-controlled textual space where she could confront science on her own terms, although this did not prevent her from acerbic responses published in other journals. In 1907, Drs Waller and Pembrey, both licensed vivisectors, gave a "vehement attack" (354) on the first edition of The Shambles of Science as evidence to the Royal Commission on Vivisection. The Anti-Vivisection Review published a lengthy account of the report and an embittered exchange of correspondence ensued that was instigated by Waller's insinuation that there were numerous inaccuracies in The Shambles of Science. As with Cobbe's indictment over the editorship of The Nine Circles, science writers attacked the activists repetitively through charges of inaccuracy. At times, these claims held substance but this line of attack reveals more about how the science profession viewed the intellectualism of its opponents, rather than entering any rational debate. Lind-af-Hageby refuted the claim by Waller and Pembrey by confirming in The Anti-Vivisection Review that "the notes [upon] which the "Shambles of Science" were based were "taken at the time of seeing the experiments", whereas Dr Waller's notes were historic and constructed from memory "according to his own evidence", and "were not made until some months had passed" (143). This bold stance adopted by Lind-af-Hageby exhibited the

unshakeable belief that the two women held in themselves as authors of scientific literature, regardless of the literary tropes they adopted, and this approach would likely have instilled a confidence in their readers. As stated in the preface of the first edition, the authors were adamant that the intention of Shambles was to expose the inner workings of the vivisection laboratory, but at no point do they adopt the role of undercover reporters or appear deceitful. Lind-af-Hageby's verification to Waller and Pembrey assisted in securing and promoting, The Anti-Vivisection Review as a haven for all to discuss matters concerning experimental science, but the periodical did not habitually cover the amateur topics of geology and biography on a prolific basis. In offering a sanctuary to discuss matters of science for a sympathetic audience, The Anti-Vivisection Review held a vital role in the movement because it could police its own editorial boundaries. The chapter entitled 'Fun' was censored by a predominately male judicial community. Through editing the periodical Lind-af-Hageby created a secure, self-directional space to keep the voice of 'Fun' active through the pages of an alternative text. Keeping within Government legislation, The Anti-Vivisection Review did not reproduce any extracts from 'Fun', but with constant allusions, the authors were able to nurture its existence and challenge science from a safe distance.

WOMEN'S IDENTIFICATION WITH THE VIVISECTED ANIMAL

The chapter 'Fun' attracted a considerable amount of notoriety through press coverage and it is fair to presume that women who would not have naturally been drawn to the debate, could have become inquisitive. Coleridge was a strategic promoter of the text and read selected passages at seminars that likely held a high female membership, namely amateur gatherings of more amateur interests such as botany and geology. Many late-Victorian women recognised their own repressed condition in the image of the vivisected animal bound and gagged on the laboratory bench, and this topic has received considerable coverage by Coral Lansbury and Greta Depledge. Late-Victorian women felt that operations on live animals

were simply an extension of experiments taking place on working class women and the mentally-ill patients on charity wards. Hypnotic subjects, asylum patients, and other sufferers of nervous disease became in effect experimental animals, losing their will (or their soul), so that medical science underpinned by experimental physiology and its laboratory-based technologies, could restore it (White 99). The process of identification of Victorian women and animals can be observed in three major areas: gynaecology, pornography and literature (Lansbury 415) but women often supported the anti-vivisection movement when they showed little interest in other areas of social reform.[57] This is not to say that late-Victorian women identified with the animals themselves but more with their placement in a familiar symbolic context. Although Lind-af-Hageby and Schartau focus on experimentation upon animals, their portrait of the 'modern physiologist' is studded with word clusters alluding to female rape, casting the vivisector as a predator. Cobbe's gendered argument in The Moral Aspects of Vivisection (1884) fleshed out the implied connections she drew between scientific and medical abuse perpetrated by men on both women and animals. Moral Aspects also affirmed Cobbe's distaste for scientific materialism and its effect on animals and women: discursively, that is, vivisection was closely related to sexual predation. An embedded discourse about rape-like procedures in hospitals connects to unrestrained male sexuality. She targeted "bourgeois men in both cases: scientists and middle-class drunks" (Ferguson 116).

In 1889, Cobbe referred to the vivisectors as a gang of "Jack the Rippers" in her address to the Annual Meeting of the Victoria Street Society. (3) Lind-af-Hageby and Schartau were writing at a time when Jack the Ripper murders would have figured in the imagination of their readers, especially as speculation grew that 'Jack' was a doctor with a penchant for vivisection.[58] 'Jack' reportedly removed the uterus of Annie Chapman in 1888 and reader

[57] Coleman notes in *Priests of Progress* (1908) that "many women take up the cause just to get noticed" (305).
[58] For further information on the assumption that 'Jack the Ripper' murders (1888) were performed by a vivisecting doctor see, Milburn 125-158 and Elston in Rupke 281.

recognition could be manipulated in tracing a link between the Ripper murders, gynaecological experimentation and operations taking place in the vivisection laboratory, although this is not to confirm that The Shambles of Science was suggesting that vivisectionists were considering replacing non-human with human participants. English doctor Anna Kingsford noted that operations on working-class patients were commonly performed without any form of anaesthetic and judged that paupers are thus classed with animals as fitting subjects for successive painful experiments. Since no moral regard appears to be shown for the feelings of either, it is not surprising that the use of anaesthetics for the benefit of the patient was wholly rejected. Even the excruciating operation of cautery with a red-hot iron was performed without the alleviation of an anaesthetic. The close link between human and non-human experimentation became evident to French doctor Maxence Van der Meersch during a visit to a Paris hospital in 1910, where he observed:

> a poor woman, dangling upside down with her thin hair thrown back, her face seen from above in a tragic foreshortening: that woman disembowelled like an animal hanging on a hook in a butchers ... whilst Géraudin the physician bent over her tearing out the ovaries and sponging blood from the bottom of the pelvic cavity, as though from a bucket of flesh lined with muscles. (Quoted in Lansbury 90)

The "tearing out of the ovaries" clearly resonates with the removal of Chapman's uterus by 'the Ripper' almost two decades earlier, testifying to the existing interest in the debate over two decades later. Both Van der Meersch's account and The Shambles of Science were published after the Ripper murders, but the readers of The Shambles of Science would likely have become immersed in the mythology hatching around the 'Ripper' crimes. By this time, the reportage of the Ripper' murders that revealed that 'Jack' had removed body parts

specific to women would have been released to the public. The operations that women considered invasive challenged the core moral expertise of scientific investigation because these women appeared to be afforded the same moral recognition as the animals of the 'torture troughs'. The shape-shifting characteristics between human and non-human bodies illuminated a major concern for activists: that those who bring themselves to cut up a living dog will inevitably move on to murdering humans, or, at least experiment with them whilst they are still alive.

The dread that vivisection would cross the non-human to human divide is explored in G Colmore's novel Priests of Progress (1908). Colmore showcases invasive medical experimentation undertaken on two women, who are socially diametrically opposed but each is left with life-changing physical and psychological scarring. Colmore is keen to emphasise that the operations were motivated by ambitious and professional greed with a moral disregard of their patients' wellbeing. The first operation concerns Sarah Jennings, a working-class widow admitted to St Anne's "orspital" (40) for an operation to address "the ulceration of the skin" (41), but instead she unknowingly undergoes "the removal of the superior maxilla": a procedure normally only required for the "disease of the bone" (43). Although never disclosed to Sarah, the narrator explains that the operation was solely performed to uncover fresh medical knowledge in relation to cancer, but its outcome left Sarah with facial scars so severe that she was reduced to the life of a beggar and unable to secure employment.

On entering the laboratory, a young medic, Sidney Gale observed that Sarah appeared "pale ... quiver[ing] [and] feebl[e]" (42) and "half daft with fright" (43). Replicating the behaviour of the non-human laboratory specimens who were often noted for compassionately licking the hand of the vivisector, Sarah "behaved with resigned passivity" and sought

reassurance from Gale with her "searching eyes" (42). Even though chloroform was used during the operation, it appeared insufficient as a pain suppressant. Sarah "twisted and wriggled under the surgeon's hands" (44), much like the dog from The Shambles of Science trying to cut free of its wings, and it is at this stage that Gale's medical integrity is challenged. While observing Sarah's distress, he questioned if earlier accounts of vivisected animals could accurately be "referred to reflex action" (44). A short time after the operation, Gale discovered Sarah living as a street beggar and although she was not embittered, it became was apparent that her circumstances were a product of the operation witnessed by Gale. Sarah reprimanded Gale for not revealing "the truth" (94) about the risk attached to the operation, but her stoicism implied that she could have accepted "the truth" from the outset. The insistence that surgeons and physicians were sympathetic men was crucial to the identity of late-Victorian scientists. As Joanna Bourke has identified, sympathy was "intrinsic to their identity" as men who were "humane and capable of emotions of irresistible compassion for suffering humanity" (240). Through Sarah's treatment both before, during and after her operation, Colmore illuminates the cost the working classes were potentially willing to pay at the hands of those more educated, in which they habitually placed their trust.

Sarah was initially advised to undergo the operation by a "visiting lady" to her street who had ridiculed her hesitancy in progressing with the treatment. She coerced Sarah into undergoing the operation, stating that her personal contribution would be "beneficial" to all the "philanthropic institutions of the country" (40). As Sarah cautiously waited for the operation to commence, she recalled the unnamed woman's words but resented how the "blessedness of wealth" (42) permitted such women the privilege to lie in their own room with only the nurse and friends in attendance. By juxtaposing medical opportunity available to these two different women, Colmore makes a strong case for the unbalanced medical choices embedded in class distinction in that the wealthy pay for medical assistance in

money, while the "poor had to pay" (41) with their bodies, aligning this class with the non-human class. Sarah's comment further exemplifies how scientific moral authority could be easily compromised for access to the 'working-class' body. Colmore is unique in portraying pain beyond the boundaries of the wounded non-human body[59]. It was usual for fictional wives of vivisectors carry psychological scars resulting from the practice that has infected their husbands' ethical mind-set, but Sarah visibly displays her documentation of science to be 'read on her face' throughout life. Colmore's literary account becomes a literal off-product for the devastating consequences attached to the practice when fuelled by unchecked ambition. In 1909, The Anti-Vivisection Review carried a first-hand account by the medical student, Josephine Howland, and her experiences within an unspecified vivisection laboratory whereby she draws distinct parallels between the working-class woman and the experimental animal. Howland confided that "it was hard work … to get used to the sufferings" and remonstrated "[i]s it any wonder that the poor, defenceless woman is carried into the clinic hall against her wish, begging that she be not operated on?" (95) Sarah complied with the operation, but the true cost to her health was never addressed by the science profession or the unnamed philanthropist who encouraged other women to offer their bodies for inspection.

Sarah's colloquial narrative underscores her working-class heritage which sets her apart from the women who were listed in the members' directory of the anti-vivisection periodicals. Activist novels frequently confined the vivisection action within an upper-middle class domestic setting, and if the wife detected her husband's laboratory, she often left the marriage to embark upon an independent life. This drew other gendered issues into the plot, such as the Matrimonial Causes Act (1857) and the Married Women's Property Act (1882), but Sarah's vocabulary ensures that she is a member of a class that is excluded from the

[59] See Kenealy's short story "A Human Vivisection"

choice afforded to her sisters from a more affluent class. Using Sarah's vocabulary, Colmore emphasised a stark reality, and vulnerability, of the working-class. By "being kep' so long in the 'orspital", Sarah lost her job and informed the remorseful Gale that "[w]hen there's a dozen after one job it's not a face like [hers] as gets picked out to take it on" (95). Despite Sarah's ability to perform the task adequately, it is aesthetic qualities that render her invisible. Colmore is unique in presenting vivisection with a bildungsroman plot and with Sarah, education, character, and identity all manifest in teaching its upper and middle-class readers the blatant realities attached to the realism of working-class through the metaphor of vivisection. Sarah's youngest child did not recognise her when she returned from the hospital and "screamed orful" (96) at the sight of her disfigured face. By dissecting Sarah's speech, Colmore underscores her social insignificance within the moral compass of operating science. Her birth-right to a personal dignity becomes as easily discarded as her lost facial parts.

The appendix of Priests of Progress offers a confirmation as to the scientific legitimacy of Colmore's writing of Sarah's experience. It states that "[t]he author was informed of it by a doctor whose friend, a surgeon, witnessed it" (381). The statement is heavily weakened by the absence of named sources, locations or scientific utility and like the first edition of The Shambles of Science, it would have been sufficient to merely infer the scantest of credible information to secure the clause's authority. For this reason, Sarah's operational passage situates itself within the literary spectrum as its scientific utility is presented as an emotive, sensationalist account of what someone else may have witnessed by another party and consequently, passed in conversation with the author. The statement undermines itself as a titbit of 'gossip.' In the absence of any credible sources in the plot, Gale acts as the moral compass of science, primarily through his dealings with Sarah. Up until the day of the operation, he had revered the 'celebrated' surgeon, Morton Shand, who

had “flocks of admiring students” falling “in his wake”. (64-5) but Shand’s reputation was sacrificed in the eyes of Gale, through the exposure of his unchecked ambition.

The plot of the Priests of Progress focuses on the relationship between experimental science and women. Other than one account through a self-diagnosis, there are no accounts of operations performed on a male body, even the laboratory animals are nursing mothers. The central thread of the novel follows David (Violet) Lowther’s progression from girl to widowhood. Violet was bestowed the epithet ‘David’ due to her performing childhood heroic feats and it could be read that this masculine connotation provided Colmore with the integrity to present a woman who supported vivisection as a progressive practice. ‘David’ was the only child of the renowned physiologist Bernard Lowther, a character that draws strong parallels with the real life French physiologist Claude Bernard.[60] Lowther was emotionally bankrupt and morally inept, and he coerced his only daughter into a marriage to the successful physician, Sampson Cranley-Chance, on the understanding that Cranley-Chance “would add laurels to the crown of his reputation” (109). David’s mother Bertha was bitterly opposed to the union fearing her daughter would develop the psychological scars she had carried through life from living with a vivisector. The marriage produced two children but they both die from unspecified illnesses and after Cranley-Chance is bitten by a rabid dog, he too loses his life from placing his faith in an experimental scientific method that fails.

Priests of Progress draws together a rich fabric of women’s voices that speak from all sectors of the vivisection debate, but these voices change in tone as the plot progresses. It is not until ‘David’ unwittingly witnessed an operation upon a pregnant bitch by her husband, that she immediately changed her faith in vivisection. At the time, her young daughter Vi was

[60] Claude Bernard’s wife, Marie-Francoise found herself providing “unwitting financial support” for her husband’s vivisection practice via “her dowry and comfortable annual income” (Rudacille 19).

terminally ill and she died shortly after ‘David’ rejected vivisection. Cranley-Chance was in favour of performing an untried, experimental method upon his daughter but ‘David’ successfully resisted this route, but upon Vi’s death, Colmore subtly illuminates the strong maternal bond between mother and child. Vi’s name was a derivative of her mother’s birth name, Violet, but it also inhabited her nickname, David. Colmore here shows how little Vi lives on through death, even though the ‘all-seeing’ parental bond is now invisible. By employing a touching sensitivity that does not appear to sit well within a vivisection plot, Colmore shows that although ‘David’ had physically lost a part of herself with the death of her daughter, Vi, does, in fact, live on in the very name of her mother. Vi’s name is also repeated twice within the word ‘vivisection’. Although the child’s name continued to thrive in both names of her mother, it was an impending vivisection procedure that shadowed her short life. By inhabiting the word twice, ‘Vi’ emphasises how experimental science was trying to invade her body through her father and was repelled the actions by her mother at the same time.

The offspring of the pregnant bitch all died during the operation: they were physically removed from her body by Cranley-Chance as unwanted product of the operation. It is at this point, while remaining hidden, that ‘David’ viewed her husband in his true light. She had visited his place of work to surprise him with an impromptu visit to discuss the medical issues relating to their young daughter. Upon hearing footsteps, ‘David’ hid in a cupboard with slatted doors and it is these shards of light that penetrate her husband’s veneer of moral respectability. ‘David’ understands the true nature, and moral cost, of vivisection. Until this date, she had only a textbook understanding of the profession. This is the very charge levied at anti-vivisection writers by the science profession but Colmore turns the argument around to show that it is the physicality of the pain involved to the animal in vivisection that swelled the ranks of the activist movement.

There are strong ethical parallels to be noted between the operation on Sarah Jennings, and the mutilation of the heavily pregnant bitch. Both operations interrupted the course of nurturing between mother and child at the hands of male practitioners. Sarah's bond with her child became vulnerable at the expense of her disfigurement but the scalpel extinguished life for the bitch and her potential offspring. In The Nine Circles, the chapter entitled "Moral Experiments on Animals" opens with an account of Dr Brachet's research on "testing a dog's feelings" (157) that implied a close association with humanity but it followed on with a catalogue of examples that documented the "amputation of breasts of mothers nursing their young" (159). Anti-vivisection writers continuously linked vivisection's interest with maternal non-humans alongside the plight of the vivisector's wife in many works of fiction. This aspect alone supports the argument that women identified with the repression administered to those that became unfortunate victims of the laboratory, but this is not to suggest these women were physically harmed by their husbands. An instance of this connection is when Lind-af-Hageby and Schartau graphically describes the destruction of a non-human body from the laboratory of University College. They describe the operation as the vivisector begins to:

> tear living beings to pieces, to analyse the properties of the warm blood that spurts out from lacerated vessels, to mince the twitching muscle and squeeze its fluids for the test-tube, to cut vibrating nerves, to bring disorder and disharmony into the perfectly united parts of the living body, are now the highest forms of this science. (7-8)

The wording of the above experiment returns the reader to Shelley's laboratory and draws striking parallels to Frankenstein's 'tearing apart' of the Creature's female companion. A clear gendered trajectory from Shelley's 'workshop of filthy creation' can be traced to the laboratory of The Shambles of Science, while passing through Van der Meersch's Paris

hospital. These routes taper into Colmore's novel where women's bodies, both human and non-human, are shown as being held vulnerable to medical science, as a disposable tool to satiate male ambition. In 1910, The Anti-Vivisection Review published an article entitled "Rabbits Tortured by having the Bones of their Young Inserted under their Skin" (341). The experiment involved the insertion of female foetal bones under the skin of pregnant does in monitoring the growth of tumours, although the anonymous pen confirms that no such tumours were discovered. By invading both the foetal and maternal development of a female body, science claims gestation, motherhood and nurturing as its own. Buck rabbits were not used for the experiments and there appears a distinct divide between gendered subjects offered up for experimentation.

The anti-vivisection voice in The Priest of Progress is heard through the campaigning of Judith Home, who offers a complimentary and posthumous honorary characterisation to Cobbe. Like Cobbe, Judith supported Carroll's argument that vivisection 'produced a callousness of its pupils" (100) and uses her own experience as evidence:

> [o]n the morning of operation I was carried down to the operating-room and placed on a table. ... I was stripped ... my arms and legs were bound so that I could not move, and I lay naked on the table covered with nothing but shame. Then the second nurse scrubbed me ... scrubbed me with a scrubbing brush; and hard, as if I was a deal board and not a woman. ... I might have been spared both the shame and the pain. And the pain was horrible; if you have any idea what appendicitis is like, you will have some notion of what it means to be scrubbed violently over the appendix. Then, my head hanging down over the edge of the table caused awful pain in the neck and terrible sensations altogether. I shrieked with agony, I couldn't help it; I can't tell you how it all hurt' … Nobody took the slightest notice of me" (101-2)

Whilst Judith "shrieked with agony", she was more concerned that the "scientific dissectors" (102) would "gag" her "mouth" to later refute that she had experienced any pain, but it is "shame" that penetrates Judith further than the scalpel. Like the operation of Sarah Jennings, the Priests of Progress offers a footnote to explain the legitimacy of the account. The Appendix states that the operation "was performed on the sister of an intimate friend of the author's" (381) but, again, there is an absence of names to purport its truth. From the outset, Judith confirmed that the "nurses were all men" (101) and from the passage, it appears Judith was the only woman in the operating theatre. By substituting her own body with that of a deal board, something wooden, abstract and without emotion, Judith declared herself to be inhuman. Rudacille encapsulates this dilemma when she concludes that the anti-vivisection movement was a "womanly crusade against masculine capabilities of leadership" (54). A review of Priests of Progress by The Spectator in 1909 drew attention to Colmore's "attacks [on] an alleged practice of performing surgical operations" (30) but it is clear through the accounts of Sarah Jennings and Judith Home that women felt operations were performed for the benefit the surgeon and not the woman. The same argument could be brought forward with the operations carried out on female non-humans. At the time, the death rates from ovariotomy were initially so high as to warrant a charge from within the profession, as well as from the outside. Elston notes that near the end of the century "the metaphor of medical science, and medical practice on women, as rape, became a dominant theme in anti-vivisection literature, especially that written by women from 1880s onward" (52). The Shambles of Science and the Priests of Progress never provide a positive example of experimental medicine but ovariotomy did greatly benefit women at the time. The negative scientific connotations could suggest that women's feelings of powerless, resentment, and anger over their subordinate status in society may have been sublimated into a profound

empathy and identification with the suffering of experimental animals. At the introduction of Priests of Progress, the reader is introduced to three medical students, Percy Burdon, Edgar Hall and Sidney Gale who are mentored by John Cameron, a character who draws striking parallels to Lawson Tait[61], a staunch anti-vivisectionist and pioneer in safe gynaecological surgery. Cameron remains as a mentor throughout the plot, eventually becoming Judith's life partner, and it is to Colmore's credit that she uses a male character to push forward the threat of invasive operations upon women.

The anti-vivisectionists felt that women's history accounted for the history of the unseen within a late-Victorian society. The loss of the feminine voice is a predominate feature of the novel but the most effective declarations about vivisection and womanhood come from the subservient, "pale timid little woman" (55), Bertha Lowther, who married a "squashing sort of man" (50). The narrator reveals that the Lowthers were a couple who "spoke to each other daily, but never talked" (108). This statement epitomises the anti-vivisection debate: neither side 'talked' to the other. Bertha's communication is conveyed through her solitary occupation of knitting. She knits voraciously throughout the plot and garment upon garment is produced, mainly socks, until she finally discovers the confidence to speak. Once Bertha finds her voice, she ceases to knit. Her incessant handiwork leads 'David' to conclude that she must have "knitted in her cradle" (51), but it is not until she began to "drop ... more stitches than she picked up" (110) that each textual mishap added syllables to her voice. On a literal level, Bertha's knitting constitutes a whole network of symbols. Into her knitting, she stitches the history of anti-vivisection and at key times, her knitting becomes "a mass of confusion" (112). Her knitted fabric becomes an organic text that holds an ongoing registry of the movement and pays homage to all the animals

[61] Lawson Tait (1845-1899) was well known for introducing salpingectomy in 1883 as the treatment for ectopic pregnancy and his first success came with his demonstration that ovariotomy could be performed safely.

condemned to die in the name of experimental science. On a metaphoric level, the knitting represents the stealthy, vengefulness and often silent, work of the activists who are not recognised as the public face of the movement. As Bertha sits quietly knitting, she appears harmless, but unbeknown to her immediate family, her garments are sold to produce funds to combat her husband's profession. In effect, her knitting, the constructing of a textile bodies becomes the savour of bodies that are unpicked by those men like her husband: the vivisectors. Bertha creates the equivalent of the textual body of work distributed by the activist writers.

A book which can be read very much as a forerunner to The Shambles of Science is Leonard Graham's novella *The Professor's Wife* (1881). As with Priests of Progress, the novella offers a selection of key pro and anti-vivisection primary sources that were frequently published in the Press and specialist periodicals.[62] The plot focuses on the life story of Beatrice Greywell and her experience of being married to a vivisector. Whilst visiting her cousins, she is introduced to the celebrated physiologist, Eric Grant, and after a short courtship, the marriage takes place at a time that conveniently coincides with the maturity of Beatrice's inheritance. Beatrice marries a man almost twice her age for love but soon realises that Grant is already wedded to his profession and her dowry unwittingly provides the financial support for her husband's research into brain fever. Shortly after the marriage, Beatrice exhibits signs of a mysterious neurological illness and when unexpectedly gaining entry to the forbidden laboratory, she accidentally discovers that Grant is a vivisector. Consequently, Beatrice suffers a seizure leaving her in a catatonic state and Grant transfers her to the countryside to convalesce. Her small circle of relatives and friends are denied direct access to her but Grant permits his continental colleagues to monitor her condition to advance

[62] Graham's notes refer to the records of the High Commission of 1881 recorded in the Government Blue Book; excerpts from the *Lancet,* Sanderson's *Handbook* and Press cuttings quoting the medical use of anaesthesia.

research on brain fever. After her inevitable death that appears the norm in fiction of all the young, orphaned women married to vivisectors, Grant becomes isolated and detached from both his colleagues and his research.

From May 1881, *The Professor's Wife* was advertised for three consecutive months by The Zoophilist. An anonymous reviewer concluded that the text was "not only interesting as a story and instructive as a warning, but perhaps even more curious as a phenomenon." It was, according to the periodical, "a story with a purpose" and The Zoophilist hoped that more fiction would materialise from the author's pen. (25) It is common for *The Professor's Wife* to be overlooked by modern scholarly research and as there is no reliable biographical trace of the book's author it is probable that Leonard Graham is a pseudonym. As with the Priests of Progress, the use of primary sources to support the text was unusual for anti-vivisection fiction and this tactic means that the plot avoids the overt sensationalism popular within activist literature in general. This is evident from Grant's statement concerning the need to restrict the publication of scientific research for a lay audience:

> [t]wo students have just published a book, compiled from lectures of mine, or rather their notes made at my lectures; any professional man would understand them, but to the lay mind they do bear an ugly aspect ... the sentimentalists have got hold of this book, and have made a little pamphlet out of the worst passages. (139)

This passage could easily appear as a direct reference to the chapter entitled 'Fun' from The Shambles of Science and, therefore, align Grant with Bayliss, but The Zoophilist reviewer confirmed the publication date of the novella as 1881, some twenty-two years before the arrival of the first edition of The Shambles of Science. The publication date prevents Grant from referring to Lind-af-Hageby and Schartau's notebooks but the

proclamation can be read as a prophecy.[63] If Grant dismisses the unnamed text, however, this is literally one side of the story. The full title of Graham's text reads *The Professor's Wife: A* Story. At the time of Grant's warning about the publication, Beatrice had lost her own voice because of her condition. Like the Sarah Jennings, Judith Home and the authors of The Shambles of Science, Beatrice loses her voice at the very time that she should speak out.

Grant is an emotionally tightly-rolled character, and it is only through his wife that he can be read. By the on-going re-reading of Beatrice's "*Story"* and 'Fun', Graham can repetitively re-open the case and give back the previously silenced voices of Lind-af-Hageby and Schartau. As with the earlier essays of Cobbe, free from legal restrictions, fiction relished the possibility of giving the vivisector a moral retrial. This prospect drew many activists to publish fiction as a first-time writer. Due to a legal loophole, the passing of the Animal Cruelty Act (1876) did not honour the activists' request for total abolition. The Act introduced a set of vivisection licences to monitor the use of pain relief and to reduce repetitive operations on the same animal. The licences were counter-productive as most of Government inspectors were involved in vivisection. Grant ridicules both the activists and Government regulation when he states:

> [T]hey tried once before; and we others were wise enough not to oppose them, but to put a few little words into their Bill which made it help instead of hindering up. We can always be as clever as they are. (96)

The ease with which Grant implies that the medical community could manipulate legislation by inserting chosen words into a few loopholes echoes the passing the restraining

[63] Hageby and Schartau showed their unpublished diary to Coleridge on 14 April 1903 and the Coleridge v Bayliss trial took place 11-15 November 1903. For details of publication of *The Shambles of Science* and events that lead to the court case, please refer to Lansbury p9-12.

ropes through the slotted holes in the vivisection benches to manoeuvre another body into a favourable position. Grant's quote emphasises the morally loose approach of science toward human utilitarianism. Sarah Jennings, Judith Home and the unnamed woman in a Paris hospital were all silenced through restraining ropes, that can also be relaxed to 'let things through.' Grant here shows the ease with which the science profession could morally discount legalities which were considered redundant, mirroring the discarding of Sarah Jennings's appearance, Judith Home's dignity and the enforced re-writing of the chapter 'Fun.'

CONCLUSION

Government censoring of the chapter 'Fun' heavily implies the legitimate status of the text as a credible witness to the scientific laboratory. This action set The Shambles of Science apart from a plethora of activist literature that was habitually drenched in sentimentality and pathos. The five print runs alone ensured that the voices of these two women could not be easily silenced but with very few exceptions, Lind-af-Hageby and Schartau did not appear to use the language of science and "speak [authentically] as doctors". Their accounts of dogs with "cut wings" and flayed frogs owed more to sensation and gothic tropes than to their lecture nots from the laboratory. Alternatively, if the Lind-af-Hageby and Schartau had used the language of science, they would likely have alienated a vast section of society and consequently, limited their audience. By building on already familiar literary tropes, the two women introduced their readers to a strand of science that already felt familiar. It must also not be cast aside that although The Shambles of Science purported to be an authentic record of science, it was essentially written to appeal to an anti-vivisection readership who were likely to be other women. These readers would have identified the dog of the French graveside with the one sitting by the hearth, and the two women were uniquely placed in gently conflating a professional dread with a domestic threat. By making numerous maternal allusions

throughout the text, Lind-af-Hageby and Schartau were speaking and identifying as women. The Shambles of Science focused upon the animals within the text, unlike the earlier fiction that has situated the wife in the vulnerable role. The young 'boy' assisting in the laboratory would likely become a reflexive passage for women to look at these assistants in a fresh light, especially those who were mothers.

Except for Landseer's dog portraits, the images used by the earlier activists did not readily align the reader with household pets. By the time the fifth edition appeared of The Shambles of Science, Lind-af-Hageby and Schartau were aware that most of the vivisectors who became profiled in the earlier activist literature, were now deceased. This permitted the two women with the advantage of beginning a new chapter of activism to prosper through to the next century. It is likely for this reason that they decided to refrain from publishing images to support their text, and centre the argument with their own voice.

The loss of the female voice to science is a trope that runs through The Shambles of Science, Priest of Progress and *The Professor's Wife.* Through the disfigurement of Sarah Jennings, Colmore's shows the long reach of scientific ambition, which also stretches beyond the laboratory bench into the lives of those living on the periphery of educated society. It has been impossible to trace the full identity of Colmore and Graham but Lind-af-Hageby and Schartau promoted their text at private readings. For this reason, it was crucial that they did not consider the possibility that writing as fictional authors would diminish their credibility as authentic representatives of science.

3: Reading the relationship between ‘Heart’ and ‘Science’ in Vivisection Literature

Wilkie Collins’s Heart and Science (1883) and Florence Marryat’s An Angel of Pity (1998) both portray the practice of vivisection as morally destructive, but this chapter will show how the practice of vivisection can, at times, have a positive influence on the lives of people who were not necessarily members of the scientific elite. Collins and Marryat use vivisection as a subtext for the romantic plot and in this context, offer representations of women willing to sacrifice romantic love for scientific ambition. This chapter will also examine the ways in which heartfelt emotions were suffocated by those co-existing within the confines of vivisection practice. Heart and Science was published during the height of the vivisection debate whilst An Angel of Pity emerged after the peak of activism and for this reason, this chapter will engage with Collins’s novel first. In doing so, it will chart the tactics employed by the amateur scientist Maria Gallilee and the professional vivisectionist Dr Nathan Benjulia to examine how science enriched and desecrated parts of one’s life. This will then lead to a discussion of Marryat’s medically trained nurse, Rose Gordon, and the ramifications of abandoning romance to marry a man she did not love merely to advance her own scientific future. In tandem, this chapter will explore Rose’s childhood friend, Mary Leeson, who surrendered her heart to marriage and abandoned her medical education. By exploring the transformative qualities of the heart, this chapter will discuss why authors diametrically opposed the ‘heart’ with ‘science’.

HISTORICAL SETTING OF HEART AND SCIENCE

Heart and Science was published six years after the passing of the Cruelty to Animals Act (1876) and two years after the Professor David Ferrier Trial.[64] In August 1881, Ferrier was charged with conducting vivisection experiments on monkeys without a licence. He was acquitted but Ferrier's work on cerebral localisation led to operations on the brain being performed for the first time. The novel also appeared in the shadow of the Royal High Commission in 1881[65] and all three events received considerable coverage in the press. A Story of the Present Time is the sub-title accompanying Heart and Science and the novel became a way for Collins to lend his own voice to a contemporary moral and scientific conflict. Although the "controversy raged in many periodicals in the late 1870s and early 1880s" (Talairach-Vielmas 148), and Collins was an outspoken opponent of vivisection, there is no biographical evidence to connect him to any anti-vivisection movement per se, but there is proof that Collins borrowed details from various contemporary debates to support his fictional plots. In the novel's preface, Collins confirmed that he passed the manuscript "for correction" to "an eminent London surgeon, whose experience extends over a period of "forty years" (39). Gordon was an active correspondent of The Anti-Vivisection Review, but Collins does not reveal what influence he had upon the novel. There was active correspondence between Collins and Cobbe, and she received an acknowledgement in the preface for her "assistance" (12) in offering a "Portrait" of the vivisector. (370)[66] Collins admits to "promiscuous reading" in accumulating research for the novel that involved "a long list of books consulted, and of newspapers and 'cuttings'" (39) but declines to flesh out his sources. Cobbe's influence is clearly felt throughout the plot and, at times, especially with the characterisation of Benjulia, her own voice filters through the page to suppress that of its

[64]For details see, Finn and Stark 12-23.
[65] The Royal High Commission was founded in 1881 to determine the extent of vivisection in Britain.
[66] Letter from Wilkie Collins to Frances Power Cobbe. 23 June 1882 (370) quoted in Farmer.

creator. In turn, Cobbe's involvement with Heart and Science extended her own activist reach as she essentially wrote essays and pamphlets for the movement. Collins was aware of the "detestable cruelties of the laboratory" that were a regular feature of Cobbe's literature, but he informed her that he did not want the book to be "terrifying and revolting [to] the ordinary reader" (12), and Heart and Science is essentially a romantic tale that is infused with science. To this end, The Zoophilist concluded in 1883 that the novel was "told in a uniquely clear way" (123) but as the plot progresses, it is evident that Collins wished to introduce his readers to the world of experimental medicine without crossing the threshold of the laboratory.

As the title suggests, the plot of Heart and Science juxtaposes romantic love with the cold language of science. The novel repetitively interrogates the price paid by the 'heart' to cohabit a life of science. Heart and Science recounts the story of the orphan Carmina Greywell, a young wealthy Italian heiress who, upon the death of her father, became the legal authority of her aunt, Mrs Maria Gallilee, who is portrayed as "a villainous schemer." (Murphy 106) Mrs Gallilee had no familial esteem for her niece but she was a reckless spender and had a financial motive for welcoming Carmina to her household. The will of Mrs Gallilee's brother stipulated that if his daughter died childless, his estate would pass to his sister. She devised numerous plots to thwart the romance between Carmina and her "sensitive feminised" (Talairach-Vielmas 149) son, Ovid Vere and was ecstatic when he departed abroad to recuperate from overwork. In his absence, Mrs Gallilee falsely accused Carmina of being an "imprudent bastard" and "the child of the mother's lover" (249). The shock caused Carmina to collapse with an unspecified strand of paralysing brain fever that led her into the care of the vivisectionist, Benjulia. He prolonged her illness solely to further his own research to solve the "grand problem" (251) of brain disease. Ovid returned just in time to save Carmina with an unpublished manuscript bequeathed by his last overseas patient. The

document offered an untried remedy for brain disease and, consequently, a cure for Carmina's illness. She recovered and the couple unite with Benjulia realising that his life's work has been in vain. He consequently releases the animals housed in his laboratory and takes his own life. The plot concludes with Mrs Gallilee entertaining the scientific profession at home following her release from an asylum after suffering from a fit of neurological paralysis borne out from the realisation that Ovid and Carmina are to be married.

MRS GALLILEE'S RELATIONSHIP WITH SCIENCE

Heart and Science engages with the theme common to many vivisection novels: the imperfection of marriage. Lynn Crocket identifies anti-vivisection novels as regularly portraying the vivisector as a "man unfit for decent female companionship" (6) and disastrous marriages were a regular feature of vivisection novels. Sarah Grand's The Beth Book (1897), George MacDonald's Paul Faber: A Surgeon (1878) and G Colmore's Priests of Progress (1908) are prime examples that depict scientific investigation as despoiling marriage. Collins initially addresses this topic with his offering of the amateur scientist, Mrs Gallilee, a woman who can "always give [her] reason" (135) in scientific debate an object of derision and mockery, especially in the narrative listing her scientific engagements. She is a woman led amiss from her domestic duties by her scientific obsession, but as Patricia Murphy has noted, "her keen participation in amateur science also reveals its attractions – and accessibility – as a pastime, a phenomenon of particular interest given her gender" (109). During the closing decades of the nineteenth-century, biology, botany and geology were the activities concerning the amateur scientist: chemistry was the pursuit of the professional. By engaging with biology and physics, these topics position Mrs Gallilee as a "learned lady" (198) holding a recreational interest outside of the elite science of physiology. However, as Erika Behrisch Elce has observed, although "[t]he modern Muse of Science" (Collins 178) owns a boudoir where she finds "sanctuary" from the pressures of her household, it is her "library table" that

becomes a socially productive space, and one where "her studies" (198) lead to more satisfying – and more socially acceptable – accomplishments (44, Collins 180, 286).

Mrs Gallilee does not appear to use science well in relation to other family members. She does not engage in vivisection or visits any laboratory, but science shapes every facet of her identity. Rather she is characterised as what James Paradis identifies as "a well–known cultural trope, a "zealous myopic philosopher lavishing [her] intellectual powers on the world of trivia" (145). The uselessness attributed to such experiments by their critics implied that "vivisection contributed only to the gratification of curiosity, but to the advancement of practical medicine" (Turner 84). Collins implies that Mrs Gallilee's interests are also based purely upon shallow curiosity but this chapter will later show the opposite to be the case. Her commitment to further the "march of science" (71) does echo that of religious fanaticism and though she prides herself on being a woman who always sets the "right example" (86), both professionally and personally, she appears more self-centred than particularly intelligent. This is borne out by her conspicuous declarations and callous remarks to those that cross her path, by any purposeful scientific enquiry but with perseverance, she managed within the space of one year to familiarise herself with the "zoophyte fossils" and had successfully "dissected the nervous system of a bee" (71). Her hard-line commitment to a comprehensive topic proves that Mrs Gallilee is not an individual disadvantaged by auto-didacticism and her enthusiastic drive compensates for her lack of formal medical education. She "assiduously follows a programme of "determined self-instruction, lecture attendance, research efforts, and discussions with noteworthy professors and other experts" (109), but Collins does not appear to align Mrs Gallilee with the true intellectuals of medical science (and their scientific societies). Her characterisation is developed through a scientific narrative that would have been familiar to the professional audience that Collins had addressed in his preface: his "Readers in Particular" and she does legitimise Collins's research for the novel. Mrs Gallilee

attends lectures on "radiant energy into sonorous vibrations", "Diathermancy of Ebonite" (88) and she is knowledgeable about "Geographical Botany and coprolites … the fossilised ingestations of extinct reptiles" (82). She is also aware that "the albuminoid substance of frog's legs is insufficient (viewed as nourishment) to transform a tadpole into a frog" (83). Collins here intersperses fragments of scientific discourse to validate Mrs Gallilee's claim to scientific culture and in this instance, she unknowingly adopts the attachment characteristics of the zoophyte fossils that she studies. The invalidation of Mrs Gallilee's activities implicit in these acid descriptions aligns her with the women who participated in a public dialogue that they found satisfying and interesting. Although as Murphy argues, it is possible to read Mrs Gallilee as the "foolish imitation" of the male scientist, and that the novel "carves no space in which a woman can follow scientific interests" (44), her character displays a myriad of ways that clearly show how women engaged with the natural world through the learning experience of public lectures.

It is through the conversaziones[67] where Mrs Gallilee is "at home to science" (143) and where she truly indulges in her art. The conversazione was an integral part of leisurely class life and these events were social gatherings where the enlightened middle-class of the latter nineteenth-century circulated. As Samuel J. M. M. Alberti has observed, people attended these events not only to see the spectacle but also to be seen themselves and "to be part of the show" (4) and it is clear that Mrs Gallilee uses these events to be "exhibited in public." (72) By interacting with the demonstrations, Mrs Gallilee could forge her own sophisticated cultural identity in much the same way as vivisectors yearned to make their "names … immortal" in the "Annals of Discovery" (Collins 211). As she cannot go to the scientific experts, Mrs Gallilee's own creative and 'special ways' allows those experts, to

[67] For further discussion on the role of the *conversazione*, see Alberti.

come to her. As Bernard Lightman observes, the popular science of the lecture hall, salon and theatre, as opposed to the [vivisection] laboratory, could be 'dazzling' and audiences had the pleasure of encountering exotic plants and animals and [being witness to] heated controversies about the validity of novel theories. (3) At her own conversazione, Mrs Gallilee both hosts and attends, and her fervent correspondence with various scientists keeps her distracted from her designs on her niece's fortune, intellectually engaged and, perhaps more importantly, as Elce states she remains "on her best behaviour" (46).

By constructing Mrs Gallilee's characterisation from her narrative rather than from her aesthetic qualities, Collins indicates the importance placed on the woman she has now become. For Mrs Gallilee, pride and conceit are more the source of her villainy and not science per se. Collins took care to emphasise in his preface that Mrs Gallilee is not a "gross character" (39) but her outsized mannerisms and her coarse sense of culture lead her to be read as a parody of social standing. In a didactic passage, Collins's narrator reproves her narrow vision:

> See the modern parasites that infect science, eager to invite your attention to their little crawling selves. Follow scientific inquiry, rushing into print to proclaim its own importance, and to declare any human being, who ventures to doubt or differ, a fanatic or fool ... [s]ubmit to lectures and addresses by dozens which, if they prove nothing else, provide that what was scientific knowledge some years since, is scientific ignorance now – and that what is scientific knowledge now, may be scientific ignorance in some years more. (206)

The parasitical allusion suggests charlatans are leading Mrs Gallilee astray, like a fool, she is warned that these bloodsuckers will suckle her generosity dry in a bid for their

own gain. Mrs Gallilee, however, invites the science professionals into her own home and she scrounges their intellect for her own benefit. As Richards notes, those engaging with science "freely choose their profession and elected quite voluntarily to follow nothing more authoritarian than the dictates of sciences" (31), and it is evident Mrs Gallilee recognises the "bloodsuckers" for their worth. The sarcasm emanating from the narrator's description of Mrs Gallilee's interests does not erase the evidence that her mercenary character is established long before her transformation into a 'learned lady'. Science has little to do with Mrs Gallilee's "inbred capacity for deceit" (76). When she becomes the "incarnate Devil", it is not on account of science, but money. (76) She is primarily driven to reveal her "jealous, envious and money-loving propensities" (287, 286, 48) to secure her niece's fortune in order to maintain her societal position. Notwithstanding, the narrator's cynicism, it is Mrs Gallilee who willingly provides the space for the 'parasites' to flourish. Although science may initially appear the source of her villainy, it does not add any negative influence itself and may be read positively despite the narrator's protestations.

MRS GALLILEE, ROMANCE AND THE VIVISECTION PLOT

The 'unwomanly' nature of Mrs Gallilee becomes her defining feature throughout the novel and this image does align her with the experimental scientist who was understood to be "cool, calculating and manipulative – an idea that clashed fundamentally with the traditional role of the family doctor" (Turner 97). Her unquenchable enthusiasm for science calls her motherly qualities into question. Laurence Talairach-Vielmas suggests that Mrs Gallilee's thirst for knowledge is not only a sign of her transgression of Victorian gender spheres but also a symptom of her depraved character. Although Talairach-Vielmas further comments that Mrs Gallilee's passion for dissecting flowers turns her into a female counterpart of the vivisectionist, Benjulia – "the dissector of living creatures" (176) – it is fair to presume from her interests that Ms Gallilee does not dissect living bodies. She does not appear to hold any

direct interest in engaging with the vivisection laboratory but she can, like Benjulia, psychologically vivisect her opponents at will.

Mrs Gallilee's fanatical interest in history recalls the emergence of the new sciences and the interpretations of Nature and man's place in Nature. This is borne out of her understanding of her own evolutionary process from socialite to a 'learned lady'. Mrs Gallilee comes across a neglected edition of the "Gallery of British Beauty" (287)[68] shelved in the family library and she becomes visibly unsettled when reacquainted with her younger self. The title of the volume suggests that the youthful Maria Gallilee was valued more by society as an aesthetic object than the intellectual person that she had now become. Her younger self is catalogued and filed away amongst an assemblage of other, likewise women. Like her botany collection, Mrs Gallilee has become her own 'specimen' housed in the "Gallery of British Beauty. The volume was in a "remote corner of the library devoted to miscellaneous literature" and filed "upside down" (287). Metaphorically, its condition stands as a testament to the "well-preserved, remains of a fine-woman" (191) and audibly the title "Gallery of British Beauty" plays on the ear as "Gallilee of British Beauty", suggesting that Maria Gallilee was an exquisite exception specimen of her time. With a "contemptuous smile", Mrs Gallilee lingered over the volume and told her niece:

> What a fool she had been, at that early period of her life! In those days ... she had flown into a passion when a new dress proved to be a misfit, on the evening of a ball; ... she had fallen in love with a poor young man, and had terrified her weak-minded hysterical mother, by threatening to commit suicide when the beloved object was forbidden the house. Comparing the girl of seventeen with the matured and cultivated

[68] The Gallery of British Beauty was an annual that featured portraits of ladies of fashion and was tremendously popular in the Victorian period (quoted in Farmer 287)

> woman of later years, what a matchless example Mrs Gallilee presented of the healthy influence of education, directed to scientific pursuits! (287)

Her love was a "poor man", which suggests that his societal position was averse to her own. From Mrs Gallilee's comments, it is clear that she once had the capacity to love with a passion. Earlier her facial "paint and powder" had "cracked, revealing her true character beneath the mask. (248)

Although the narrative states that she sacrificed her 'heart' for 'science' prior to the "horrid day" her sister "won the race for a husband" (71), there is historical evidence that her heart was broken in its youth and not traded in solely for mature ambition. To Carmina, her aunt was "a hard, hard woman" (154) and a "[c]ruel, cruel creature" (166) but Mrs Gallilee named her first-born child, a son, Ovid[69]. Her second marriage produced two quite different daughters but the considerable age difference between Ovid and his siblings suggests that he arrived in the bosom of the family at the same time as her heart closed to unconditional love. Every time her son's name is evoked, it underscores the way that through poetry, love becomes immortal. The romantic strand of the plot focuses on her son and Carmina which suggests a striking parallel to the Roman poet Ovid's The Amores and his relationship with Corinna. Ovid becomes a surgeon and represents the role of 'good' science in the novel. It appears from the passage that Mrs Gallilee had "deliberately starved her imagination and emptied her heart of any tenderness of feeling which it might once have possessed" (67).

Mrs Gallilee's role is reflected to some extent in the characterisation of Benjulia, the celebrated vivisectionist, who pursues his own scientific quest in performing experiments on

[69] Publius Ovidius Naso (43 bce-17 ce) was a Roman poet noted especially for his *Ars Amatoria (*Art of Love), *Amores* (The Loves), *Remedia Amoris* (Remedies for Love) and *Metamorphoses.*

animals to perfect his knowledge of cerebral disease.[70] She is not directly involved in Benjulia's professional interests and it is only through her attempt to thwart the relationship between Ovid and Carmina that the two characters' paths cross. Like Mrs Gallilee, Benjulia's obsession is both the cause and product of his narcissism, and he too appears to have closed his heart to science. For Benjulia, he lives in fear of "being forestalled by [his] colleagues" (190) in the same way that Mrs Gallilee dreads the revelation of her poverty. Vivisection is a path to celebrity to "keep [Benjulia's] name living hundreds of years hence" (190) and for this reason, he vivisects for his "own satisfaction – for [his] own pride" (190). Benjulia's characterisation is an example of Cobbe's influence upon the text. Under the guise of responding to de Cyon as one of his "Old Maids", she charged him of relishing a level of professional "street celebrity" (Home Chronicler 89), and both Benjulia and de Cyon[71] are from a Jewish persuasion. It is plausible that Cobbe was constructing one portrait while taking advantage to attack an old adversary. Like de Cyon, he is obsessed by vainglorious ambition:

> Am I working myself into my grave, in the medical interests of humanity? That for humanity! I am working for my own satisfaction – for my own pride – for my own unutterable pleasure in beating other men – for the fame that will keep my name living hundreds of years hence ... Knowledge for its own sake, is the one god I worship. Knowledge is its own justification and its own reward ... Knowledge sanctifies cruelty. (190)

[70] See Preface *Heart and Science* for Collins's quote on Benjulia's modelling on physiologist Sir David Ferrier and his lecture on "The Localisation of Cerebral Disease 1881"
[71] See Fox for details on de Cyon's conversion to Judaism.

Collins guides the logic of the anti-vivisection argument through the inner workings of Benjulia's mind. As White has commented, "the experimental animal could, of course, also be human" (61) and Collins manipulates this potentiality with a darkly humorous episode involving Benjulia and his cook. By this stage of the novel, the reader is aware of Benjulia's capacity as a manipulative individual who now begins to encapsulate the activist fear that the practice of vivisection may possibly transfer from non-human to human in various forms. Greta Depledge interprets Benjulia's treatment of the cook as a "great comic scene" (152) and it is indeed humorous, but as the action unfolds, his callous treatment toward his servant, who is at an intellectual and social disadvantage, makes for an uncomfortable voyeuristic reading. Collins draws the reader into a shared confidence by revealing privileged information that will inevitably lead to the servant's downfall. Deborah A Harter suggests every literary text is an invitation to a voyeur's enterprise, constructing as it does a frame around the image and activity of some other as it stages for itself and for us a particular view (52). Collins mounts the scene between Benjulia and his servant on a canvas borrowed from another novel that bears a fortuitous romantic ending.

The cook had become engrossed in the romance of Samuel Richardson's novel Pamela (1740-1) and in doing so, had let time slip and spoiled the master's dinner. For her neglect, she is summoned to his study. Unbeknown to cook, Benjulia had already been informed of the reason behind the mishap by his manservant. When Benjulia enquires as to the content of her reading matter, cook innocently recites, with enthusiastic passion, the plot of Pamela. In her imagination, cook conflates herself with her "fellow-servant" of the story (215) and unwittingly sets in motion a scene of macabre jest. At this stage, science and literature converge and Benjulia reminds himself that women who devour such reading matter are prone to "excitable minds" and he senses a neurological experiment in the making. Hoping to induce a "violent moral shock" (212), he orchestrates the conversation solely to "pursue his

own ends ... as he pursued his own ends with a vivisected animal" (214). Benjulia's interior monologue shows the ability of specific doctors to use narrative to pierce the surface of the body without the need for what Claude Bernard referred to as "instruments of penetration" (23) – in other words, the scalpel. Benjulia draws upon his own knowledge of Richardson's novel and concocts his own plot concerning a servant girl and her rich master. He becomes "the man who tells his own story" with the cook as the "eager play-goer" (215) and a perverse romance plot emerges. Cook hopes her reality will mirror her reading and that, like Richardson's Mr B, this Dr B will fall in love with her and all will lead to the hoped for marriage. At the climax of Benjulia's narration, reality and fantasy absurdly clash: cook pre-empts the wrong outcome and she throws her arms amorously around Benjulia's neck. To her horror, he rejects her and in a cruel, unjust humiliation, she is dismissed from his house and is left, like a wounded animal, to "shrink ... away … to the door" (216). Coral Lansbury reads this scene as an example of Benjulia's sadism. She suggests he is a "man who can derive pleasure only from inflicting pain upon others" (138-9) and here Benjulia extends his callousness to goading his loyal and otherwise "silent [man]servant" (212) with such an insinuation that it "stung" the "trembling" manservant into revealing the shortcomings of cook's housekeeping.

During the enacted 'romance' scene between Benjulia and cook, attention is drawn to the word 'experimentally' twice during the passage: "[Benjulia] looked (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" (212). By textually partnering the words 'experimentally' and 'inferior', Collins subjectively ignites the reader's attention to the core concern of Cobbe's essay "Light in Dark Places" (1883). She warned her readers that if vivisectors can operate on defenceless animals, they might then consider turning their attention to women, criminals and the mentally ill, and all of those disadvantaged in society.

As Depledge suggests, it is through Benjulia's characterisation that Collins "wittingly satiriz[es]" (153) the experimental scientist, although as discussed earlier, it is entirely plausible that Cobbe had a strong influence here, who is keen to use every available opportunity to study, observe and learn but the sardonic quality evaporates when there is no positive outcome.

The psychological vivisection between Benjulia and cook was unintentionally two-fold. During the refashioned plot of Pamela, the cook decided that there "was a hidden meaning in the doctor's story" (215) and she performs her own analysis of Benjulia. She slowly "lifted her eyes experimentally to confirm he was still looking at her" (213) and links flirtation and vivisection as similar physiological experiences, suggesting that there is a thrill attached to both. At this point, the cook is revelling in a freshly discovered confidence and feels empowered and womanly. Richardson makes numerous references to Pamela's "prettiness" and cook mistakenly believes that her flirting will be conducive to marriage and reassures herself that not only is she "clever", she has the bonus of "fine hair [and] a beautiful complexion" (215). At this point, the 'inferior' creature has taken on the role of experimenter and treats Benjulia as a subject for examination. Collins refers to cook by the name that defines her role and any personalisation is withheld. By presenting her as anonymous, it prevents the reader from identifying with her character and plays on the satiric nature of the scene. Cook also becomes uniformed, invariable and equal to many, all of which align her closely with the experimental non-human. This tactic prevents cook becoming a doppelganger for Pamela in the reader's imagination. If the cook's physical attributes are only scantily discussed, the reader is unlikely to engage in any emotional investment. There can be no doubt that Benjulia's treatment was cruel but cook's battered heart ensures that "her brain was safe" (217). The "relief" she took in "crying" from rejection rescued her from

a lifetime of psychological vivisection by a husband concerned only with the capacity to excite her brain, not her sexuality.

Following many years of presiding over countless experiments, Benjulia had become adept at conditioning himself to disregard his own feelings but it is through his interactions with the youngest Gallilee child Zoe, that the softer side of his heartfelt emotions is revealed. Murphy concludes "Benjulia does, at moments, reveal glimpses of humanity" (123). Zoe is a ten-year old child and as such an under-developed female who shows an inability to express herself. She is a chatterbox, but like the vocabulary of Sarah Jennings that stigmatised her social standing, Zoe's command of the English language illuminates her intellectualism. Zoe's speech is jumbled, and Talairach-Vielmas suggests she is "disobedient, slow-witted [and] disruptive" (151). Lyn Pykett reads Zoe's bad punctuation and spelling as a form of dyslexia and there are many references to her "stupidity" (257) throughout the plot. Despite these difficulties, Zoo shares an unusual, exclusive relationship with the doctor. Benjulia's relationship with Zoe exposes a fear that runs much deeper than the "occult problem of brain disease" (211): it exposes his heart. Throughout the plot, Benjulia appears to indulge in his fascination with the young girl and he informed his brother that his last experiment on a monkey "horrified him" because of the animal's "cries of suffering ... were like the cries and gestures of a child … I sometimes play with" (191). Although Benjulia thought of Zoe, he continued with the experiment. The fear experienced by Benjulia's is revealed in his stuttering description of his experience at the operating table: "My hands turned cold – my heart ached – I thought of a child I sometimes play with – I suffered – I resisted – I went on" (191). Benjulia expresses himself in "deep sobbing gasps" (191) and every narrative dash on the page acts as a sharp intake of breath. Benjulia is a man who usually delivers ideas with clinical precision but when he describes this experiment, his broken syntax reveals the intensity of the "conflict between his scientific morals and his social ones" (Elce 45). In

1873, Edwin Ray Lankester suggested in Nature that "the physiologist suffers with his experimental animal, and the mutual suffering of both vivisector and vivisected becomes a sacrifice offered up on the altar of Science." (145). Although Benjulia appears to hold no regard for animals, Zoe adopts animalistic characteristics, and she is the only being who prises any emotion from the "living skeleton" (63), an oxymoronic description that hints there is more to Benjulia's wellbeing than at first presented. Zoe is often found crouching "under the table" like a dog and she follows Ovid about chasing "at his heels" until he scoops her up and carries her back to the house (139). She enjoys being tickled with Benjulia's stick in the same way that he pleases Tinker, the family pet dog, and both child and dog wriggle with delight. Her name 'Zoe' is often abbreviated to 'Zo', a name that visually and audibly shares connotations with 'zoo', the previous abode of the monkey, bringing the link with Benjulia full circle. In August 1903, the anti-vivisection periodical, The Abolitionist said that:

> "[m]onkeys are not often devotedly attached to human masters as are dogs. Cruelty to a monkey does not therefore partake of the special element of treachery, ingratitude and heartlessness which belongs to the vivisectors of dogs but a monkey is, admittedly in the wake of Charles Darwin's recent discovery, the nearest relative in blood and naturally which man possesses … and to deal cruelly with it … is only one degree less savage than to do the like to man" (55).

Although Benjulia refused to halt the experience for the animal, his heart aches in sympathy with the monkey, and he must fight against the sympathising effects of his science to reach his goal, purely because of the monkey's semblance with Zoe. This act carries a vestige of redemption and self-reflection. Jed Meyer discusses the topic of emotions in experimental science in the period, noting that public revelations of laboratory practices were not only difficult for the "lay reading public," but also that they revealed, "animal researchers to be equally passionate, involved in deeply emotional relationships with their nonhuman

subjects" (399). There is photographic evidence that proves that renowned, particularly callous, vivisectors Claude Bernard and Victor Horsley were avid pet keepers, especially of dogs and the To-Day periodical stated in 1897 that "M Pasteur loved animals so much that he could never bring himself to shoot one" (18), although all three men vivisected scores of animals without the use of anaesthetic. Benjulia does not provide any evidence of particularly favouring any animal, but his emotions instruct the text that he hold an affection for a little girl who acts like a dog and reminds him of a monkey, suggesting that the "living skeleton" still holds flesh.

Benjulia articulates the schism between his scientific and social selves by admitting his attachment to Zoe, whose friendship intrudes on and compromises his ability to objectify the practice. Before his suicide at the close of the plot, Benjulia chooses Zoe over family members, bequeathing his estate to her on the same evening that he releases his laboratory animals – providing a positive link between the female, albeit in this instance a child and the practice of vivisection. Zoe was a passionate lover of animals and by way of an extension beyond the natural plotline, it is fair to presume that her inheritance would not support the practice of vivisection. Despite the origin of her inheritance, there is every possibility to consider that Zoe would support the Movement in later years. In bequeathing Benjulia's inheritance to Zoe, Collins places her in a precarious position, like Carmina. Alternatively, in leaving Zoe a financial legacy, Benjulia indirectly restores the humanity of the 'celebrity' vivisector through an act of benevolence. His final regret was not one that pointed to his career. Benjulia desired to return to a more innocent childish pleasure: he "should liked to tickle her once more" (321). To this end, he visited the now vacant Gallilee school room, but on finding her departed, Benjulia notes her "copbook" (319) in the battered desk and tears off the part that bears Zoe's name. He places this scrap of paper in his "breast pocket" (323), just by his heart, and leaves the house to commit suicide that evening. Collins does not reveal if

this paper was removed prior to this demise but if not, her namesake perished upon his heart in the laboratory fire.

By placing Benjulia at Oxford before the peak of the debate, Collins aligns him with a respectability and suggests that vivisection had corrupted and hardened the heart of the man. It is the Gallilee school room that reignites Benjulia with his younger self. When Zoe and Benjulia look up the meaning of 'love' in the dictionary, she rests her hand on his leg and reaches "the one tender place … which made his life acceptable" (246). The emotional charge surprises Benjulia and his heart becomes the passive body rife for invasion as Zoe symbolically stands for the animal who touches back, both physically and emotionally. Collins was true to his intention when inferred that he wanted to "mak[e] [his vivisector], in some degree, an object of compassion" (quoted in Farmer 370). The narrator explains how the touch of an innocent child penetrated Benjulia's exterior:

> It was only the hand of a child – an idle, quaint, perverse child – but it touched … the one tender place, hidden so deep from the man himself that even this far-reaching intellect groped in vain to find it out. That unintelligible sympathy with a child looked dimly out of his eyes, spoke faintly in his voice, when it replied to her. (246)

Carmina's accusation to Benjulia that he had "never loved anybody: "[y]ou don't know what love is" (245) was wrong because he loves Zoe and it is clear from the above passage that he experiences a keen bond with Zoe. Her simple action makes love and sympathy, emotion and ethics, the result of physical sensation, and it is the gentleness of her touch, her hand that cuts through Benjulia's sensibilities. Jessica Straley notes, "through Zo's reaching into Benjulia's hidden depths is the closest that the novel comes to demonstrating the dissection of living tissue" (370) and it is noteworthy that it is the vivisector that is dissected.

Benjulia asks Zoe "what do you do in the school-room?" and she replied that they "look in the dictionary" and she invites him to swap places: she becomes the teacher and Benjulia the pupil. As Talairach-Vielmas has rightly concluded, "Benjulia's laboratory explores bodies turned inside out" (152) but this time it is Zoe that reaches deep into the recesses of this body. She randomly selects the word "love" in the dictionary and instructs him to decipher the definition. He mechanically runs his finger down the list of explanations which followed and discovered that there were multiple meaning to this one word, unlike the word vivisection for which there is no plausible alternative in the Oxford English Dictionary. Benjulia was impatient that there is no one clear definition and comprehend that love is an affective state of consciousness. In his frustration, he snaps shut the "dictionary in contempt" (247), echoing Mrs Gallilee's reception at the earlier meeting with her younger, romantic self. Collins offers only the scantiest of back stories into Benjulia's history, namely concentrating on the relationship with his anti-vivisectionist brother, Lemuel through a cumbersome discussion about vivisection. However, the narrator does suggest that, like Mrs Gallilee, the youthful Benjulia may have surrendered his heart to science at the expense of romantic passion. Zoe's simple touch penetrates deep enough for Benjulia to question his life's work. He closely comes to admitting that he paid too high a price and that "might he have looked higher than his torture-table and his knife?" (247) By experiencing 'love' the body results in many changes that do not take recourse to the invasion of the vivisector's blade. The plot makes it clear that Benjulia is renowned for his researches and except for discovering a solution to an unnamed strand of brain disease, it does not appear he needs to add to his celebrity. Therefore, Collins injects a tenderness into the heart of his vivisector as he had no need to look further afield in his professional life to understand his life's worth because Zoe's impromptu action spontaneously confronted Benjulia with his own reality and the true cost of scientific ambition.

HISTORIC BACKGROUND TO AN ANGEL OF PITY

A novel that also explores the cost of surrendering the heart to scientific advancement is Florence Marryat's An Angel of Pity (1889). The plot illustrates the challenges faced by the medically astute woman co-existing within the Victorian ideal of marriage. Marryat was largely a sensation fiction writer who produced over seventy novels and her interests rarely strayed far from the usual themes of seduction, marriage and addiction. She had earlier touched upon the topic of scientific exploration with her novellas, Nelly Brooke (1868) and later with *The Dead Man's Message* (1894). Both texts dealt primarily with issues of spirituality and only briefly engaged with the practice of vivisection. As Depledge has observed, the anti-vivisection agenda of Marryat's novel does link it directly with the other social purity agendas of the time, such as the temperance movements and the campaign for the abolition of the Contagious Diseases Act and, therefore, late nineteenth-century feminist ideologies (221).

As with Collins, there is no proven biographical evidence to link Marryat as an active member of any of the anti-vivisection committees but she appears influenced in her characterisation by the writings of renowned figures from both sides of the debate. There are parallels to be drawn in the characterisation of Rose and the real-life activist, Anna Kingsford. Rose delivers verbatim snippets from Kingsford's popular essays and George Arundal's role in the plot closely resembles Kingsford's close friendship with Edward Maitland. The plot of An Angel of Pity draws heavily on the theme of self-imposed isolation through repercussions involved with affairs of the heart at the expense of science. At its centre is the story of two Girton educated women[72], Rose Gordon and Mary Leeson, whose relationship with science shapes the outcome of their married lives. From the outset, Rose is

[72] Girton College, Cambridge, was the first institution to permit women to sit the Tripos exam in 1873.

strong-willed and determined to follow her own path in life, intent in putting her education to good use in establishing a convalescent home for "gentlewomen" (23). In contrast, Mary surrenders her medical education for love, but is swiftly widowed and ends up presiding over a nursing home for abandoned animals. Although she recently qualified as a doctor, Rose joined the nursing ranks of a "charitable hospital"[73] and her work drew her into the path of one of the most "celebrated" and "cleverest" of London surgeons, Lesquard, who she later married (34). Her medical education afforded Rose the knowledge to challenge Lesquard's experimental methods performed on the hospital charity patients, and her actions set in motion a chain of events that filter into every aspect of the plot. Rose accidentally discovered Lesquard's vivisection laboratory and during the ensuing confrontation, she refused to bear his child and declared that from now on, she would only be his wife "in name" (305). To counteract this challenge, Lesquard performed the cruellest of retributions and vivisected her companion dog, Bran, the last remaining link to her childhood. Rose discovered Bran bound, mid-operation, to one of Lesquard's vivisecting benches and to end his torment, she pierced his heart with the dissection scalpel, which she then flung at her husband and accidentally impaled his hand. The blade was contaminated, leading the wound to become infected, and Lesquard's life lay in the balance with a life-threatening strand of blood poisoning. Rose returned to nurse her husband and consequently saved his life, upon which he denounced his profession and they moved to the country to open a nursing home for women.

In Rose, Marryat shows a confident, strident woman who in studying at Edinburgh had "pass[ed] with honours" in an examination where "half the men candidates failed" (20. 43). Throughout the novel, she never performs as a doctor, nor is she addressed, at any time, as 'Dr Gordon; but upon her husband's decoration, she becomes the titled Lady Lesquard.

[73] The reference likely alludes to Battersea Hospital: a charitable hospital known to the locals as "the Old Anti" because of its anti-vivisection stance. It was a place where patients could attend in the comfort that they would not become victims of scientific experimentation.

For reasons left unexplained, Marryat enrols Rose as a nurse at a charitable hospital, but her medical background plays a secondary role to the accomplishments her deceased father had acquired in the forces. At the hospital, she is referred to as 'Nurse' Gordon and she is not expected to 'marry well' due to her 'rank.' Her husband received a knighthood for his contribution to science but it is only through his achievement that she is socially elevated despite her superior knowledge. By drawing attention to this academic gulf, Marryat insinuates at the intellectual distance women still had to travel to be considered equal partners within the science profession. Throughout An Angel of Pity, Rose's medical knowledge led her to express reservations about Lesquard's treatment of hospital patients and while the novel focuses on his vivisection of animals, the fear of where vivisection will lead is explicitly signposted through the progression of her marriage: as her heart closes to science, the vivisection threat gathers strength. Marryat here suggests that vivisection is a 'natural progression' and underscores the fluid legislative boundaries applicable to those of a certain class.

LOVE AND THE VIVISECTION MARRIAGE

Mrs Gallilee and Rose both wished for a "life passed in the pursuit of science" (Marryat 134), but Rose rejected the Victorian ideal that a husband was essential to a woman's existence. Unlike Mrs Gallilee, she questioned the fundamental organisation of family life, mocked the inflated virtues of wifehood, and read the social restrictiveness of marriage as a hindrance to self-expression. Rose realised women needed to free themselves from the crippling bondage of family and matrimonial ties to be true individuals and for these reasons, she was prepared to marry a man she "knew ... she did not love (37)" but who could become the "advancer of [her] fortunes" (133). Marryat here not only turns the traditional concept of the marriage dowry on its head but also presents a woman willingly sacrificing love over ambition, the normal path trod by the male fictional vivisector. Mrs Gallilee married for monetary and

societal advancement, and became disillusioned with both, but Rose was "in love" with her profession and she was adamant that she "desired no other lover" (35). As a husband, she told herself that what she recognised in Lesquard was:

> the man who will fulfil my ambition, who will be able to put me in the way of interesting knowledge, and working more ably for the good of mankind ... and if the many advantages are clogged by the chain of matrimony, I must try to bear it. (47)

In turn, it is Rose's independent spirit and heritage that initially attracts Lesquard to the union. On the cusp of proposing:

> [he] gazed at her as she stood in the clear light, and a mad desire to possess her rushed into his mind. She looked so calm, so dignified, so much all that a gentlewoman should be. But oh! So cold. The wish to stir that calmness – to cause the flush of passion to animate that cheek – lashed his senses as with a whip. (45)

Lesquard's intrigue with his potential bride owes much to the medical gaze that had conditioned bodies to be examined in this way. Rose had presented herself ready for inspection. She is calm, still and prepared in the correct light: she was exhibiting all the attributes required of the perfect specimen. Underneath the cold exterior, Lesquard detected a passion, and one that he wished to command and 'whip' into place. Lesquard did not wish for a wife, he was initially attracted to Rose through her heritage. Rose admitted that Lesquard "attract[ed] and repulse[ed] her at one and the same time" (75) and Depledge rightly suggests that "Marryat depicts a strong but complicated sexual attraction, which neither party seems to fully understand" (221) throughout the courtship and marriage. For this reason, Marryat tightens and relaxes the plot at different points of their relationship.

Rose's association with science leads her to be read as 'unwomanly' by those within her closest circle and a similar charge is levied at Mrs Gallilee for her shortcomings as a mother. Both women are negatively judged by others purely on their involvement with science. Rose's cultural understanding and education sets her apart from the general interests of her peers and, like Cobbe, she was viewed by her contemporaries as having a "tone of the trousers" (Mitchell 1). As Elston has deftly noted, Rose could be considered a "woman by her sex [but] a man by her mind" (269):[74] a quote that invokes a striking parallel with Elizabeth I and her infamous Tilbury speech of 1588. Rose's strength of character and beauty drew unwanted attention from one of Lesquard's close companions. Sir Charles Abrahams was a 'celebrated lawyer' (255) and an amateur vivisectionist who engaged in experimental operations on animals at Lesquard's laboratory. Abrahams shares much in common with Collins's music teacher, Mr Le Frank who both appear as the "amateur virtuosi"[75] engaged with "useless, irrelevant, and usually disgusting research into topics with which no gentleman should concern himself" (Haynes 35). Due to the rising interest in gynaecological experimentation, late nineteenth-century science had a capacity for portraying a relationship between male observer and female object because "science was awash with … men observing, manipulating, dissecting, and finding the truth about women's bodies and the reproductive secrets of the universe" (Smith 133). During a dinner party held at the Lesquard's family home, Abrahams began to observe Rose, and considered her aesthetic qualities in the same predatory manner that he would a specimen on her husband's laboratory bench. Abraham's scrutiny mirrored Lesquard's earlier reflection when Rose first visited his study, and both men conflated admiration with lust. Although Rose did not hold any professional post, her medical education matched that of her husband and easily surpassed

[74] Elston's quote echoes the address of Queen Elizabeth I to the troops in 1588 at Tilbury Camp setting off to defend the Country against the Spanish invasion: "I may have the body of a weak and feeble woman but I have the heart and stomach of a King."

[75] See Haynes, Chapter 3 for discussion on the Foolish Virtuosi.

those of Abrahams in the field of science. Marryat here could be suggesting that although women can compete with men on an intellectual basis, they are still vulnerable on a personal level. Despite his professional standing in the judiciary, Abrahams possessed a "coarse man's low perception of womankind (255)" and read Rose's social elevation from nurse to physiologist's wife on a par with female prostitution. In 1910, James P Warbasse wrote in The Conquest of Disease through Animal Experimentation, that there were two types of women, the "mother type" and the "prostitute-type." Despite Abrahams being "exceedingly clever" (145) he held the "degrading" and ungentlemanly theory that every woman ... has her price" (247), and Marryat is showing the variable 'currency' of a woman's body held by certain individuals. Abrahams's "greedy lascivious eyes" calculated that Rose's body was worth a "thousand risks" to possess (253) and he depersonalised Rose as an indiscriminate being to be scrutinised, probed and invaded at will, without negotiation. While alone in Lesquard's study, Abrahams subjects Rose to a form of imprisonment and insinuates an action of rape, but unlike the laboratory animal, Rose has recourse to language. When Abrahams strikes, Rose takes charge of her own body; it is one female space not open to invasion by masculine science. Lesquard refutes his wife's claim of rape and supports Abraham's version of events and again, Marryat underscores a further vulnerability posed to women: Rose cannot turn to the law because her oppressor is the law. Cobbe contended that vivisection violated Englishness (Ferguson 105) and felt that the practice of vivisection was a contemporary evil, with scientists, doctors and lawyers as its corrupt agents. Such scientists had much in common, she thought, with the brutal drunken husbands that she had denounced earlier in a pamphlet entitled "Wife Torture in England" (1878). However, unlike cook who left to limp away at the mercy of Benjulia, this time it is Abrahams that is left to scuttle out to the door like a wounded animal.

Abrahams was a scientific hobbyist, a man with no formal training within the scientific field in which he chose to specialise, but he could boast that he was "to be one of, if not the greatest amateur vivisector in London" (198). There is no mention in the text to support this claim and it appears more a boast of his egotism, but the claim did support the far reaching, and likely valid, fears that the interest in vivisection was becoming attractive to those outside of the immediate science profession. Lesquard's open invitation to Abrahams was also extended to Captain Stuckey and Mr Wilson. The varied titles relating to three men from different societal backgrounds does suggest that they do not hold any medical distinction and brings to the fore a major concern of the activist. Marryat suggests that vivisection was open to anyone of any rank and not contained to one social class. Metaphorically, Marryat presents vivisection as a moral contagion. At the time, Rose was unaware that the storehouse attached to the rear of her marital home was Lesquard's vivisection laboratory and by this stage, it is quite plausible that some of her readers could be suspiciously glancing over buildings attached or near their own homes.

Marryat's second marriage centres on Rose's closest companion, Mary Leeson, who had abandoned her medical education in favour of love, only to be widowed "during the first year of [her] marriage" (107). Since her loss, she had lived alone but was financially supported by her in-laws which suggested that the marriage was a happy union and unlike Rose's marriage, one driven by nothing more than heartfelt emotion. After her husband's death, instead of offering Mary the option to complete her medical education, Marryat places her in charge of a small refuge for abandoned animals and after a respectable period of mourning, she becomes engaged to the attending veterinary surgeon, Dr Seagal, who had earlier trained under Lesquard in a vivisection laboratory and was well acquainted with his methods of physiology. Dr Seagal rejects Lesquard's scientific ideas of advancement and although he holds first-hand laboratory experience, Marryat does not permit him to carry the activist

argument. The plot's narrator considers it is a "misfortune" (42) that Mary, a promising medical student, fell in love with the penniless Charlie Leeson. Mary's first flush of passion brings an echo of Mrs Gallilee and the "poor … beloved" of her youth, although while one woman marries and discounts science, the other rejects love and weds herself to a life of botany and geographical discovery. In depriving Mary of her education, the narrator systematically calculates that dying was the "most sensible thing [Charlie] could do" (44). It is strongly implied that the death of Charlie is the price paid for the surrender of scientific promise. It is further hinted that the only tangible offering Charlie could present to his wife was the love of his heart, obviously an invaluable commodity. The scientific voice of the text hints that love is valueless and possibly corrosive to one's personal development. This evaluation of Mary's cherished husband undermines her emotional and intellectual judgement. The calculated response implies she is frivolous and, at times, Marryat does paint Mary as puerile and trivial primarily based on her reading matter and penchant for gossip. The analysis further suggests the abandonment of education for romance, will lead to an empty emotional road, but Mary embarked upon two happy marriages in contrast to Rose's emotional life that became entombed in domestic servitude. The narrator's opinion appears as a thinly veiled offering of Rose's view to either validate her own unhappy marriage or to provide justification of her suffocated affection. The justification of Mary's predicament is judgemental and ill-founded as the text is empty of any prenuptial history to support a lack of moral fibre or nuptial commitment by Charlie. No mention is made of his profession, education or heritage, whereas Marryat devotes considerable details to the financial security and societal advantages associated with a marriage to the "handsome, well-made [and] charming" Lesquard. (22) Irrespective of Charlie's occupation, what is clear from his union with Mary is that Marryat y outlines the lasting effect of the relationship on her well-being long after his demise. With Mary's second marriage to Dr Seagal, whose name resonates with

the bird of freedom, the seagull, she unites 'good' science and affairs of the heart. By marrying for love, both within and outside the confines of science, Mary had never become psychologically bound or physically neglected, unlike Rose who suffocated her romantic inclinations for a life of independence but became the caged gilded bird to be exhibited at the head of Lesquard's dining table.

Unlike Rose who is initially presented to the reader at the charity hospital in her nursing uniform, Mary is introduced to the plot from her drawing room, happily "seated at needlework" (12) and like Bertha Lowther and her knitting, sewing acts as a metaphor for Mary's curative role throughout the plot. Rozika Parker has defined sewing as an activity that "indirectly restores" (55) and Mary, like Bertha, becomes the textual weaver of benevolence. Needlework is commonly recognised as a marker of femininity and it performs the opposite function of vivisection: one restores while the other unpicks the body. Marryat realigns the nurturing thread that accompanies nearly all vivisection plots to that of caring for animals. The animals left in Mary's care are vulnerable but they clearly act as substitutes for a family that never hint at making an appearance but she can afford her surrogate children a protection through her benevolent implementation of science, whereas Rose's dog Bran paid the ultimate price with his life.

Rose married Lesquard on the understanding that he would assist her in setting up a nursing home for gentlewomen. After their marriage, the narrator informs that "Mr Lesquard had quite made up his mind from the beginning that his wife was not going to dabble anymore in sick nursing or medical studies" (23). It is the intellect which first attracted Lesquard to his wife that is later able to challenge his authority and knowledge.

CONTINENTAL SCIENTIFIC HEARTS

Lesquard was orphaned at a young age and raised by his French aunt, Madame la Comtesse de Marcel, who considered Rose a "bad bargain" (226) for a wife due to her education and independent spirit. Like Mrs Gallilee, Madame de Marcel entertained science at home, but Marryat here offers a very different version of the scientifically appreciative woman. Madame de Marcel does not hold any interest in science herself but she understood its importance within the patriarchal structure embedded within French marital life. Echoing Mrs Gallilee's conversaziones, Madame de Marcel's "salons [were] celebrated for the number of professors of science and literature that frequent[ed] them" (208), but her views on a marriage that cohabitated with a woman's interest in science were firmly rooted in female subordination, and it was no coincidence that the attendees at her scientific gatherings were contained to those of scientific men. To Madame de Marcel:

> [m]arriage was an institution in her eyes, which … required only obedience and courtesy on her part to render it sacred and binding. Women, she thought, should keep themselves and their conduct within the bounds of propriety, and observe all les bienséances de la société: but men, on the other hand, whether unlicensed or not, were not beings to be interfered with, or required to give an account of themselves. If they supported their wives in the position to which they were entitled, they did their duty. No one had the right to interfere with their actions when out of sight, or away, from the éspoiage of the home circle. (Emphasis in original 215)

By peppering the passage with French phrases, Marryat is appealing to a particular audience: a working class reader was unlikely to be bi-lingual. She could be identifying with the wives of vivisectors who were known to hold practices both on home shores and the continent. Madame de Marcel's suggestion that women should not "interfere with the

actions" of "unlicensed" men sends a clear warning to those attempting to regulate investigative science. The central claim throughout the passage is that the 'heart' and 'science' should not expect to live in harmony. Lurking beneath the text is a sinister undertone. Madame de Marcel clearly is not a feminist and as the operation on Sarah Jennings can testify, there were women philanthropists who avidly campaigned for the advancement of vivisection. Often, they required human participants to 'willingly' ascribe their authority. Sarah was coerced in this fashion and Marryat is clearly emphasising through the voice of Madame de Marcel, those other women should be aware of the inclinations of their own sex. It was Madame de Marcel who informed Rose that Lesquard habitually visited "many [of] his friends" at the "*Laboratoire de Pathologie",* (216) aware that Rose's medical background would detect the true nature of its existence, and begin the dismantling of her marriage. Echoing the above passage, she instructs Rose what takes place in the Laboratoire should not be questioned because "scientific subjects [are] not fit for ladies" (217) and suggests she enrol in a convent. At this point, Marryat aligns Madame de Marcel with de Cyon, one of the most outspoken pro-vivisectors of the debate. She advised Rose that if her emotions cannot be controlled she should consider a "respectable refuge in a convent" – the very suggestion that de Cyon made to "persons of excitable personalities", namely the anti-vivisectionists. (Marryat 218, de Cyon 511).

Despite Madame de Marcel's best efforts to end her nephew's marriage, it is his library texts that unveils his true profession and brings about an end to his life with Rose. As Rose searched for a relevant text related to her own interests, her eye caught a number "severe-looking" (287) volumes lacing the shelves. By this stage of the plot, Marryat has revealed substantial clues to enable the reader to recognise the topics lacing the book spines falling off the bookcases. Reading aloud snippets taken from each volume, Rose pieces together an extensive list of publications by a collective of renowned pro-vivisectors. Many

of these texts would have likely have received extensive coverage in the anti-vivisection periodicals and stock quotes were placed on activist placards for public consumption. Rose was astounded to discover that there were "half a hundred" (287) texts relating to physiology alone, indicating that like Benjulia, Lesquard subscribed to every publication. She wondered why her husband would wish to wade "through a metaphorical sea of blood" for his work (186). The first volume she read was Paolo Mantegazza's "Fisiologia del Delore"[76] carried a "long written eulogium of Lesquard's ability, written by the author himself" (287). Marryat quotes Mantegazza verbatim at considerable length and provides graphic accounts of Mantegazza's vivisection experiments carried out on frogs, rabbits and dogs. A "fatal attraction" (288) propels Rose to continue reading the text, much against her will. In May 1881, the first issue of The Zoophilist carried a review of two of Mantegazza's books. As DeWitt has rightly noted, the anonymous reviewer was primarily concerned with "what they reveal about [Mantegazza's] character" (126) rather than what went on in the laboratory. Marryat conflates the review with Rose's reading of the text and merges the professional conduct of Lesquard and Mantegazza until they appear seamless. Rose pulls further volumes from the shelves and quotes phrases from the open pages. These texts slowly begin to psychologically dismantle the man she thought he had married into an individual she cannot now recognise. The vivisection manuals can only provide an objective view of her husband, not a moral profile. Each phrase, line and dedication strip away another fibre of her husband's being and Lesquard's identity has now become reconstructed by the words of other men. Rose runs through the overly detailed accounts of twenty-eight vivisection experiments, some of which Marryat describes in graphic detail. Marryat is clear to emphasise that "each cry and groan elicited would have undoubtedly been noted in Lesquard's notebook" (291). It is at this point, that the text introduces a distant "low moaning" (292) that appears to be

[76] Paolo Mantegazza *Fisologia del Delore: Physiology of Pain* (1880)

drifting out from the "chemical storehouse" (293). This is the one occasion that the laboratory door had been left ajar. Upon entering, Rose discovered:

> Milk-white rabbits, with their innocent, harmless mouths fixed wide open in their dying struggles, their glazed eyes immovable, though some rats in their last agonies were trying to tar their lips and eyes with impotent revenge. Dogs opened from head to foot, still quivering with life, cats which had been burned in an oven, panting with scorched flesh and staring eyeballs; dead frogs, dead doves [and] dead mice. (294)

Walking further along the chemical 'storehouse', Rose noticed:

> a simple table with holes, through which cords were passed to bind down the limbs of a small dog and rabbit, so that they could not move, whilst their heads had been opened, and their brains exposed, that the operator might watch the working of those organs whilst the ill-fated creatures were still alive. (295)

As Depledge observes, the only thing missing from Marryat's passage are the illustrations from Cobbe's essays (145). For the first time in Rose's marriage, she looks with her eyes and not with her mind and when next meeting with Lesquard, she informed him that refused to "run the risk of bearing [their] child" (308). Rose thought it might be born with the same tendencies as its father. It is at this stage that Lesquard reveals he has a desire: his major wish in life was to have a son to follow in his footsteps (352). Rose's decision devastates him but Marryat does not permit either character to consider that the child could be born female and inherit Rose's benevolent nature. In refusing her husband an heir, Rose emasculates Lesquard and to compensate for the loss of his fatherhood, he performs the cruellest act of retribution and vivisects Rose's dog, Bran, a name easily conflated with the word 'man'. Symbolically, Bran was "like a child" (316) to Rose and a macabre warning to those women stepping outside of a prescribed role.

Rose discovered Bran with his body ripped open, bleeding but still alive and strapped to Lesquard's vivisection bench. Bran's brain was left exposed like a "lately hoed potato field" (318) and her 'child' had been to all accounts crucified in what Madame de Marcel would term "revenge for her outspokenness" (318). Rose pierced Bran's heart with the dissecting knife to provide an early release from pain. Lesquard chastised her actions, stating the dog would have lasted a few more days. In retaliation, she hurls the same blade that had stopped Bran's heart at her husband and it penetrates his hand. The blood from Bran's heart infects Lesquard with a rare form of blood poisoning that develops into erysipelas [77] and he temporarily loses his sight, and is left "scarcely human" and "cruelly distorted" (355). The blood of Bran's heart held science to account for its actions.

Bran was the originally the companion of Rose's beloved father, and was the sole link remaining to her heritage as her mother had died in childbirth. By discovered Bran stretched out and crucified on the vivisecting bench, depicts a form of the Catholicised Sacred Heart. The anti-vivisectionists consistently conflated images of religiosity with animals, especially dogs. Landseer's Newfoundland portrait was often used with the accompanying caption "would you die for me, I would die for you?" The image of Bran sacrificing his own life for Rose's independence, would likely have resonated with viewers of Landseer's images. Bran did not die in vain and his body accomplishes what Rose cannot: the infection caused by his blood is instrumental in Lesquard renouncing his vivisection interests. The infection claims Lesquard's sight but it is only when he is sightless, that he can view his wife for her true worth. Although at the end of the novel, the plot shifts blame from Lesquard to Rose, turning his failings, his cruelty to animals and hardness toward patients into her responsibility and she returns to nurse him back to health. Here Marryat articulates women's special role and it

[77] Erysipelas is a strand of blood poisoning which can produce fatal results if left untreated.

An Angel of Pity clearly present Rose's influence as the primary reason for Lesquard's change of heart.

CONCLUSION

Throughout this chapter, there is a trail of hearts that appear in endless combat against the mightier opponent of science, but with very few exceptions, there are positive outcomes for the heart. Cook, though heartbroken and emotionally battered, was saved from a life of neurological experimentation by romantic fiction. Like *Pamela's* imagination, it is cook's consumption of fiction that shields her own heart as she was left unawares of Benjulia's true motive. Collins clearly emphasised that working-class women were vulnerable to those better educated. Science treats cook harshly and Marryat may be attempting to inform her women readers of the long road they have yet to travel before they are recognised as worthy as men. By placing Mary as head of a benevolent home that cared for rescued animals, Marryat draws striking parallels between the two women. Mary sacrificed a life involved with scientific endeavour for love and marriage. In making this decision, Mary endured life experiences full of benevolence whereas Rose did the opposite and accomplished a life empty of love and cruelly lost her 'child.' Collins offers what appears at the outset as a diverse opposite characterisation of a scientific woman to that of Marryat but as the plot progresses, it appears that Maria Gallilee also abandoned her young heart through a painful love affair. Her own engagement with science delivers a sense of self-satisfaction to a certain extent and there are certain parallels that align her with Mary's contentment. Therefore, although these three very different women sacrifice heartfelt emotion at various times in their lives, Collins and Marryat show the true cost to their wellbeing via a chain of disastrous marriages. It is not until science becomes the secondary role in their lives, that their hearts are opened in various ways and that science finds a place to reside in their lives.

Although Cobbe provided a ‘portrait’ for Collins’s characterisation for his vivisector, her voice can be distinctly heard from the page. It is often her own thesis that provides the characterisation for Benjulia. Collins’s struggles to direct his own character but it appears Cobbe purely lent her voice more to the aesthetic qualities of Benjulia. By remaining faithful to his quest to construct a vivisector that was not inherently evil, Collins bestows Benjulia with a measure of humanity through this interaction with Zoe.

Collins and Marryat explain through their novels why physiology was singled out from all the sciences for special attention. Vivisection struck many Victorians as incredibly heartless and unfeeling but the current ran much deeper. For the activist sympathisers, animals had become emblematic of the heart and kindness to them was one of the highest expressions of the heart. Therefore, physiological torture of animals doubly assaulted the heart.

4: Vivisection, Hydrophobia and Maternal Nurturing

This chapter examines the relationship between vivisection and hydrophobia, alongside the role of maternal nurturing of the vivisector. Fictional vivisectors were often portrayed as rootless mature individuals who possessed no immediate family or notable heritage. This chapter delves into the vivisector's formative years to address the issue of an absence of birth mothers in anti-vivisection literature. By focusing on two largely neglected novels, Florence Fenwick Miller's *Lynton Abbott's Children* (1879) alongside Compton Reade's Who was then the Gentleman? (1885), this chapter explores if the lack of motherhood was instrumental in the path to an interest in vivisection. A secondary feature that accompanied parental loss in these novels was the inclination to cast the vivisector as suffering from cynophobia, an abnormal fear of the dog. This fear often manifested from the young vivisector witnessing his father's death as a result from an infected dog bite. Consequently, the child was orphaned and destined to be raised by an extended, and often unfamiliar family. This chapter probes into the inspiration that inspired anti-vivisection writers to interweave these two seemingly unrelated topics. As Laura Otis has deduced "poisons revealed the relations among bodily functions by selectively destroying them" (Membranes 44) and this chapter examines if writers used the hydrophobia virus as metaphoric skin to penetrate other societal concerns beyond that of vivisection itself. By exploring the idea that anti-vivisection writers used the virus as a "kind of mental scalpel" (Finn 198), this chapter examines whether the relatively safe space of the textual page empowered those individuals who felt impotent against the progress of scientific experimentation.

In 1876, the first issue of The Home Chronicler reproduced a letter authored by Cobbe that was originally published in The Daily Telegraph entitled "Humanity and Vivisection" (5). Cobbe implied that cruelty sets in long before the vivisector reaches maturity. She suggested that the hard nature of the physiologist could have begun with his

"researches in childhood" (5), and for those individuals who did not receive guidance, there is every possibility that their curiosity could flourish unchecked. This theme is picked up later in Leonard Graham's novella, *The Professor's Wife*, when the vivisectionist Sir Eric Grant explains his childhood years to his prospective wife Beatrice and father-in-law:

> I cannot remember my mother; my father was a physiologist, and lived mostly in his laboratory. My first recollections are of things I can't talk about to either of you. I used to help him when I was too young to know much of what I was doing. One day, when I was ten years old, there was an – accident, perhaps I should say. A dog bit my father. He died, and his scientific friends sent me to school and college. (36)

Graham addresses two fundamental issues common to anti-vivisection fiction: the loss of patriarchal nurturing through death alongside the ramifications of exploiting Nature's citizens. From Graham's passage, it would be fair to presume that Grant worked in his father's vivisection laboratory for some considerable time before reaching ten years of age. While Graham's account is read as a work of fiction, there is evidence that young children were employed as laboratory assistants. Claude Bernard attached his working laboratory to his home and clearly stated that to be a true vivisector "one must be brought up in laboratories and live in them to appreciate the full importance of the procedures of investigation" (15). In reading Grant and Bernard's comments together, it was likely that even as a young child, Grant could have been well-versed in the methods of the vivisection laboratory, and witnessed countless experiments on animals. Despite Bernard's comment, he did not share Grant's childhood experience of the laboratory. Initially, Bernard craved more of an artistic career as a playwright. In "A Grand Demonstration" taken from The Shambles of Science, the authors recall that the laboratory assistant was a "boy" (145). The two women were emphatic that their notes were an authentic representation of the laboratory and when reading them in conjunction with Bernard's quote, a trajectory can be traced through the real

life laboratories of London and Paris to Lewis Carroll's hypothesis that "successive generations of students, trained from their earliest years to the repression of all human sympathies, shall have developed a new and more hideous Frankenstein – a soulless being to whom science shall be all in all" (854). Grant's confession that he held no memory of his mother and that it was his father's "scientific friends" who despatched him to college in the absence of providing a foster home, insinuates that contact with the female sex was minimal during his developing years. No further information is provided regarding Grant's pastoral care. The first sentence of the passage opens with the death of his mother and ends with the loss of his father. His childhood experiences lie between these two deceased parental bodies. As Grant can hardly recollect his mother, there is every indication that she died when he was exceptionally young, possibly during childbirth. A reflective tone underpins the passage that suggests that had she survived, perhaps neither Grant nor his father would have naturally progressed to become vivisectors, especially as the young Grant was sent to school in France and Germany, a terrain associated with progressive vivisection. As Grant cannot "remember" his mother in any way, the passage indicates that his father failed to maintain any recollection of her for his young son, and there appears an absence of any relatives who may have assisted between the deaths of both parents. Whilst this is purely speculative, what is clear throughout the plot, is that Grant held a dread of being bitten by a dog. On numerous occasions, Graham introduces a non-rabid dog into the plot that produces a trauma induced fear in the mature Grant. In turn, the event hints at a perceived vulnerability of the vivisector, both fictional and in reality. Fictional vivisectors were rarely bitten by an animal and it appears that writers were more concerned with punctuating a metaphorical membrane than enacting physical harm. Hydrophobia rarely makes more than a brief appearance in the plot and it nearly always accompanies a domestic scenario.

Anti-vivisection novels rarely provide children with parents but, in turn, if the vivisector's wife remains a feature of the novel, it is exceptionally rare that the couple enjoy any offspring past infanthood. If the couple manage to produce a family, the plot usually sacrifices the children to a vague, unspecified illness at a young age. This loss of the child often coincides with the end of the marriage. Marryat's Rose Lesquard from An Angel of Pity refused to bear her husband's child once she discovered his secret vivisection laboratory. Blanche, from the epic anti-vivisection poem "The Lady of Greyston Grange" (1888) published in "The Playground" section of The Zoophilist, refused a suitor's marriage proposal when she recognised him as the vivisector of her childhood pet companion. Also, Sarah Grand's heroine, Beth, of The Beth Book discards her childless marriage upon the discovery that her husband was a vivisector, and Violet 'David' Lowther separated from her husband, who later died of a rabid dog bite, after witnessing his vivisection of a pregnant bitch in his study, shortly after which their young daughter, Vi, dies of an unnamed illness. Writers used the trope of motherhood to carve a special protective place for women in the anti-vivisection novel. If the child was fortunate to experience their formative years with one parent, it was common for writers to dismember the relationship: mothers died in childbirth and fathers succumbed to an infectious wound by an animal.

By injecting a fatal dog bite into the text, writers were presented with the indulgence of metaphorically allowing the animal and, in turn, the activist, to 'bite back' and 'wound' their perpetrator from the page. Writers appeared unconcerned with the medical implications of the disease and it is plausible that given other topics that co-habited the plot, writers used the virus as a metaphorical tool to 'punctuate' barriers and manufacture a new voice enabling them to engage with social issues in which they felt powerless, such as marriage, property and class: the topics providing a subtext to the plot. When read in this context, the hydrophobia virus adopted a malleable quality. The skin was designed by Nature as a barrier

to keep things out. It frames the body and provides a natural defence against unwanted visitors. Hydrophobia is invisible to the naked eye but by crossing human boundaries in penetrating the skin, it can be read as a variant of vivisection. The skin is the major organ of the body. It is self-regulating, self-lubricating and self-repairing, protects against the bacterial infections and is sensitive to touch, pressure, pain and temperature[78]. During the late-Victorian period, hydrophobia was recognised as a disease of the nervous system and its characteristics enabled activist writers to re-stamp the hysteria motif on to the vivisector as a strand of retribution for misdiagnosis of feminine wellbeing. The leading authority on the virus at the time was the distinguished veterinarian and editor of the Veterinary Journal, George Fleming. Fleming's foundational text Rabies and Hydrophobia (1872) became the standard work on the subject for both Victorian science professionals and lay readers. It is notable that Graham addresses the cause of death of Grant's father as a "dog bite" and does not specifically state if the animal was infected with a disease. The activist journals carried extracts from Fleming's text and reported the progress of Pasteur's researches. It was conceivable that writers held a basic knowledge of the virus but when considered that few activists had witnessed an infected dog, the topic incubated well within the curious mind. This unknown terrain afforded the anti-vivisection writers a certain licence to manipulate reality attached to plots because the public response was often to the idea of the disease rather than to the actual disease itself. Thus, hydrophobia, unlike the practice of vivisection, may have been more threatening as a metaphorical disease than an actual one. Activists did not exploit the perception that the virus was related to human madness but if an individual succumbed to an infected it wound, it was through experimental treatment undertaken abroad. During the late 1870s and through the 1880s, many of the anti-vivisection periodicals

[78] See *Collins Dictionary of Medicine: Medicine defined and explained.* Glasgow: HarperCollins Publishers.1992, 567

published articles decrying Pasteur's advancements over the anthrax virus. Although not referenced, it is heavily insinuated within the novels that those individuals who sought treatment and died, did so at the Pasteur clinic in Paris. By situating Pasteur's research within vivisection plots without any direct reference, it extended the potential of enacting literary trials of scientists, similar to those earlier of David Ferrier. As with the poetic contributions to the periodicals, many of the anti-vivisection writers used pseudonyms and for this reason, it has not always been possible to trace their identity and to determine if the interest in hydrophobia was gendered. It can be noted with conviction that, with very rare exceptions, fictional vivisectors with a fear of dogs, lost their mothers at a very early age, which could suggest that many of the writers that incorporated this plot line into their novels could have been women.

In the mid-1860s, hydrophobia was a metaphorical reflection of the 'self.' Victorians, like Charles Darwin, wrote about having 'rabid' feelings not least on matters of scientific controversy, and novelists such as George Eliot and Anthony Trollope had characters behaving like mad dogs. (Pemberton 7) During the 1870s, dogs were the subject of strict control and when muzzling legislation was introduced, the experiences of dogs could determine them as victims of official persecution. The Dogs Act (1871) and the Muzzling Act (1877)[79] were described by the Government as "an act to provide further protection against dogs" for society. Both Acts were legitimised near the 1876 Cruelty to Animals Act and clearly echo the restraining connotations that curtailed the freedom of women in the Contagious Diseases Acts.[80] As Bourke as suggested, in the furore of the Bill, "women were typically characterized as a particular kind of animal: female dogs or bitches" (What it is to be

[79] For further discussion on Rabies and hydrophobia, see Pemberton, esp chapter 3 for introduction of Dogs Act.

[80] Contagious Diseases Act was introduced with the intention of protecting members of the British Armed Forces from sexually transmitted diseases through prostitution.

Human 99). Victorians in general viewed diseased dogs as dangerous, unclean and their disease was a kind of pollution but despite these reservations, dogs remained the animal of choice for vivisection experimentation. At the time, hydrophobia was classed as a zymotic disease and, like syphilis, it spread easily by contact contagion. Similarly, the Contagious Diseases Act subjected women suspected of soliciting to compulsory checks for venereal disease with the possibility of confinement to a Lock Hospital. The police possessed the power to 'arrest' any dog that they considered exhibited the slightest suspicion of exhibiting the virus. Roaming curs, who prowled everywhere unchecked, were … issued with 'notices of confinement' and muzzling orders. (Pemberton 76) Although the Acts were repealed in the 1880s, the Lock Hospital was still a familiar place of professional occupation, and human experimentation, for the fictional vivisector.[81] Countless animals so identified as diseased were merely epileptic or unpleasant looking, and many women were incorrectly considered as prostitutes on similarly flimsy evidence. An editorial in the Liverpool Daily Courier expressed fear that the police would become 'rabid' with cruelty against any dog (Pemberton 74) and when viewed through a gendered lens, the judicial rights relating to the freedom of women and the dog appear, at best, tenuous. By 1897, public opinion was further inflamed when Government control regarding muzzling exempted sporting dogs but insisted the measures be applied to lap dogs. Many women enjoyed the company of these companion dogs and it is plausible that they identified with their pets in a way that mirrored the disregard, dissection and disposal they felt of their own rights by scientific practitioners. In Experiments on Animals (1927), H. G. Wells wrote a damning section on the 'careless women' who "easily interpreted as love" (7) toy-dogs who were the products of a ruthless breeding industry and charged the women of "aimless[ly] experimenting with life" (6). While

[81] For an example of the association of the practice of vivisection and the treatment of women in lock hospitals, see Grand, *The Beth Book* (1897) and MacDonald, *Paul Faber: Surgeon* (1878).

these women may have overcompensated their own predicament and 'mothered' their "pets" they were, in effect, "sustain[ing] the breeders and procurers of animals for 'petting'" (6) and it could be said that Government jurisdiction protected the animals from their 'careless' women owners. As discussed earlier, anti-vivisection writers often constructed the lap dog as the surrogate child in a barren or dysfunctional marriage. As Laura Brown has suggested "[t]he lady and the lapdog has a powerful literary resonance [that] carries a lasting imaginative vitality" (85). With the vivisection novels using these dogs as an emotional currency, it supports the hypothesis that many of the authors could have been women.

Fenwick Miller's *Lynton Abbott's Children* is a novel that focuses on the absence of motherhood throughout its plot, but its engagement with the vivisection controversy initially addresses the murderous attack on a supposedly rabid pet dog. The novel is unique in placing the practice of vivisection on unanaesthetised animals in the hands of a juvenile male, whereas the norm was for practitioners to be characterised as an accomplished suave professional, married to a wealthy, much younger, orphaned heiress. Marshall Abbott is seventeen years old, the third of Lynton Abbott's seven children and his scientific endeavours take place in a clandestine laboratory housed on his benefactor's estate. All the Abbott children were "pitchforked" by their father (3:56) into predestined roles prior to their birth, regardless of their sex, and Marshall was preordained to enter clerical life to mirror the path of his namesake and advocate, the Dean Marshall Abbott.[82] Marshall's vivisection interests clearly expose his disrespect for animals but his greatest fear appears to stem from gynophobia: a fear of women, which seems to be connected to the loss of his mother. Combining his distaste for both women and non-humans, particularly dogs, Marshall

[82] Fenwick Miller may have named her vivisector after Marshall Hall (1790-1857) as it was common for activist writers to adopt variants of the names of real-life physiologists. For further discussion on Hall, see Diana Manuel "Marshall Hall (1790-1857): Vivisection and the Development of Experiment Physiology in Nicholaas Rupke, *Vivisection in Historical Perspective*

performed an act of unspecified cruelty, possibly concerning one of the family pets, just after his Mother's passing, and this shrouded incident infiltrates the plot in various guises. Marshall's fear of the female sex is monitored through the fall-out and subsequent consequences that his pre-conceived, and ill-fitting, role brought to the lives of the women who shared his life. The sub-plot of the novel traces the human cost of engaging with the practice of vivisection alongside the consequences that ricochet from a lack of maternal nurturing, all of which appears to point toward the degeneration of Marshall's mental stability. *Lynton Abbott's Children* is narrated by the mature voice of Marshall's only sister, Henrietta, but by using a hybrid of weaker voices to shadow her story, it opens a space for Fenwick Miller to tease out Marshall's possible personality disorder that may be related to the loss of his mother. Against this splintered backdrop, Fenwick Miller interweaves late-Victorian topical discussions close to her own heart, such as women's emancipation and education, all of which either touch upon or are affected by, the practice of vivisection and its relationship to hydrophobia.

The indifference that Marshall displays to the sufferings experienced by the unanaesthetised animals during his own vivisection operations clearly mirrors his lack of emotional engagement with the women who inhabit his life. An early indication of Marshall's precarious emotional status are the rows of glass bottles holding preserved bodily specimens that adorn the entrance of his vivisection laboratory. (1:45) It is never specified if the examples are human or non-human in origin, but they are significant as indicators of Marshall's instability. The enforced restricted development of these bodily items prophetically foreshadows Marshall's emotional progression throughout the novel. The narrator states that Marshall took up residence with the Abbotts at fourteen years of age and this is the possible date that his laboratory became active. Marshall arrived at the Abbotts' home just after the death of his mother and it is fair to presume that he began collecting his

specimens at that time, as there is no account of them accompanying him from his ancestral home. Therefore, the redundant body parts stand witness to the commencement of his own ambiguous and stunted wellbeing. The development of Marshall's emotions had remained as tightly packed and sealed as the specimens that had long since stopped serving their normal function intended by Nature. Aside from the short time that Marshall spends with Henrietta in the company of the Marshalls, his formative experience of the female sex appears limited to that of his Aunt and sister, for whom he holds an undisguised contempt. The narrator states that shortly after Marshall's mother died giving birth to another son, Marshall "transgressed" an unspecified "law" that was "invested in [such] horror" (1:15) that Fenwick Miller declines to flesh out its true nature for the reader. A plausible explanation for the omission could have been that her readers may have felt repulsed by the idea of vivisection being performed by a minor. Any potential distaste born out of the idea of a youth vivisecting animals could have pushed her readers to turn away from *Lynton Abbott's Children* and, consequently withdraw support for the movement in general. An alternative solution could have been that the omission was intentional: the blank space being left for the reader to use their imagination to fill in the details because the author was not scientifically accomplished to furnish the plot. As Marshall matures, there are several indicators that suggest the incident was connected to an act of vivisection and he is swiftly characterised as the problematic child of the family. It is evident that he is emotionally and physically isolated within the bosom of his numerous siblings, at his adopted home and within his short marriage. These relationships are reliant in various ways for their successful development upon maternal nurturing. His birth mother was no longer a physical presence but her absence is clearly 'felt' in the dismembered relationship with her surrogate, which later translates into the psychological vivisection of the mother of Marshall's infant son, his young wife, Fanny. The entire Abbott family can be classed as motherless and its roots travel beyond the characters contained in the pages of the text. The

plot is contained to a single generation of the Abbott family as nearly all the siblings meet their deaths under mysterious circumstances and no one manages to produce a living heir. There is also an absence in the text of any back history relating to the family. Fenwick Miller's text itself appears to also lack in areas of procreation. In her autobiography, An Uncommon Girlhood (1884), Fenwick Miller explains the plot of *Lynton Abbott's Children* as being "purported to be the story of one motherless girl in a family of brothers." The text itself is symbolic of a dysfunctional parent. Fenwick Miller genders her text as feminine and appears regretful that she "never gave [the] child the help of [her] name, the prestige of [her] position to help it on in the world." Fenwick Miller's reasoning for this decision appears to have been based on the simple decision that she did not want to be "stamped as a novelist" (Chapter 30) but her 'motherless textual child' remains published to this date as an anonymous text and consequently, still awaiting the acknowledgement of a parent.

Vivisection, rabies and Marshall's potential mental instability collide at his makeshift laboratory when he cruelly dissects Henrietta's pet dog, Crisp, under the falsehood that it had shown "every symptom of hydrophobia" (1:95). The mature voice of Henrietta retrospectively recalls the incident:

> [he] took two great strides over the room, and he reached my open knife in an instant, he was back with its long blade bare and gleaming, and sheathed it to the very hilt in the dog's side. The sharp stab seemed to arouse Crisp from the stunning effect of his fall. He began to utter loud and piercing cries, and to writhe in agony. His poor eyes found me, presently, and seemed mutely reproachful and imploring ... he must have died soon: for the blood poured from the deep would ... but when he stretched himself out, and was silent and still upon my lap – silent forever more! – I have a vague remembrance of seeing Marshall, as through a mist, and far away, placidly wiping his hands upon a towel. (1: 83-84)

Marshall's 'great strides' immediately shift the tone of the dialogue between the brother and sister in that Henrietta has become subservient to her brother. There is no hint of incest anywhere within the plot, either between Marshall and Henrietta or any of the alternative siblings, but the passage is studded with connotations of control, governance and rule, with a clear allusion to suggestions of rape. The "bare and gleaming" weapon forced up to the "very hilt" of the victim's body force the reader to note the "arous[al]" of the victim, or potentially its effect on the assailant. It must be noted that at the time, Henrietta was one of the few females to grace Marshall's life and bearing in mind his lack of a tactile mother figure, he would likely have experience an unease with his sister. Crisp was the closest being Henrietta had to a sibling or even a physical being that could provide any level of unconditional love and support, outside of her immediate family, the very one that Marshall had been expelled from in earlier years.[83] By tearing away her one provision for emotional development, Marshall could have felt a gratification in denying another being the unconditional affection that he had been denied for so long. There was no prior reference in the plot that Crisp was infected with the rabies virus and its suggested threat appears instrumental solely as a response to ignite Marshall's degenerate nature. This particularly brutal, and what appears an unnecessary attack upon Crisp is an early instance that points to Marshall's sociopathic tendencies, especially when considered that a moment earlier the siblings had been amicably discussing anatomy and dissection without the slightest hint of animosity. It was only through the cold language of science that Marshall could engage in conversation with this sister and he experienced considerable difficulty in articulating outside of these parameters to another human being. It is, therefore, plausible that Marshall compensated for his perceived abandonment by both his mother's death and the family's ostracism, by forcing another his sister to experience an acute emotional loss instigated this

[83] For similar incident of the destruction of a pet dog, see Thomas Mann's short story "Tobias Mindernickel."

time by his hand. Due to its very nature, the vivisection laboratory would have housed an extensive collection of scalpels and knives, but it is Henrietta's own pocket-knife, an item that was hand-crafted by their father as a special gift and brought from home, that Marshall chose as the instrument to cause her psychological pain. Marshall legitimises the act of killing Crisp to his Aunt as one of necessity, and she consequently praised him for having saved the family from "untold horrors" (1: 90**),** a phrase that easily replicates the connotations of Marshall's earlier transgression that was "invested in horror", and a pattern begins to emerge of Marshall's tendency to instigate cruel acts when he felt personally threatened. By repetitively linking these acts of repulsion to the domestic sphere, Fenwick Miller subjectively suggests an agenda that the vivisector may be physically closer than her reader may recognise: he could be their own son, husband or brother, or someone likely in the process of being incubated nearby. Aunt Marshall was bestowed the role of foster mother but appeared to hold little in the way of any natural maternal instinct. Consistently, she is depicted as emotionally distant and physically absent at crucial times: presenting the scenario that Marshall was twice denied a mother. She appeared to not hold the moral fibre or parental inclination to punish her nephew for his needlessly cruel attack, but there also appears no intervention of her husband, Dean Marshall: Fenwick Miller casts the Aunt as shouldering the entire responsibility of parenting. Instead of reprimanding Marshall for the nature of the attack on Crisp, she chastised Henrietta for not exhibiting "moderation" in her "grief for an animal" and for "indulging" in a "violent rage against [her] brother." Her grief, Aunt Marshall concludes, was her "punishment" for not controlling her "ungovernable temper" over a mere "trifle" (1: 94). Fenwick Miller appears to be informing the reader, through the voice of the mature Henrietta, that the child should be punished for stepping outside of the pubescent sphere and not acting in accordance of that expected of a young woman: Henrietta's grief at the death of her best friend was inconsequential and was left largely

unacknowledged. To further inflame the trauma, Aunt Marshall suggested that the ten-year old Henrietta, should thank Marshall for his heroic deed in saving the family from impending doom, and wish him all the best for his impending journey to college. Marshall has thus been absolved from moral and ethical responsibility by the sole parental authority present in his life. The unnamed passion that was instrumental in banishing him from the ancestral home can now run unchecked. Aunt Marshall excused her nephew's surly, impersonal and, at times, vindictive character as a bi-product of his intellectual curiosity, and her justification of his 'heroism' relegated him to the role of the victor, albeit in the guise of a sadistic persecutor of all things benevolent. In declining to punish Marshall for his spiteful tendencies toward others, his Aunt perverts the normal route of maternal love and regardless of the personal cost, both to Marshall and his victims, she is drawing the template for the stereotypical fictional vivisector portrayed in much of anti-vivisection propaganda. In turn, Marshall would not have learnt any facet of morality from puberty and would have likely moved on to vivisection as a natural progression of scientific interest, without realising the ethical implications embedded within the practice. Consequently, in being left unaccounted for over his actions, Marshal had triumphed Henrietta, his Aunt, the vivisection act (the laboratory appeared unlicensed) and manipulated the characteristics of hydrophobia. Marshall had even annulled the earlier punishment of being banned from the ancestral home for his unspecified horror. His Aunt's willingness, or inability, to provide any form of either maternal comfort for her niece or castigation for her nephew calls into question her role in the plot. As a nurturing figure, she provides next to nothing in way of maternal guidance or unconditional love but as a mentor, she appears to perform the same role as the surrogate fathers of the vivisection laboratory: her own emotional shortcomings likely contributed to Marshall's hardening of the heart, a necessary attribute of any budding vivisector. Fenwick Miller is showing here that perhaps it is not just the physical presence of being in a vivisection

laboratory that corrupts the moral sensibilities of the young, male child that leads on to the path of vivisection. *Lynton Abbott's Children* suggests that a woman's benevolent interjection, no matter what her familial role, should not be cast aside by science.

Human isolation is a strong thread running throughout Fenwick Miller's novel. Marshall's laboratory was segregated from the rest of the estate and represents his physical and psychological placing within the entire Abbott family structure. The laboratory stood symbolically as a motif of the deception attached to the activists' perception of the vivisector: it presented one face while it hid another. It was erected in a desolated area but once one passed inside the "large outhouse," that presented a respectable nondescript frontage, its real occupation could only be detected through a secret entrance. The narrator states that the outhouse had been specifically "appropriated" for Marshall's "private study" (1: 73), namely performing "chemical experiments" (3: 30), which differ from vivisection operations but readers familiar with anti-vivisection plots would likely be aware that the word 'chemical' easily translated in fictional accounts of the laboratory to an alternative reading of 'vivisection.' The phrase carries a heavy connotation that the space was "appropriated" with foster parent consent. Chillingly it was Aunt Marshall who was instrumental in arranging the fateful meeting between the two siblings in advising her niece that the route to the outhouse was "through the kitchen" (1: 70). An astute reader could have made the connection between her phrase and Claude Bernard's advice in his foundational text An Introduction to the Study of Medicine that the fruits of vivisection are only obtainable by passing through the "ghastly kitchen" to arrive at the "dazzling light" of scientific success. (15)[84] When Henrietta entered the laboratory, she is shocked to discover a "chamber of horrors" (1: 77-78), a phrase that imaginatively draws striking parallels with Cobbe's plea in her pamphlet "Light in Dark

[84] Claude Bernard's own vivisection laboratory was only accessible by passing through the domestic kitchen.

Places" for the vivisection laboratory be recognised as a "torture chamber" (3). The phrase continuously pricks at the reader's conscious to recollect Marshall's earlier transgression of "untold horrors" and the possibility that they are about to return to the page at any moment. By injecting a fresh "chamber of horrors" into the historic "untold horrors", the plot hints that Marshall's vivisection interest may have been active from before the age of fourteen, suggesting a time prior to his moving to the Abbotts, and after the loss of his mother. This timeline implies that by the time Marshall killed Crisp, he was, like the young Eric Grant, a seasoned vivisector with considerable active service in causing acute physical and psychological pain to others. During this time, Marshall and Grant were motherless and neither plot furnishes details of any form of a domestic life for the two young charges. Whilst this connection does not dilute the measure of cruelty dealt with to Henrietta, it does suggest that Marshall's repressed, and explosive, emotions were left largely unaddressed by his father, and then again neglected to by his foster mother, in whose company they incubated at will.

Marshall's unprovoked act upon Crisp supports the argument for his mental instability to be recognised, and it is a marker for his mature relationship with the "half-imbecile" (3: 124) young Fanny, who becomes his long-suffering wife. Aunt Marshall identifies with Marshall's cruelty through her own lack of innate anxiety and in lacking any specific palpable stimulation between either of her charges, who are touch-deprived, she appears similarly imbued with a sociopathic nature. A familiar scenario for anti-vivisection novels was for the vivisector's wife to discover her husband's laboratory but with *Lynton Abbott's* Children, Fenwick Miller placed this traumatic episode in the hands of a ten-year old child and her cherished pet under the supposed guise of maternal protection. Aunt Marshall instructed Henrietta to visit the outhouse and hand over her pen-knife to Marshall. It is plausible that she was aware of the true nature attached to the building and shared in the same

sadistic pleasure as her nephew in asserting a perverse dominance. Prior to the visit, Henrietta had proudly exhibited each blade to her Aunt that made up the collection but it was not until the dissecting blade was discussed that Aunt Marshall entertained the conversation with any enthusiasm. Although aware of its "intrinsic value" (1:62) to her niece, she demanded that it be handed to her brother because "Marshall will like it so much more [with the dissection blade] as he takes a great interest in that sort of study" (1: 63). While this comment does not confirm that the Aunt is aware of Marshall's vivisection practice, it does strongly suggest that Marshall is permitted to dissect some form of being with her full consent, whether this is living beings or plants. Henrietta had visited Marshall's outhouse to present him with her cherished volume of *Ellis's Anatomy* as their Aunt considered it was an "utterly useless" object "for a girl" (1.68). At the time, Henrietta is undergoing her transformation from the family tomboy to the vestige of a young lady. Fenwick Miller here suggests that a "boyhood vice" (3:24) left unchecked can easily progress to its natural course to a full vivisection practice. At this stage in the plot, the Aunt has inhabited the role usually adopted in alternative vivisection novels by the fictional scientific fathers who support, and encourage, their male offspring in the vivisection laboratory to become a formidable vision of their own person.

Once inside the laboratory, Henrietta managed to adjust her sight to the dark and very quickly identified a collection of mutilated frogs and an "unfortunate dog" (1: 79) who was "writhing ... horribly" mid-operation" (1: 78-80), amongst many other animals suffering in various stages of a vivisection experiment. All the animals had been abandoned mid-operation to endure extensive suffering until release likely arrived through a painful and protracted death that could take days to arrive or until Marshall may, or may not, have returned to resume work. Fenwick Miller never specifies a return to the laboratory, which adds a layer of tension to the plot but also suggests that Marshall experienced some form of

delight in what can only be described as crucifying other beings. In drawing back the protective layer of sackcloth that divided the true purpose of the building, Crisp bit into Marshall's conscious as effectively as an infected dog pierces human skin and, for an instant, Marshall became as exposed and vulnerable as his vivisected specimens. Fleming suggested that 'diseased' dogs infected with the rabies virus may 'turn' if induced to shock and adds that this transformation can be instantaneous, ferocious and untreatable. (201) Marshall exhibits all of Fleming's suggestions that characterise the rabid dog. Crisp's natural action had instilled an irrational fear in Marshall and like the actions of the rabid animal, he resents the personal intrusion and he becomes territorial, and consequently, irrational. As this anxiety escalated, Marshall adopted animalistic traits. He "growl[ed]" at Henrietta and his "eyes flamed far away" like the "white heat of burning metal" (1: 80-1) easily representing the "two terrible globes of fire" (229) of Cobbe's essay "Mad Dog." Marshall adopted bestial facial expressions to such an extent that Henrietta thought he looked "scarcely human" (1: 46) and was astonished that his "brows lowered" much more than she thought "physically possible" (1: 47) in any human. Eyebrows are important in the facilitative function of communication[85] because they can send assorted non-verbal language signals but for Marshall, who was an individual who experienced a great difficulty in mastering the simplest forms of articulation to anyone, they act as sense indicators. Charles Darwin stated in The Expressions of the Emotions in Man and Animals (1872) that eyebrows may be "seen to assume an oblique position in persons suffering from deep dejection or anxiety" (165). The wrath responsible for contorting Marshall's eyebrows meant they performed the same function as the sackcloth: they hid the inner recesses of Marshall's disturbed mind. Robert Louis Stevenson's short story Strange Case of Dr Jekyll and Mr Hyde (1886) dealt specifically with a split

[85] For useful information on "The Role of Eyebrows in face recognition" see Javid Sadr, Izzat Jarudi and Pawan Sinha. 285-193.

personality: a split between the socially and morally responsible. Jekyll is the epitome of middle-class propriety, while Hyde is a monstrous and 'ape-like' He is animalistic and manic, echoing traits that Marshall exhibits. Colin Bloom suggests that Stevenson "summed up the pseudo-science of the popular imagination as well as the confused state of the emergent psychological sciences which were 'treating' schizophrenic patients" (100). Like Marshall, Jekyll's schizoid nature shows clear signs of moral degeneracy. Stevenson's narrator says that "the man trampled calmly over the child's body and left her screaming on the ground." (99) Marshall adopts a striking parallel when he callously removed his sister from the scene by the laboratory after Crisp's death. He roughly "lifted [Henrietta] right off the ground and placed her, still grasping [her] dead pet tightly, on the ground outside of his door" (1:84). He then calmly walked away while wiping the offending knife on a towel.

Henrietta refused to leave the laboratory and the animals to their impending fate. Although only a ten-year old child, she acted like a "martyr" (1: 80) and attempted to assert the authority that their Aunt appeared to lack. She insisted that Marshall destroy the specimens but he appeared unable or unwilling, to differentiate between his laboratory victims and his sister. His rebuttal was non-negotiable and he threatened to either murder Henrietta or lock her in the laboratory for an indefinite period with the vivisected beings. Marshall was aware that Henrietta had witnessed "that he went out [of the estate] without his Aunt's or Dean's knowledge, and went somewhere so secret that he clambered over a wall to prevent his going out being discovered" (1: 30). Henrietta had arrived at the laboratory the instant he chose to return to the estate following one of these expeditions. This is the sole instance in the plot where Marshall acknowledges any semblance of parental authority, and it appears that while his Aunt's authority is non-existent within her domain, her influence is only felt, and respected, by Marshall outside of the boundary of the Abbott estate. Again, Fenwick Miller fails to elaborate on any reasoning for Marshall's absconding, and this

incident is one of many plot holes throughout the text. The omission could be read as a literary tactic to enforce the reader to focus on Marshall's potential violent outburst or alternatively, it could be evidence of a redundant plot. Regardless of Fenwick Miller's intentions, it is Henrietta's refusal to join in to a pledge of secrecy with Marshall regarding his absconding that seals Crisp's fate, not her discovery of his vivisection laboratory.

The emphasis placed upon Crisp exhibiting "every" trait of the virus appears at odds with Fenwick Miller's own medical knowledge. A decade prior to the publication of Lynton *Abbott's Children*, Fenwick Miller practised as a midwife and trained under the medical pioneer Doctor Sophia Jex-Blake.[86] Harriet Ritvo claimed that few Victorian doctors had ever seen rabies [and] even fewer were able to recognise a case (170); and it is not proved possible to detect if Fenwick Miller had herself witnessed any first-hand experience of the virus. What is known is that her medical career focused upon working-class patients, often in the poverty-stricken parts of London. These areas often held an awareness, or fear, of the rabid dog and the recognised human form of hydrophobia. 'Sightings' of infected dogs were frequently documented in the local press. By not providing a definitive explanation of the virus, Fenwick Miller may have been playing to her reader's supposed ignorance with the intention of enhancing the sensational element of the plot or highlighting the shortcomings of Marshall himself for her better-informed readers. The very nature of the virus transfers easily to the shape-shifting and malleable nature of Marshall's instability throughout *Lynton Abbott's* Children and offers an insight of the interests and awareness of specific medical concerns associated with Fenwick Miller's readership. Although Crisp is not infected with the rabies virus, the fear he incubated in Marshall was so extreme that it could be linked to a form of cynophobia.

[86] Sophia Jex-Blake (1840-1912) was an English physician, teacher and feminist who led a campaign to secure medical training for women.

The attack upon Crisp and the Aunt's apparent ambivalent attitude to the incident provides a tension within the plot. Thereafter, each time Henrietta and Marshall cross paths, although the incident is never mentioned, it haunts the reader's memory and there is a constant allusion that it will rise to the surface. During a gathering in the family drawing room, Henrietta was struggling to engage with her Aunt's suggested reading material and as she glanced across the room, Henrietta deduced that Marshall was reading a pamphlet with a yellow cover. She is visibly struck by his enthused and enlivened composure, which appeared out of character with his usual composure. As she approached him, Henrietta became aware that Marshall was becoming overly secretive of the pamphlet he was reading and noted that he had become so animated that his eyes were "as far back as his ears" (1: 59) like an "excited animal" (1: 60). As Henrietta reached her brother's side, her shadow fell across the pamphlet and he immediately grasped the thin "yellow-covered pamphlet" and swiftly hid it within a "divinity volume" that he then, in turn, smothered with a "loosely-spread handkerchief" (1: 61). Henrietta observed that his hand "twitched with excitement" beneath the cloth. The involuntary movement of his hand reminded her of the "tremors" shown by the vivisected animals she had discovered earlier that were fastened to Marshall's laboratory benches from his childhood vivisection laboratory (1: 62). His heightened reaction presents clear connotations of titillation and an arousing of sexual stimulation that could feed into the imagination of those readers not directly concerned with the anti-vivisection cause. Coral Lansbury has paralleled the similarities of pleasure associated with vivisection experimentation and pornography, specifically in relation to the administration of pain, and the reader's imagination could quite easily fill in the blank page, and Marshall's inclinations, under the handkerchief. Marshall's response to the pamphlet speaks of the excitement of engaging in something that is forbidden, especially when it is remembered that Marshall, who was still a minor in the Abbott home, was in possession of potentially dubious reading matter

within proximity to the entire family, including Henrietta, a child younger than himself. Even though the reader can creatively inspire a vision of the hidden text, it can only realistically be 'read' through the physical reactions of Marshall and any interpretation provided by Henrietta as narrator: who at the time was a ten-year old child. The item is referred to ambiguously as a book and a pamphlet, which adds another layer to its intriguing nature. Again, this could point to another instance where Fenwick Miller is unconfident in expressing definitive details and may feel the reader's imagination better qualified to contribute. At the time of authoring *Lynton Abbott's Children,* Fenwick Miller was a prolific essay writer and would have possessed a heightened understanding of publication technicalities. Although the actual subject matter is never identified, her noting of the colour yellow held a strong significance for the Victorians and as mentioned earlier, it is a detail that would likely have not gone unnoticed by her readers[87]. At the time, yellow held perceived associations with degeneracy, wasting away, sickliness and sexual innuendo. It was the defining colour of the period and was often associated with the writers of the fin de siècle. The publication date of Lynton *Abbott's Children* predates Charlotte Perkins Gilman's popular psychological short story The Yellow Wallpaper (1892) and many of the so-called French novels that were bound in yellow paper to warn browsers of their racy contents.[88] However, it was common for anti-vivisection and hydrophobia pamphlets to be published on yellow-tinged buff paper. K Codell Carter suggests that at the time that "some physicians connected hydrophobia with hysteria either because of symptomatic similarities or because both diseases seemed to involve sexual abnormalities" and further, suggests that "several writers attributed rabies either to inadequate sexual release among ... men" (70). For these reasons, it cannot be discounted that Marshall could have been reading an illustrated anti-vivisection essay or periodical as many of these

[87] See Oscar Wilde *The Picture of Dorian Grey* (1891). The 'yellow book' is a major corrupting influence on Dorian.

[88] For example, see *The Yellow Room* (1891) published anonymously that was a classic Victorian erotic novel containing graphic sexual descriptions and themes.

publications also carried accounts of hydrophobia. When recalling Aunt Marshall's earlier instruction to Henrietta outlining the route to Marshall's laboratory, it is plausible to suggest that vivisection texts were housed in the Abbott family library, with the authority of their Aunt, and this would explain her readiness in accepting the rabies diagnosis of Crisp, and of her unconcerned nature relating to Marshall's scientific 'activities.' It is never specified if Marshall's reading matter was a pro or anti-vivisection pamphlet but as one side of the debate sourced their articles from their opponent's texts, it was likely a reflexive account was published in any text Marshall had selected. Either way, Marshall's potential reading of such a topic does present a conundrum for the anti-vivisection writers. If the lady of the home readily invited graphically illustrated texts into her household on the pretext of assisting the movement and if this literature held images depicting the "horrors of vivisection", Marshall's 'engagement' with the text clearly exhibits the difficulty of regulating such reading matter within family drawing rooms. More importantly, it exhibits how easily it can influence the minds of minors as to the 'joys' of vivisection. As Susan Sontag suggests "sentimentality is entirely compatible with a taste for brutality" (46) and when reading the dilemma in this context, Marshall's family engagement could have been responsible for fuelling his passions at the very site that was supposed to act as a redemptive haven. Although many anti-vivisection writers held no known first-hand scientific knowledge, their descriptions of the experiments were presented rhetorically and designed with the sole intention to ignite the imagination. For the untrained scientific mind, this imagination held the possibility of ricocheting in a variety of directions, often for self-gratification. When viewing these activist tracts through a domestic lens, Fenwick Miler presents the possibility of transferring Cobbe's essay "Light in Dark Places" with its numerous illustrations of dogs "writhing … horribly" and strapped down to the vivisectors bench, and innocently situating it in the Abbott's drawing room where in the hands of a teenage boy under the guidance of a foster mother, he

learnt how to ply his trade from the safety of his own home. Many vivisection novels highlight the endless packets of vivisection leaflets that are frequently delivered to the home. Graham makes many references to a 'Mrs Williamson' distributing activist literature at the homes of the upper-classes, the Grants included. Much of anti-vivisection literature rested on the threat of the unknown vivisector, who could be lurking in any familial drawing room. Fenwick Miller recasts this dilemma and presents a scarier potential scenario: perhaps it is the woman of the house herself who incubates the vivisector in the bosom of her home. This potentiality could not be contained to a lack of nurturing as the literature could inhabit an identical role once it had entered the inner confines of any household.

The disruptive influence of fostering a child within a scientific community is also addressed by Marryat in An Angel of Pity. After the death of his parents, the young Quinton Lesquard was dispatched to live with Madame la Comtesse de Marcel in the Paris, conveniently one of the most progressive vivisection sites at the time. Madame de Marcel took great pains to introduce her charge to the best physiological laboratories at home and in Germany; again, another renowned site of advanced vivisection. Marryat clearly insinuates that it was Madame de Marcel's guidance that set Lesquard on the path to becoming one of the century's most revered and callous vivisectors. Graham's vivisector was sent to reside with his "father's scientific friends" and as no further explanation is provided, it is unclear if this included any form of a foster 'mother'. What is clear from the accounts of Marshall and Lesquard, is that in their formative years, both young men were provided with a strand of nurturing that endorsed, or ignored, the callous mistreatment and disrespect of others' pain. As women writers, Fenwick Miller, Marryat and Colmore, all depict women as instigators of facilitating their charges into a lifelong fascination with vivisection. Once their passion is known, their patrons appear to even encourage their interest. This image is very much at odds with the public face of the anti-vivisection movement, where hordes of 'hysterical' women

were considered, especially by the more vocal science professionals, to swell the ranks of the movement to save mankind from the perils of the callous vivisector. It has not been possible to trace any direct involvement with the anti-vivisection periodicals and the writings of Fenwick Miller and Marryat. In 1909, Colmore contributed an article to Lind-af-Hageby's The Anti-Vivisection Review entitled "Cranks" (268-269) defending the right of individuals to follow their chosen path, in this case, the activist cause. Anti-vivisection plots usually presented the vivisector as rootless and being introduced into the plot as a heartless individual without any hereditary explanation for his callous nature. Fenwick Miller, Marryat and Colmore bravely break away from this tradition and present their vivisectors as the product of foster mothers with similar sadistic tendencies as their adopted progenies.

After the passing of the 1876 Cruelty to Animals Act, vivisection laboratories were required to carry the appropriate licence for specific operations. Madame de Marcel held the opinion that science professionals were unanswerable to the law in such matters and were "beings [not] to be interfered with" (215). Her comments suggest that the laboratory that trained the young Lesquard did not adhere to a strict discipline, namely in the administration of pain relief to those undergoing vivisection operations. Marshall's home-based laboratory was operational after the introduction of the Act and unless it was registered in the name of the Dean, it would have been unregulated and consequently, illegal, which meant that not only did his foster family openly support his practice of vivisection, they also did so by disrespecting the law. It would have been unlikely that a licence would have been offered to a minor.

Aunt Marshall and Madame de Marcel were united in exhibiting a common distaste for younger female members of their extended families. When Lesquard's new bride expresses a concern at his continued absence, Madame de Marcel takes a conceited pleasure in revealing to Rose that her husband was a frequent visitor of the *"Laboratoire de*

Pathologie" where he discussed "scientific experiments" (216) with other leading scientific figures of the day. Being acutely mindful, and resentful, of Rose's extensive scientific education, Madame de Marcel revealed this information fully aware that Rose would instantly recognise the true nature of the institution. Likewise, Aunt Marshall was instrumental in introducing the practice of vivisection into Henrietta's life. Madame de Marcel and Aunt Marshall were both products of the upper echelons of society, but Fenwick Miller and Marryat chose working-class women as wives for their vivisectors.

PSYCHOLOGICAL VIVISECTION AND MOTHERHOOD

Shortly after the Crisp incident, Marshall conveniently departs from the Abbott's estate to commence his formal education and returns a few years later as the Reverend Marshall with his young wife named Fanny. The narrator places great emphasis on Fanny's working-class background, her lack of education and social graces. Although the entire Abbott family were aware of Marshall's inherent cruelty to others, everyone appeared more concerned about Fanny's ability to conduct herself appropriately at the dining table, and she became ostracised from the Abbott's familial life through her lack of social skills alone, which appears harsh, spiteful and a further incident to support Marshall's dominant nature. It is hinted that the male members of the Abbott clan felt Fanny tricked Marshall into marriage and not long after their union, their "infant son die[d] three days after its birth" (3: 173). At this stage, Henrietta suspects Marshall is cruelly mistreating his wife. After the loss of their son, Fanny began dramatically "fading away" (3:192), both physically and emotionally becoming unable to articulate herself in the simplest of matters. Family members and neighbours were denied her access and she never met "a soul" (3: 186). Marshall excused her continued absence as her "not [being] fit to be seen" (3: 173) and he repetitively insinuated that she was a failed mother and a "half-imbecile" (3: 193). Unbeknown to Marshall, Fanny had confided to Henrietta that she knew Marshall conspired to "make her silly" (3: 188) and it is not long

before she yearns for death as a form of release from the "long seclusion and cruelty" (3: 55) enforced by her husband. To appease Marshall and to compensate for her perceived maternal failure, Fanny willingly adopted the role of the "poor creature" (3: 210) of the experimental specimen of Marshall's childhood passion and in the absence of placing her in a formal laboratory, he confined Fanny to the marital bedroom where he re-engaged in his "boyhood vice" (3: 210). Her isolation is so brutal that she forgot where own mother lived and Marshall sets in motion a chain of lost mothers. In a perverse form of sadistic retribution, Marshall appeared to completely fracture the nurturing power attached to any woman that crossed his path. He willingly punished Fanny for the mother he lost through a sibling's childbirth as retribution for the death of their infant son, which in retrospect may have matured to become the image of his father and exhibited identical traits of cruelty, especially as Fanny died just after the incident, and would have left the child devoid of maternal guidance.

WHO WAS THEN THE GENTLEMAN?

The plot of Compton Reade's Who was then the Gentleman? opens with the birth of two babies born on the same day to socially opposed mothers. Neither child is nursed by their biological mother: one is wet-nursed by a foster mother and the other received the milk of the "favourite Alderney cow" (25). Adhering to the Victorian law that states children born in wedlock fell under the legal property of their father, the decision to separate the babies from their biological mothers was enforced by Sir Robert Marmyon, the father to one of the children. Lady Marmyon is considered by her husband to be "the most fragile of mortals, and had nothing to give" (4) their first-born child by way of maternal nursing. Her husband's assumption as to Lady Marmyon's ability to raise her child appears to have focused on her capability to nurse the child. Any other facet of nurturing was ignored along with her own desire to nurse her first-born child. Consequently, Sir Robert sets to bargain with John Hodge, a labourer from his estate and father to the other child, to secure the services of his

wife Martha as wet-nurse for the "embryo baronet" (22). Hodge's refusal to sell his own child's "birth-right" (6) is over-ruled through the intervention of Nurse Pratling who coerces Martha to accept the Marmyon Arms Public House as payment for wet-nursing. To differentiate between the almost identical babies, the nurse ties a "gold cord" (18) around Master Marmyon's leg. Martha switches the cord to ensure that she nursed her own child while the surrogate baby is farmed out to Widow Gipps. After weaning has finished, the babies were to be returned to their birth mothers but Martha's swapping of the cord ensured that her child inhabited the aristocratic position destined for the other child. For twenty-two years Plantagenet 'Planny' Marmyon and Robert Hodges grew up without knowing their biological mothers. Eighteen months after the arrival of the babies, Lady Marmyon gave birth in Italy to a second son, named Errol, and this time she was "obedient" (24) and farmed the child out to an Italian peasant without any perceived emotional loss. Errol read chemistry at Oxford and during his studies, he developed an avid interest in vivisection practices. While Planny lay ill, Errol injected him with a strand of hydrophobia in a bid to secure the inheritance but is thwarted by Robert. Fearing that her natural child is near death, Martha confessed to swapping the babies, but Robert rejected his birth-right. Lady Marmyon displays no maternal inclinations toward either Robert or Planny and in the absence of a suitable heir, her favoured child, Errol, inherited the estate.

Sir Robert's dismisses his wife's natural ability to nurse their first-born child on the assumption that "[p]eople of her rank in life … will hardly be equal to the duties of a mother … of a mother to our boy" (2). By italicising the word '*mother'*, Reade insinuates that Lady Marmyon's failing is likely linked to providing "lacteal fluid" (4), to the child, obliterating the full spectrum of the nurturing bond. Lady Marmyon's fragility has little to do with her physicality. Whilst her societal position demanded consistent decorum in all matters, Lady Marmyon confessed to her physician, "Sir Marshall Midwinter – 'The Queen's doctor'" (2)

that losing her child had left her feeling "suicidal" (25) and she visibly "frett[ed] and fum[ed]" (27) that "in two or three days [she] shan't care to see him at all" (24). Her insight proves to be prophetic as the plot progresses but her husband and physician consistently ignore her plight, and she was denied any access to her child. Reade takes care to emphasise that from the moment of birth, Lady Marmyon felt an intense, immediate natural maternal love for her first-born child. With the birth of her second son, Errol, the novel pays minimum attention to his arrival and Lady Marmyon handed the child to an Italian wet-nurse (Errol was born abroad) with a resigned acceptance, but it was this child that matured to relish cruelty, was innately deceitful and held a "morbid delight in infliction and witnessing agony" (146). Fanny Abbott and Lady Marmyon were both considered unfit to carry out the role designated for them by Nature by their emotionally bankrupt husbands, but both women were devastated by the loss of their child from the birthing bed. By removing his child from its natural habitat, Sir Robert performs a callous vivisection of the maternal bond. Lady Marmyon later over-compensates for this loss in her relationship with her second son, the vivisector, Errol, whose sadistic tendencies she later excused by him becoming seduced by a "revolting and cruel" (308) mentor who corrupted her "poor boy" (308). However, Lembic, the university mentor and Errol

> [b]oth relished cruelty, and were endowed with that extra lust which impelled them to enjoy their bent to the utmost. Both were innately deceitful, and intensely fond of money – a characteristic by no means inconsistent with that sanguinary spirit which takes a morbid delight in inflicting and witnessing agony. Lastly, both were at the heart devil-worshippers, idolaters of wickedness, albeit in regard of morality, Dr Lembic had always preserved his reputation … his … pleasure was the low moan of a gagged dog as the knife first laid bare its quivering flesh. He cherished an ambition, however, of yet keener gratification, when he should be able – he knew not how – to

> dissect little by little, and without anaesthetics, some member of the human species. (146)

Despite the above portrait, Lady Marmyon frequently praised the attributes of the "beautiful disposition of her second son" (138) fully aware of his penchant for cruelty but it is her first-born child, now called Robert Hodge, that is raised by the "Widow Gipps" who "exhibited a genuine interest in the boy that she had raised by hand" and who Robert felt "intuitively … that she loved him like a son" (50). Robert matured into a benevolent socialist, who became symbolic of the working-class plight throughout the plot. The other child, Planny Marmyon that was returned to Lady Marmyon after the weaning period was the natural offspring of Martha Hodge, although this information was only known to Martha at the time. Planny's biological mother did not interfere with his new life as an aristocrat but she was a constant presence and consequently, it is unsurprising that he carried the anti-vivisection argument throughout Reade's novel.

At the time of the birth, Robert Marmyon and Plantagenet Hodge were almost identical in appearance, but as they matured into grown men, they became markedly different. By using a gold thread, as opposed to cotton, the cord held connotations associated to that of a precious metal: the bond would not tarnish or disintegrate, mimicking the function of the natural umbilical cord. It also suggested that the object, namely the child that bore the cord, was of the highest value, and it must be noted that the child who wore the cord last, became the anti-vivisection voice of the novel. As a birthing mother, Lady Marmyon received superior attention in contrast to the other women who worked on her estate. She was attended to during the birth by the Queen's physician and ordered bed rest for some considerable time. In contrast, Martha's child was welcomed into the world alone, and she was expected to nurse another woman's child while the needs of her own child were met by

the ‘favourite’ Marmyon cow. Martha also resumed work immediately. Despite these societal contrasts, Martha’s voice was stronger when it came to protecting the maternal bond for her offspring. Martha overruled her husband, who had initially refused Sir Robert’s offer to swap the feeding for the babies. In doing so, Martha nursed her own child, secured him a place to an aristocratic title and received the public house, The Marmyon Arms, as payment. In contrast, Lady Marmyon unknowingly received another woman’s child and then rejected her biological son when the swap was revealed. In constructing her own cord for the one lost out of fabric, a material associated with weaving, Martha can reverse Sir Robert’s fracturing of the umbilical cord and is instrumental in weaving together the fabric of the plot. Martha shows that in some instances, even if the child and mother are separated, there is a spiritual connection and love that is often difficult to articulate or understand.

Errol Marmyon had no need of a substitute umbilical cord because, like Marshall Abbott, he was an isolated and favoured child. Errol could be read as the matured version of Marshall Abbott. Despite being alone within a large family, both Errol and Marshall became the indulged child of a failing mother figure but the most disturbing feature that conjoins these two young men was their compunction to vivisect the family pet, of which neither were reprimanded. In a letter solely addressed to his mother, Errol flippantly requested that she despatch by train to Oxford his “old setter dog, Flo” (69) to use in a vivisection experiment. Due to the satiric nature of Errol’s letter, it is worth quoting the request at length. Errol is explaining to his mother how Dr Lembic was the most generous of teachers:

> He never spares his pocket in order to secure suitable subjects, and only yesterday paid three sovereigns for a retriever, who was used up in the course of a few hours, owing to an unfortunately slip of the knife, which entered a vital part. I was really

> very sorry for poor Lembic, as this dog ought to have lasted a series of experiments, and, with luck and economy, might have lived a week. It was partly my fault too, I think, in neglecting to hand Lembic the proper instrument at the right moment, so – to make up for his loss – I have promised him my old setter dog, Flo, and I will get you to send her off by train to-morrow. She is tough enough, and besides, as she knows me and is fond of me, I shall be able to keep her quiet; for, in spite of the straps, the animals will occasionally injure themselves in their writhings. Flo will make a capital subject, and I shall heartily enjoy studying the internal mechanism of the pet of my schoolboy days. I am glad to say here is no humanitarian nonsense about Lembic. He entirely dispenses with anæsthetics in vivisection, as a rule, though occasionally, for convenience sake, if an animal is very restive, he administers a dose of curare, which, by the way, pays the beggars out for their disagreeableness, as it intensifies the pain. It is very absurd that we cannot in Oxford operate on horses; but there is a difficulty even about dogs, the prejudices of certain dons being so very strong. Lembic, however, never submits to dictation. He complies with the tyrannical, meddlesome Act of Parliament just when it suits his convenience – not otherwise; in fact, his stereotypical joke is, ‘’Now, gentlemen, we will proceed to perform an act of startling and heinous illegality.’ Illegality, indeed! As if either he, or I, or any other devotee of science, were going to be Act of Parliamented! (68-70)

Errol signed off the letter “Your affectionate son” with a postscript to not “forget to send Flo” (68-70). The letter sheds light on Errol’s relationship with his mother, who was earlier defined by her husband as one of “the most fragile of mortals” (4) and incapable of nursing her own child. Animal-owning relationships mimic parent-child bonding and Errol’s request to “cut [Flo] up alive” and “[t]orture her” (71) could be read as replicating the severing of the maternal bond between his Lady Marmyon and her first born child, where she

was left tortured and "suicidal" (25). 'Flo' is a Latin baby name and is drawn from the mythological Roman Goddess of flowers. It denotes flowing, flourishing and the Marmyon "old setter" could be said to denote all that was innocent and once benevolent in Errol's younger life. The name also holds a distant connotation to the Italian town of Florence[89] where the anti-vivisection debate was conceived by Frances Power Cobbe in 1863 when she worked as the Italian correspondence for the London Daily News and discovered the vivisection laboratory of Moritz Schiff (Turner 85). It is evident from the letter that Errol empathises with his mentor Lembic and not the suffering experienced by the dog, who he considers did the world of science a misfortune in dying too soon. Errol's letter states that any dog strapped to Lembic's bench that becomes troublesome is dealt a dose of curare to intensify the pain. The dog here clearly suffers twice; once through the initial vivisection and then should it have the bad manners to yelp, it is placed in a catatonic state that will ensure that it its sensibilities become heightened.

The letter is introduced to the plot as a 'secret' between mother and son. Lady Marmyon was initially concerned to reveal its contents but finally hands the letter to her husband at the breakfast table to share with the family before she vacates the room. By presenting Errol's request in epistolary form, the reader is invited to share its contents and engage with the family members slowly gathering to dine at their table. The satiric undercurrent attached to Errol's plea does little to camouflage the callousness of the proposal, and the injection of vivisection into the plot is clumsy and heavy handed but Reade employs a set of renowned activist tracts to steer the reader from the Marmyon breakfast room to an Oxford based vivisection laboratory bench. The most rudimentary of Reade's lay-readers would have experienced little difficulty in identifying the "high priest[s]" of Ouida pamphlet

[89] For further details regarding the events in Florence, see Patrizia Guarnieri in Rupke 105-124.

entitled by an almost identical name: “The New Priesthood (1885). Likewise, the earlier topic of Cobbe’s essay “The Rights of Brutes and the Claims of Man” (1863) would have been easily detectable. Lady Marmyon’s apparent acceptance of the barbaric account of cruelty instigated by her son, in whom he shows no moral or ethical responsibility, aligns her, like Aunt Marshall, with the same sociopathic tendencies as her charge. There are also shadows here in the Marmymon dining room from the Abbott’s library. Marshall’s mysterious reading matter could likely have been the like that mentioned by Reade. Here, both Fenwick Miller and Reade are highlighting the responsibility placed on mothers to regulate and educate their charges. As addressed by Fenwick Miller, the ease with which the often graphically illustrated pamphlets slid into domestic life raises many questions as to how the young vivisector’s interest was ignited and incubated.

By dismembering Flo, Errol is dismantling his childhood self, and both tasks appear to meet with his mother’s approval. Both Fenwick Miller and Reade focus on the callous nature attached to women who exhibit an unnatural instinct to provide any form of maternal nurturing or chastisement for cruelty. This emotional void is then directly linked to their offspring’s interest in vivisection practice. In The New Priesthood, Ouida complained that women scientists of the vivisection laboratories were naturally crueller than their male counterparts: she believed they were “causing and watching the agonies of tortured animals with all the thirst and avidity of the neophyte for the unknown” (17-18). This comment obviously raises the question of what kind of mothers these women will become. If they can witness the protracted torturing of animals in the laboratory, it is questionable that they could then readily discount this suffering to provide a benevolent atmosphere to raise their child. By permitting their charges to transgress moral boundaries and knowingly engage with a practice linked to sadistic cruelty, activist writers appear to cast the parental figure as crueller than its offspring. Indeed, when Lady Marmyon recollects her Errol’s sadistic tendencies she

would “smile-oddly … mysteriously” and excuse her “quick-witted, and bad” son (59) in the same fashion as another parent may wistfully recall their first steps.

Sir Robert intervened to save Flo from the Lembic’s bench. An argument erupted and Planny physically despatched Errol from the room who, in turn, flings himself upon Lady Marmyon’s better nature in her boudoir: metaphorically he returns into the safety of the womb. Shortly after this event, Planny becomes ill and in the guise of assisting his brother in recovery, Errol injects him with a life-threatening virus. Like Mrs Gallilee, Errol is seduced by greed as Planny’s death would secure him as heir. When she realises that her biological child’s life hangs in the balance, Martha reveals the earlier swap of the babies but she does not cultivate any elaborate rhetoric when she asserts her maternal rights in telling Sir Robert that “Lady Marmyon didn’t nuss him as a h’infant” (190). This is one of the few moments in the text where Reade emphasises her working-class heritage through her command of the English language. In doing so, her natural choice of vocabulary reinforces Planny’s return to his birth heritage while reinforcing the umbilical connection between mother and child. At the beginning of the novel, Lady Marmyon was cast as a fragile creature that was considered unable to accomplish the natural necessities attached to motherhood. By the time the plot closes, she has become a dysfunctional mother who rejects her natural born child and takes comfort in her callous, vivisecting second born child. In contrast, Martha fought with a renewed vigour to protect her biological child when it became apparent that his life was under threat.

In Ellis Marston’s vivisection novel, The House of Chloe (1900), the mother of the vivisector Hugh Fortescue writes him a letter that he does not read until some months after her death. The letter is an account a dream Mrs Fortescue repetitively experienced that continued to haunt her waking hours. The contents of the letter are clearly influenced by Cobbe’s two act satire Science in Excelsis (1875) that in turn, draws heavily upon John

Milton's Paradise Lost (1667) and Dante Alighieri's The Divine Comedy (1321). By using Cobbe's play, some twenty-five years after its publication, Marston illustrates the extent of her influence over the entire anti-vivisection cause. In Science in Excelsis, the action takes place in a "celestial Laboratory" (8) overseen by Azrael, the Angel of death. Three vivisectors of German, French and English nationality are placed on trial and Mrs Fortescue aligns her son with the last scientist. Cobbe's physiologists fiercely defend their right to experiment on animals using the argument that they were "men and they were brutes; we had the right to do as we pleased! (10). Cobbe here references her earlier essay "The Rights of Brutes and the Claims of Man" and by way of response, Raphael informs then "[w]e are angels and you are men; and by the same logic, we have a right to do as we please" (11) and usurps the authority of humanity. From the letter, Mrs Fortescue has adopted the role of the character Eloa, the Sister of the Angels (the Angel of Pity) from Cobbe's play and pleads for the mercy of the "tiny creature[s] of bone and muscle, blood and nerves" (5), the very things her son rips asunder in real life. In her dream, Mrs Fortescue willingly offers herself for trial in the place of her the "little lump of pulpy matter" (5) that is her son, Hugh, and Reade here is drawing a strong parallel to Anna Kingsford's claim that she would offer her own body for vivisection to save that of helpless creatures. The Angels refuse Mrs Fortescue's request and then employ the physiologists' own manuals on each corresponding body to test their hypothesis.

Unlike the previous mothers discussed in this chapter, Mrs Fortescue is an eager and enthusiastic anti-vivisectionist, much to her son's chagrin. Her widowed status appears to afford Mrs Fortescue a stronger independent voice, as she takes charge of her own personal development and exerts pressure and moral influence upon her pro-vivisectionist offspring. She had joined the "shrieking sisterhood", confronted the "bawling brotherhood" (10) and was very much influenced by Sarah Grand, whom she quotes extensively. By mentioning

Grand, Marston makes a direct link to sensation writers and opens a possibility for readers to identify with the character's reading material. Her letter is written from her deathbed and at the end, it is difficult to distinguish her experience from Cobbe's text. For Hugh, his mother's words are potent as he only opened the letter after her death. As she stands before the "shadowy judges", it reads as though she is currently placed on trial to excuse the sins of her child:

> In my dreams I am taken nightly to some place of judgement – where, I cannot tell for all is vague and cloudy. It seems to me that I am put on trial for some heinous crimes I have committed. I cannot recall them, nor can I make any defence; I can only plead guilty, and stand before my shadowy judges with downbent head. Then a category of my sins is read out to me. Oh Hugh! They are too awful! And finally sentence is pronounced. And that is always in the same terms: that the wrongs I have done to others I must suffer. There is no one to plead for me. Alone and unfriended, I go forth from that dread hall of judgement to my doom. And then the pain comes, and I wake in the silence of night with no one near me but the nurse, who is slumbering peacefully in the dressing room; and I wrestle with the agony until the morning breaks. (71-2)

In offering her own life for her child, Mrs Fortescue epitomises the message offered by the image of Landseer's Newfoundland that graced a considerable portion of the activist literature. The dog speaks from the page and asks, "would you give up your life for me?" although Hugh's mother appears to die from natural causes, she had already prepared herself for a trial in the next life. After reading the letter, it is no surprise that Hugh repents and rejects his vivisection practice but this is not until he had embarked upon a relentless punishing regime to cement his professional standing, whereby he becomes a 'celebrity' who

could rival Benjulia's reputation. Ignored and ridiculed in life, Hugh only listens and appreciates his mother's advice when she speaks from the celestial chamber. Anti-vivisection plots were not known for their physiological prowess and it borders on trite to suggest that Marston is suggesting that vivisectors should be aware of learning lessons too late, but the 'simple' and basic nature that likely derived from literary novices tended to provide a clearer message. Hugh's mother was unique in this chapter because she unconditionally loved her birth-child and it is her special place in the nurturing spectrum that keeps science in check.

CONCLUSION

The role of the rabies virus and its human form of hydrophobia reminds readers of the chaos attached to the dismantling of the domestic sphere and the need for healing following such fragmentation. All three novels discussed in this chapter, alongside Cobbe's short play, provide some of the most interesting and complex characters of vivisection fiction. The role of hydrophobia within any activist text was often so small as to hardly warrant mention, but it was the devastation left in its wake that fuelled plots. Bites from animals rarely appeared in the plot and the authors appeared at times to merely 'nibble' from the page. The strength of incorporating the virus in to the plot was its element of surprise that could be manipulated to suit the scene. Infected dogs were more often to be found in the poorer areas of cities and, therefore, it was classified as a 'working-class' disease. Throughout the activist fiction, the virus infects medical professionals, namely those from the middle and upper classes, and thereby supports the analysis that writers who accommodated the virus did so to penetrate issues relating to class boundaries. Marston's working class mother, Martha, exhibits the choices women faced who did not inherit wealth and the means they undertook to support their families. In turn, Lady Marmyon was comforted by wealth but impoverished by a patriarchal system. With both novels, hydrophobia does not respect class, wealth or gender

and draws in to question other societal and medical issues of the time, such as the anti-vaccination Act.

Pro-vivisectionists argued that women should be disqualified conversing in medical issues primarily due to their emotionality but the novels discussed in this chapter warn that to exclude women from science would be at a wider cost. Throughout all the texts discussed, hydrophobia acts as a metaphorical weapon for certain individuals to achieve freedom or regain self-control. For Sir Roger Marmyon, identity was closely linked to control and hydrophobia acts as a marker for the general repression felt by the less privileged in society.

Aunt Marshall and Lady Marmyon are women who do not appear supportive of the anti-vivisection cause, but both women are aware that their charges engage in the practice. For this reason, they appear as morally bankrupt as those that engage with vivisection itself. Both women are not physically affected by the virus but Fenwick Miller and Reade punish their children for what is effectively 'the sins of their elders.' What is clear from the plots is that Marshall and Errol engaged with the practice of vivisection, unchecked, from an early age but it is speculative to suggest an alternative if both were not denied conventional nurturing. Hugh Fortescue was clearly a loved child, but continued to vivisect long after his mother's death. It was her letter, read from the grave, that penetrated Hugh's conscious and reconsider his profession. Marshall and Errol treated all women that inhabited their lives with the same moral inclination they held for vivisecting the family pet. The activist message running throughout all the texts is one about restoring self-control and a quest for identity. The virus was used as a literary trope to examine the meaning of individuality and identity.

5: The Vivisected Body as Literary Object

Torso slit neatly as an envelope,
the flesh folded back in awe
of the love letter I read
when I read the disgendered organs
with fingers, with lips. I know each one
in the drafty twilight of this cryptic room
where I soften everything with a razor. (1-7)

The above opening lines of Kimiko Hahn's sonnet Vivisection (2000) presents the vivisected human body as a portal of communication. Through the art of the poetic form, the anonymous vivisectionist unmasks the secrets of the body and opens a window into an intimate world. Although the sonnet is entitled 'vivisection' it is an account of an operation on a deceased body and thereby should be correctly referred to as a dissection. Nothing is revealed externally about the body but Kimiko's 'vivisector' interacts with the body as though it still breathes life. This chapter analyses three different accounts of the vivisected body read as a form of storytelling. By pushing beyond Colin Milburn's statement that "vivisection was regularly figured as the conjoined action of dissection and writing" (132), this chapter considers how the wounded vivisected body, when read under the physiological gaze, can be rendered as a medium for scientific communication. By initially examining Michael Foster's[90] account of the vivisected animal body in "Vivisection" (1874), this chapter explores the ways in which Foster's scientific documentation of an operation unwittingly invites the reader to interact with the text. The chapter then moves on to discuss the textual body and examines the ramifications of editing an unauthorised text of an independent author. In "The Anti-Vivisection Agitation" (1883), Elie de Cyon claimed that activist writers had "mutilated" (500) his research by heavily revising his life's work, and this chapter explores the ways in which the pen and sword are conjoined through the act of

[90] For information on Sir Michael Foster, see Gerald Geison

dissection. In Claude Bernard's influential textbook An Introduction to the Study of Experimental Medicine (1865), Bernard conceded it was impossible to "separate … head and hand" (3) and this tactile sense of scientific communication is explored through the last 'body' of this chapter. Foster, de Cyon and Bernard all wrote from a scientific advantage and used vivisection, in various ways, as a form of didactic narrative, but the three bodies of this chapter: interactive, textual and imaginative all provide an invaluable insight into the vivisector's identity. This chapter will, therefore, determine the ways in which the wounds, cuts and incisions inscribed upon the body, can be read as the signature of the vivisector through literature.

Rosemary Horowitz suggests that storytelling is defined as "a complex, fascinating phenomenon" (3) in a phrase that could easily apply to the nature of the human body itself. Through necessity, the practice of vivisection renders the body physically catatonic but as Elaine Scarry notes "when it at last finds a voice, it begins to tell a story" (3). Vivisection narratives literally become "the voice of the voiceless" (Wheeler Wilcox 1) for those that have lost the recourse to language. Aesculapius Scalpel[91] wrote in the preface of his realist novel Dying Scientifically: *A Key to "St Bernard's"* (1888) that without "writing a story" (95) it was impossible to draw public attention to medical concerns. Scalpel refashioned factual accounts of the vivisection laboratory into what appeared as fictional tales for a lay-readership. In 1875, Dr Andrew Wilson interpreted the meaning of vivisection as "a method for generating signification: a scientific merger of pen and scalpel (137) and thereby emphasised the inseparable nature of these essential tools of the vivisector's trade. This

[91] Aesculapius Scalpel was the pseudonym of general practitioner Edward Berdoe who actively campaigned against the practice of experimental medicine. For further information see Keir, Waddington. 246-262.

chapter draws on all these strands of enquiry to examine how the vivisected body can be read as a literary object.

MICHAEL FOSTER: THE INTERACTIVE BODY

In 1883 Michael Foster became the first Professor of Physiology at Cambridge University and he was a leading figure in the professionalisation of physiology in Victorian Britain. He served on national commissions dealing with vaccination, tropical disease and the disposal of sewage. With Foster, British physiology experienced a veritable rebirth. In 1874 Foster published an essay entitled 'Vivisection' for *Macmillan's Magazine* where he described an operation on a rabbit body as "one of the commonest forms of vivisectional experiment" (371). The passage is quoted at length to incorporate the entirety of the operation:

> You pull it and pinch it; it does not move. You prick with a needle … it makes no sign… You make a great cut through 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. To the physiologist its body, though poor in what the vulgar call life, is still the stage of manifold events, and each event a problem with a crowd of still harder problems at its back. He therefore 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 takes note of the rise and fall of the chest-walls, as they quicken or grow slow, as they wax or wane, under this influence or 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; he brings subtle poisons to bear on the whole frame, or on parts; and having done

> what he wished to do, having obtained, in the shape of careful notes or delicate tracings, answers to the questions he wished to put, he finishes a painless death by the removal of all the blood from the body, or by any other means that suit him at the time. (370-1)

Vivisection by its very nature can only be defined as painful but the tone of Foster's passage is sensual and tactile. As the narrative progresses, it treats one of Nature's bodies as a living scroll. In easing away the animal's skin, namely Nature's protective barrier for this body packed full of "manifold events", Foster invites the reader to partake in an interactive story and to become personal with an impersonal object. By introducing the passage with the pronoun 'you', Foster suggests the reader makes the first cut and coerces them to "pull … pinch … and prick [the body] with a needle" (370). In doing so, the reader punctuates the narrative with their imagination and instantaneously engages with the procedure taking place on a personal level. By 'touching the body', the reader has become implicit in the action and carves their place within the 'story.' Here, Foster literally approaches scientific discourse with pen in one hand and scalpel in the other and turns Claude Bernard's assumption that "[w]e cannot separate … head and hand" (3) in to a reality. In the hand of the reader, the scalpel stimulates the imagination of the person standing before the body and the vitality of the natural world becomes a metaphor for a newly-discovered fascination: the reader is now a participant in laboratory life. The opening narrative hook places the reader at the forefront of the operation and paves the way for the introduction of the anonymous physiologist, who thereafter adopts the masculine pronoun, 'he'. The ease with which Foster transfers the action of the passage, or more precisely the scalpel, between the reader and the physiologist would have likely left the reader still poised over the animal body, scalpel in hand, fully immersed in the operation but not realising that they are no longer alone. At no point during the procedure does Foster directly reference the operation to his own hand and it is not clear if

the vivisection experiment is a representation of his work from his laboratory. By this stage in the text, the reader has been coaxed into 'handl[ing]' and 'divid[ing] the opened body and a personal interest had become invested in the text. If the reader immerses themselves fully in the 'story', Foster's narrative has, in effect, carved his own voice out of the laboratory and relegated him to the marginalia. Lying just outside of the passage, the narrator makes a reference to the rabbit's skin. As Steven Connor has noted:

> "skin is really *not even part of the body* ... not because it cannot come apart from it. The skin is not detachable in such a way that [it] would remain recognizably a body. … The skinned body is less a body … than a skeleton. (29)

There is no defining mention in Foster's passage to distinguish the animal but its skin is "slit neatly as an envelope" as Foster begins the task of "read[ing] … the disgendered organs" (Kimiko 1, 3, 4) he orates its findings as in similar fashion to reciting a familiar text. In referring to the rabbit's skin as an aside, the narrator effectively relegates to an extraneous part of the text and like Connor's comment, it becomes separated from the *"part[s] of the body"* and the text. Foster is clear to state that the skin of a rabbit is "not so sensitive as the human skin" (72) but for humans it is the most sensory part of the body. In skin, the receptors detect touch, pleasure and vibration. *Macmillan's Magazine* placed the account of the operation over two pages, which would necessitate the reader touching the page in order to continue with the 'story'. As the reader progresses, the tips of the human fingers, which are intensely sensitive to the touch because they contain a high number of nerve endings, are required to 'touch' the textual account of the opened body and metaphorically the hand, pen and scalpel become compliant together in the same operation.

In 1873, Foster was a contributing editor to the Handbook for the Physiological Laboratory and his section concerning the "Stimulation of Nerves" contained an account of a

vivisection upon a frog under the title “Other Variations in Irritability.” After “destroying the spinal cord,” Foster advises the practitioner to lay

> bare the sciatic nerve without dividing it, place a pair of electrodes under the main sciatic trunk, send a feeble single induction shock through them, and record the amount of contraction in the gastrocenemius, or determine the position of the secondary coil, which gives a shock just falling short of the strength required to cause a contraction. (392)

The methodical tone of the above passage dulls the potency of the electric shock dealt to the vivisected frog. This literary technique was not unusual as each of the contributing editors was identifiable through their own literary style. An alternative section of Foster’s chapter reflects Cobbe’s assertion that vivisection writings were prone to replicating the tone of the instructions given to “recipe books” (Light in Dark Places 222), but vivisection and culinary preparation both rely on procedural methods to accomplish a given task, and it would be difficult to imagine an alternative approach to accomplish either subject. The above passage does confirm that the body belongs to a frog, thereby differentiating itself from the cookery manual that often stripped animals of their species to make the violence of dissecting a body for the dining table appear acceptable. The vocabulary used in the opening of Foster’s two non-human bodies, exposes a potential duality of Foster’s personality, one that engages in the cold language of science while at the same time, revealing the capacity to view the event through an emotive connection. The Handbook was the first English publication detailing the inner workings of the physiological laboratory that was readily accessible to a general audience. It is not known if Foster’s sensual use of language was intentional but it does assist in crossing the lay-divide of disseminating information and his essay

"Vivisection" was published in *Macmillan's Magazine* that frequently incorporated a wide-ranging selection of topics. This openness in publishing to a general audience challenged the anti-vivisectionists' charge that that vivisectors locked themselves away in dark and gloomy laboratories, and wrote only for their peers. Foster literary contributions confirmed that he did not fit the stereotypical profile of the vivisector promoted by the writers of anti-vivisection fiction.

Vivisection operations demanded that Foster worked within the strict time constraints that Nature placed upon science. The opportunity for engaging with the live animal was limited: it began the instant the inner workings of the body were exposed and usually ended with the animal's demise. The momentum of Foster's vivisection narrative mirrors the flux of the body as it struggles to complete its tasks upon a "stage of manifold events," before Nature reclaimed the body as her own. Consequently, within the contained space of the physiological laboratory, the vivisected body "conveyed meanings unavailable to the closed and contained body" (Milburn 135) and the documented evidence of its opening held the potential for it to travel beyond the laboratory into the various networks of Victorian culture.

With both the accounts of vivisection, Foster surgically removed the bodies' identity as though it were extraneous detritus and the bodies become interchangeable. However, during the operation of the rabbit body, he inserts sensation tropes to document the procedure. This existence of the "breathing, pulsating" body lying in a motionless state implies that it awaits the vivid animation that only the vivisector's blade can instigate. While the vivisector engages with a sensual experience at one remove the rabbit only feels pain. From the outset, Foster confirmed the rabbit was "completely under the influence of Chloral" (370), a sedative which was renowned for heightening the sensibility to the pain of its beneficiary. The body appears passive with a death-like anonymity, but it has surrendered to Foster's impersonal authority and inhabits a world of torture directed by the scalpel. It is

plausible that the reader may be aware of the heightened pain induced by chloral and when invited to make the initial cut, could become morally compromised in becoming the instigator of pain. By metaphorically placing the scalpel in the reader's hand, the narrative transfers moral authority from professional to lay responsibility. The identity of the body is limited to its personal, external appearance but from the moment the practitioner begins cutting upon its surface, it is transformed into a scientific legible surface where the vivisector inscribes his own signature using a blade. The cuts themselves can only be read as incisions: they cannot be recognised as the handwritten signature of a textual document.

It is a necessary requirement that all scientific writing must be documented for utility purposes and Foster's scalpel has become the medium through which the vivisector and the rabbit body have become revitalised; both now have an identity which at the outset was largely undefined but now becomes magnified with each cut. By recording such passages as those above, the wounds, incisions and 'inscriptions' formed upon the surface of the body, arouse the narrator's imagination and becomes the focus of exhilarated reverie, similar to the accounts from the notebooks of The Shambles of Science. The instruments which Foster employs are the natural and essential "tools of [the vivisector's] trade. As Foster's passage admits, these utensils are necessary for the recording of the "notes," "measures" and "tracings" he makes while at the same time, he "marks the results of each" cut and communicates the method through which each incision was performed. The disembowelment of the animals becomes a creative and interpretative experience as each of the marks performed on the surface of the animal body are purposeful. Within these incisions it becomes possible to 'read' the intention behind the vivisector's purpose and consequently, it becomes personal, like a personal signature. The vivisection experiment that Foster performed on the 'stage' of the animal body "evokes a pattern of cutting and inscribing that

intertwine and become indistinguishable. In other words, it is possible to 'read' the wounds as the "scientific signature of the vivisectionist" (Milburn 142).

ELIE DE CYON: THE TEXTUAL BODY

In 1882, Elie de Cyon published an essay entitled "The Anti-Vivisection Agitation" and declared that the animal rights movement had "mutilated" and "distorted" (499) his research findings that were documented in Atlas zur Methodik der Physiologischen Experimente und Vivisectionen (1876). The textual dissection of the Atlas adopted by the activist writers meant that de Cyon's text had fallen victim to the same fate as the very bodies it was attempting to document, but instead of a scalpel causing immense tension and stress to this body it was the result of unsympathetic editing. The *Atlas's* original illustrations of vivisected animals in various stages of experimental operation were enlarged, edited and "posted up [in their] hundreds of thousands" (503) by the anti-vivisection campaigners in numerous public places. The outcome of powerlessly witnessing the mutilation of his work resulted in de Cyon publicly declaring a sensation of feeling "used and abused" (500), and like his fractured text, de Cyon's own professional identity experienced a sense of disfigurement. The editing process employed by the activists relied primarily on targeting key words, and rhetorical phrases. By delving repetitively into the textual body, grasping fractured "lines," adding ellipsis and creating contortions in the syntax, they left the original body with "detached" (503) phrases that twitched like the ligatures and strings of the vivisected animal body**.** This wounded parent 'body,' once infiltrated and used, was discarded by its offspring like an abandoned husk, resulting in its maimed parts being stitched together for a new life outside of de Cyon's remit. In effect, de Cyon now had two wounded 'bodies': the exposed and mutilated animal body was now contained within the dissected and invaded textual body that acted as its representative to the public domain.

Unlike Foster's narrative, de Cyon is not primarily concerned with a physical body, either human or non-human. His argument is more self-centred as it was focused on the 'face' that fronted his 'body' of work, namely his professional reputation, which reveals far more about de Cyon's true nature than any form of textual or realist dissection. In The Anti-Vivisection Agitation, de Cyon had derided his peers for engaging in a "scientific discussion … before the judgement-seat of an ignorant public" (502) but in Cobbe's satire, Science in Excelsis (1875), three vivisectors were called to the legislative bench to account for the 'crimes' of their profession, and are judged by a cherubim court. Again, this is an instance where activist writers judged the science profession through a literary trial. Here, Cobbe's judicial angels refer to the scientific manuals of the vivisectors and open the case by questioning "what sort of brain secretes these kinds of statements" (16). The cherubim question the "slippery little German" vivisector that appears in the text as a thinly veiled characterisation of de Cyon. This "poor little two legged trembling creature" physically resembled a non-human specimen characterised in activist fiction. Following the instructions of his own manual, the vivisector was "administer[ed] curare" (16), strapped him down upon the bench and prepared for experimentation. This time, it is de Cyon's metaphorical physical body that is "mutilated" and "distorted" by the textual body created with his own hand, the one he had accused the activist writers of savaging at will. The satire presents the scalpel and pen as a double-edged sword and portrays the morality attached to the legislative bench as more powerful that any Government legislation afforded to the Research Defence Society. By using curare, and not a far more effective anaesthetic, it meant that de Cyon's words, created by his own hand, cut into his skin with caustic wit. He was strapped down and immobile and had no alternative other than to listen, and experience, his own advice. An anonymous article written for the Lancet in 1887 attempted to address the topic of "what is pain" set against the conundrum of "what is pleasure" (333), and this was always a contentious subject at the fore

of anti-vivisection literature. De Cyon links this divide by describing the vivisector in aesthetic terms and conflates the pleasurable, egotistical aspect of the practice alongside the inevitable pain:

> He who is incapable of pursuing with rapt attention, for hours together, a tiny nervous ramification almost imperceptible to the naked eye – who feels no pleasure in being able to isolate this nerve and subject it to electrical excitation, or, guided only by the sense of touch, to tie with his fingers, at the bottom of a deep cavity, some invisible vessel – lacks some of the qualities indispensable to the successful performance of vivisections. The pleasure of having overcome technical difficulties hitherto deemed insurmountable is always one of the keenest pleasures of the vivisector. The feeling of the physiologist when, from the depths of a wound full of blood and of destroyed tissues, he succeeds in drawing out a nervous fibre and resuscitates by artificial excitation, its extinguished function, resembles in some respects that of the sculptor when he succeeds in creating out of a block of marble a beautiful living form. (505)

Throughout the passage, de Cyon uses pain as an 'artist' uses paint as a medium to construct an image of beauty out of chaos. Like Foster, de Cyon extracts the sensual elements in communicating the wounded body. The above passage adds meaning to the lacerations made on the surface of the body and the "pleasure" and "sense of touch" illuminates tactile within the gruesome.

By dissecting images and entering the narratives documenting the pain of others, the activist authors question the ethical right one individual has to attempt to experience, or qualify, someone else's pain. De Cyon was emphatic that his 'stolen' illustrated bodies of vivisected animals were drawn from animals placed under the influence of pain relief. This statement was publicly challenged, and proven to be inaccurate, numerous times by the

activists. By drawing attention to the issue of pain with endless reproductions of the image, it could be suggested that the activists are consistently prodding the images to check that the pain is still active. In other words, not only was de Cyon's textual body dissected from its parent body, once it had embarked upon a new life, it unwittingly adopted a voodoo characteristic. In the preface to the Methodik der Physiologischen Experimente und Vivisectionen de Cyon presents the practice of vivisection in eroticised terms that rely upon the sense of touch." He stated that:

> The true vivisector … must approach a difficult vivisection with the same joyful excitement, with the same delight, as the surgeon when he approaches a difficult operation from which he anticipates extraordinary consequences. He who shrinks from the section of a living animal, he who approaches a vivisection as an unpleasant necessity, may perhaps be able to repeat one or two vivisections, but will never become an artist in vivisection … the sensation of the physiologist when, from a gruesome wound, full of blood and mangled tissue, draws forth some delicate nerve thread … has much in common with that of a sculptor. (15)

De Cyon's 'artist' demands emotional distance when engaging with the pain of others and the above passage was edited numerous times by activists to support the movement's rhetoric. By isolating the passage from the original article, it is difficult to refrain from reading the passage as a product of sensation writing. The central claim of the passage underlies the skill necessary in achieving successful outcomes of vivisection but de Cyon's use of the words 'approach' and 'shrink' implies reader manipulation: the passage appears to taunt the reader to approach the action but at the same time is aware they may shy away. Unfortunately, de Cyon's readers became over-familiar with the text and reclaimed it as their own in becoming 'artists' of editing and misrepresentation. Throughout the above passage, de Cyon calls on all those following the march of science to employ passion, delight and above

all, imagination. Unfortunately for the author, his unintended readership took him at his word and creatively sculpted new passages from the block of parent matter.

CLAUDE BERNARD: THE IMAGINATIVE BODY

Prior to Claude Bernard's medical career, he held aspirations of becoming a playwright and arrived in Paris in 1834 clutching two manuscripts. He had written a vaudeville sketch, La Rose du Rhône, and later produced a five-act historical drama entitled Arthur de Bretagne. The sketch was a successful enough to "earn a hundred francs (Olmsted 9). The tragedy was "written in conventional prose with … long rhetorical speeches" (Virtanen 6) and it was never performed during Bernard's life time. Émile Saint-Marc Girardin, an influential critic of the period, was not impressed and advised Bernard to swap the theatrical for the medical theatre.[92] Bernard took heed of this advice and although only a mediocre student, enrolled in a physiology laboratory and reinstated animal experimentation. Bernard "succeeded in persuading the scientific community that if any disease could not be reproduced on animals in the laboratory, it simply did not exist" (Geek 28). De Cyon was a pupil of Bernard and it is clear from his own writings that Bernard's persuasive character penetrated his artistic thoughts toward taking vivisection forward into the future. Scarry states that "[t]he only state that is anomalous as pain is the imagination" (162) and Bernard's use of imaginative vocabulary clearly weaves a path throughout his scientific writing and proves that he owes much to his literary apprenticeship. Bernard's linguistic flair enabled his laboratory to function as a living book for professional and lay readers alike. His descriptive passages made life easier for the activist writers to construct representations of the vivisector as they quote Bernard verbatim and he influenced a plethora of fictional vivisectors. Emile Zola used Bernard's foundational text An Introduction to the Study of Experimental Medicine as a

[92] See Virtanen for the career and writings of Bernard, esp Ch 1. See Olmsted for review of *La Rose du Rhône* and *Arthur de Bretagne*, 9-15.

foundation for his theory of the "experimental novel", and that "made it one of the capital documents of late nineteenth-century literary history" (Virtanen 13).[93] While Bernard's writings appealed to others outside of his immediate scientific circle, he did not advocate opening the laboratory door for lay inspection. Bernard concluded that "a man of science should only attend to the opinion of men of science who understand him" (103) as they alone would be able to discern the true vivisection intent in the bleeding configuration of violated organisms. Unlike the anti-vivisection writers, Bernard thought his peers would be able to distinguish the practice of physiology from common murder because the science professional must be disciplined to see like a vivisectionist and recognise 'mutilations' as an authentic sign of 'scientific ideals' rather than reading these as meaningless cuts.

Writing in the introduction to the Study of Experimental Medicine, Bernard's prodigy and successor, Paul Bert, said that his mentor "discovered as others breathed" (xvii), articulated "hard problem[s]" through "verbal imagery" and tended to leave his "speech dropping" (xvi). Bert's analysis is evident in Bernard's description of "true science" as rich in metaphor like:

> [a] flowering and delectable plateau which can only be attained only after climbing craggy steeps and scratching one's legs against branches and brushwood. If a comparison were required to express my idea of the science of life, I should say that it is a superb and dazzling lighted hall which may be reached only by passing through a long and ghastly kitchen. (15)

Bernard called "vivisection … an autopsy [and an] anatomical dissection of the living" (104), but by decorating the process with metaphorical flowers and plateaus, he

[93] For fictional recognition, see Colmore, Marryat, Wells, Pain and Ross. For scientific influence, see Foster *Masters of Medicine: Claude Bernard;* Virtanen; Olmsted; Grande and Visscher and Holmes.

coaxed pain into an acceptable visibility that seduced the reader into erasing surface pain from the page. Bernard describes the experimental laboratory as an enclosed room of trauma beyond which lies a realm of profound knowledge, the dazzling revelation of 'life.' The passage states that there is 'no gain without pain' as a necessary stumbling block to fruition and it attempts to excuse the moral implications that hover beneath the text. In punctuating his text with 'graphic imagery' that conflated domestic metaphor with a rigorous scientific procedure, Bernard could engage in conversation with his reader, rather than alienating his audience through any professional jargon. This literary tactic separated Bernard from many of his peers. The aim of the Introduction to Experimental Medicine was to demonstrate that medicine, in order to progress, must be founded on experimental physiology and the text emerged alongside the sensation genre, that also elicited intense physical responses from its readers. As Jenny Bourne Taylor has expressed, the sensation novel was understood as a:

> collective cultural nervous disorder, a morbid addiction within the middle class that worked directly on the body of the reader and as an infection from outside, continually threatened to pollute and undermine its boundaries through this process of transference and analogy. (4)

Bernard's own sensory experience often presents the same effect on the reader as the passage above. In the Introduction to Experimental Medicine, Bernard suggests that the experimenter must be willing to "abandon" his idea and "give free rein to [the] imagination" (24) illuminating Bernard's early fascination and influence of the arts but also treating imagination as "an infection from outside." Bernard advised de Cyon that:

> [t]o be worthy of the name [of physiologist], an experimenter must be at once theorist and practitioner. While he must completely master the art of establishing experimental facts, which are the materials of science, he must also clearly understand the scientific

> principles which guide his reasoning through the varied experimental study of natural phenomena. We cannot separate these two things: head and hand. An able hand, without a head to direct it, is a blind tool: the head is powerless without its executive hand. (3)

Bernard here dispels the myth that science is all about fact. He is promoting the idea of imaginative constructs to engage in conversation with his reader. Scarry suggests that it is "impossible to imagine without imagining something" and further deduces that "[p]hysical pain … is language-destroying" (19) but Bernard believed that "words [gave] too narrow a meaning" (10). Emphasising that the "art of investigation" (13) could be "brought to light" through "making up mental imagining and making-real" (13), Bernard's description is crucial because it breaks off the voice of the animal and makes it his own. The animal cries out when Bernard thought it needed to be heard or noticed or quietened it when he wants it to be silent. In Bernard's case, the animal under vivisection becomes mere inert matter, thus freeing the mind to the scientist for bodiless exercise of pure reason (Harris 104). By adopting the Baconian method,[94] Bernard 'piled up facts' in order that "one observation may serve as control for another observation" (16), but still maintained a novelistic approach. Regarding material facts, he suggested that they:

> may have opposite scientific meanings, according to the ideas with which they are connected. A cowardly assassin, a hero and warrior each plunges a dagger into the breast of his fellow. What differentiates them, unless it be the ideas which guide their hands? A surgeon, a physiologist and Nero give themselves up alike to mutilation of living things. What differentiates them also, if not ideas? (103)

[94] Brief description of Francis Bacon's method.

Considering Bernard's choice of characters in the above passage, it is not surprising that its content supported much of anti-vivisection rhetoric in casting the vivisector as a cowardly murderer waging a war on humanity. What is evident is that the passage is overly masculine, an issue that helped fuel activist propaganda alone, and it is easy to apportion its content to Bernard's earlier literary aspirations of the dramatic theatre. Bernard's first three characters, the assassin, hero and warrior all promote connotations of warfare, a trope used numerous times in anti-vivisection literature. Of the remaining characters, two perform in the medical theatre while the last is symbolic with the amphitheatre. Only Nero is referred to by name, and the callous nature attached to his history, did not go unnoticed by the activists. Bernard here uses this passage to draw his readers into a familiarity of literary and historic characterisation. Like a vivisection operation, Bernard delves below the surface. Likewise, Foster referred to the vivisector as an agent of duplicity calling him "an angel in the bosom of his family, but a demon in the laboratory" (368). Bernard appears to suggest that the same "fact", the same "mutilation" is read as different readings relative to the intentions and "ideas" to which it was developed. Therefore, the material facts of the vivisected body are signifiers of both science and individual character. With this characterisation in mind, Bernard provided a passionate defence of vivisection which became infamous in anti-vivisection literature:

> A physiologist is not a man of fashion, he is a man of science, absorbed by the scientific idea which he pursues: he no longer hears the cry of the animals, he no longer sees the blood that flows, he sees only his idea and perceives only organisms concealing problems which he intends to solve … [A] man of science should attend only to the opinions of men of science who understand him, and should derive rules of conduct only from his own conscience. (103)

Under Bernard's physiologist gaze, the animal body has been transformed into a viable medium and the practice of vivisection takes on a sense of meaning on the surface of the wounded body. Bernard no longer recognises blood as blood and cries are no longer audible to the ear. Bernard ceases to operate as a sentient being and as Milburn suggests "these expressions of the body have become transparent to the scientist who sees the organism only as a vehicle for communicating occulted biological problems" (142). Bernard has created a way of 'seeing' the mutilated body as a medium for communication: it becomes a parchment whereby he can inscribe communicative meanings. In the eyes of the anti-vivisectionists, the laboratory can still be read as a "torture chamber" of science but it re-emerges as a potential space for writing on the body through Bernard's use of imaginative storytelling. Bernard wrote that "the physiologist is … absorbed by the scientific idea which he pursues" because "we cannot imagine [him] without his laboratory … without it, neither experimenters nor experimental science can exist" (20). For the scientist, he evaporates into the physical laboratory space as he becomes completely absorbed by his ideas. In this sense, as the operations progress, Bernard's vivisection laboratory becomes a space of automatic writing. Like the opened vivisected organism, the laboratory itself unfolds like a book, with each page offering further information.

CONCLUSION

When Foster invites the reader to engage with both pen and scalpel, he makes flesh Bernard's imaginative construct and blurs the boundary between the physical and the emotive experience. Similarly, the editing of de Cyon's narrative offers a conflation of roles and experiences. Bodies that are opened, either textual or physical, become vulnerable, and the three bodies discussed in this chapter typify Horowitz's analysis that at the heart of "storytelling" is a phenomenon." The phenomena of the human body are stories that have no beginning, middle or end as each is an individual experience dependent on many factors are

controlled by Nature. The physical cuts themselves that open the body reveal very little about the individual vivisector. What is important is the reflexive nature the 'touch' of the body enacts. Foster's language is sensual but he manages to appear impersonal while inviting the reader to join and share his scalpel. De Cyon pushes beyond Foster's tactile nature and considers the tearing apart of his text as symbolic of an attack upon his person. These bodies are united with Bernard's imaginative construct because they are all voiceless. Each one is silent until instigated by its perpetrator. Foster's body is physically controlled by curare and although it is motionless, it experiences great pain. Alternatively, de Cyon's body feels no physical pain but can only adopt the voice of its 'perpetrator' and absorb the new identity that is thrust upon his character. Kimiko Hahn's vivisected body reads like a love letter addressed to the opened body. At the beginning of the sonnet, the identity and relationship between the vivisector standing in front of the bench and the body are unknown, but through the sense of touch, a history is revealed. There is emphasis from Hahn that the body must be read. It is impossible to not read the textual body but the physical body is also a text. It opens as an envelope and as the reader scrolls down the written text, the body's parchment reveals the familiarity of the internal body that has until this moment remained hidden. The sonnet acts as a portal of communication both to the reader and as a letter of introduction from ethereal body to the vivisector with a request to lovingly 'soften everything with a razor.' (7) Like the other three bodies, it is also silent but it is a visceral letter and not intended for discussion.

Hahn's sonnet is paramount in attempting to read the vivisector's character alongside the opening of the body. It is the only body that interacts with an anonymous vivisector and as the opening lines of the sonnet exhibit, the individual does not physically touch the body, but there is full interaction. It is gentle, calm and a respectful experience. In contrast, Foster expects the reader to thrust their hands within the cavity to 'pinch' and 'prick' at a being experiencing a heightened sensitivity to pain. Therefore, to analyse the physiologist's

character, the reader must first read the vivisector's intentions that are inscribed upon the bleeding surface of the animal body but these can only be performed with the authority of the reader.

Conclusion

This thesis has demonstrated that a re-examination of late-Victorian vivisection literature can provide new insights into the influences that instigated the anti-vivisection controversy. The challenge of this study has been to resuscitate areas of the debate that have fallen into neglect, namely the pivotal role of the vivisection image and the hydrophobia virus and to examine these topics within the wider context of the debate. Setting this study apart from earlier historical readings of the debate has been the decision to place the literature that emerged from the controversy at the centre of the analysis. It has been common for previous studies to relegate the literature to a secondary place after historical analysis. At the outset, this study was hesitant about treading the well-trodden feminist path to engage with the identification of the woman with the 'vivisected animal'. To date, this had been the chosen path of most historical analysis of the debate but as this research project progressed, the gendered voice of the debate became stronger and it was soon evident that no study concerned with the Victorian Vivisection Controversy would be complete without including this theme. By incorporating this aspect into the study, it drew other unexpected topics to the debate, such as the fictional representation of absent mothers, along with a lack of maternal nurturing of the young vivisector. During its peak, the anti-vivisection movement was categorised as a woman's movement by the science profession. This analysis was likely due to the sentimentalism attached to the activist literature but further analysis has proved this narrow gendered view to mask other issues prevalent to women. At times, fictional writers presented women involved on the periphery of vivisection practice as exhibiting callous natures mirroring that of the vivisector. This interest lent a new, and unexpected, interest to this study that exposed a dread that certain women felt vulnerable at times to their own sex. This motif runs through a surprisingly number of texts in various guises. One of the unexpected insights provided by the 'vivisection' novels is the way writers show the options

available to working-class women in order to survive. Colmore's depiction of invasive surgery that disfigured Sarah and psychologically scarred Judith suggests how the poor paid with their body. Mrs Gallilee avoided a societal drought by embracing the conversazione and likewise Rose Gordon surrendered her medical education to become a nurse after her father's estate leaves her without funds. Upon becoming a widow, Mary Leeson opened a boarding home for animals, 'David' Lowther became an artist and Cobbe became a prolific writer of essays. There are instances of many other women in similar predicaments and these common plot lines suggest that the writers of the anti-vivisection movement were concerned with more than the lives of animals. All of the characters above were associated with the animal rights movement in various ways but the novels are keen to move beyond the core issues of the debate and discuss wider issues directly affecting the lives of women.

As outlined throughout each chapter, the prime issue facing the anti-vivisection writers was that a considerable number of the movement lacked any form of first-hand scientific experience, which undermined their argument from the viewpoint of professional science. The decision to bridge this gap using the vivisection image proved that the activists were resourceful, diligent and forward thinking enough to birth a movement and ensure their core message was delivered to the public domain in swiftest and most economical way possible. This is not to say that there were not problems arising from self-promotion, namely for reasons unknown, the activists did not appear to undertake any form of scientific education to assist them in speaking to science professionals on a common ground. It could be said that this was an oversight on their part and as James Turner notes, their habit of "citing chapter and verse" from scientific journals only exposed their shortcomings and they "were forever finding themselves the butt of ridicule for their ignorance of the most basic facts" (106). As mentioned earlier, scholarly attention to the role of the images has been neglected and their inclusion at the beginning of this study casts light on their importance in

helping to establish the identity of the movement in its early stages. By promoting images, larger than life, on placards and posters in railways stations, coffee shops and libraries, the movement forced open the door of the laboratory for lay inspection. It would have been difficult to ignore these promotion tactics, even if individuals were not seduced to join the ranks. The strength of the movement lay in maintaining the use of just a select number of images that became instantly recognisable and alleviated the need for any technical explanation. The images concentrated on depictions of wounded animals shown mid-operation and the issue of pain obviously played an enormous part in the propaganda tactics. As discussed in this thesis, it is plausible that this attracted a different audience and one that was possibly not interested in halting the practice. Due to the high number of women active within the movement, the issue of identifying their own repressed position with the vivisected animal becomes uncomfortable when viewed in this light. There was always the possibility that these women were issuing into the public domain pictures of pain that could be appealing to the very individuals that were igniting their cause for joining the movement.

The editing tactics employed by the activist writers clearly undermined their authority. Although the prime target for this charge was Cobbe, it must be said that she was the most recognised 'face' of the movement. The favourable editing, promotion of overly graphic literature and the arrival in short succession of activist periodicals, supports the theory that there was a sense of urgency about the movement, as though these women had been waiting for an opportunity to break out and speak. This hypothesis would support the suggestion that not all the women 'liked' animals and joined the movement for wider humane reasons.

The images were introduced just after the passing of the Cruelty to Animals Act in 1876 and once they had served their purpose, it appears that the activists turned their attention to producing fiction, short stories and poetry. To categorise these offerings as 'vivisection' novels would be generous as the plot was essentially a weak romantic template with

vivisection injected at appropriate moments to move along an otherwise quite often pedestrian plotline. Rarely do these novels hint at vivisection in their title, which has made their detection difficult. One explanation could be that such titles as "The Spinner in the Sun" and "The House of Chloe" would appeal to the earlier sensation readership of women. Alternatively, it could have fed into the clandestine nature of vivisection itself. Fenwick Miller's novel *Lynton Abbott's Children* explores the possibility of a juvenile vivisector reading dubious literature in the family library and this raises the question of who may have read the literature. Obscure titles would have enabled those not wishing to be associated with the movement easy access to the reading matter, and this could have included the science profession. A close reading of the different strands of literature has also revealed that there were different strands of writers appealing to a variety of readers within the movement and, at times, it appears they often worked against one another. It is likely from the content of the contributions that many of the poets were literary novices. Their lines had little to do in engaging with the cause and focused upon a cherished pet, while the short stories were romantically inclined. Along with the novels, these writers did not appear to share a common ground with the essay contributors. For example, *The Zoophilist and Animal's Defender* ran a campaign in October 1900 for animals to make contributions 'that they had collected themselves' to the general fund. Each week, a fox named 'Josephus' and two badgers Elizabeth and Jane made outstanding contributions, alongside accounts on 'Ethical Standards' sourced from scientific periodicals. (140) One of the problems with the 'vivisection; novel was that there is only so many ways to interpret a vivisected body, and this is especially difficult when the author has never witnessed one in the flesh.

The science professionals did not take the anti-vivisection fury lightly as it threatened the professional lives and repute of those attempting to establish a new discipline but they did not publicly respond prolifically through literature. When they did publish a retort, it was

personally cutting and often directed at Cobbe. Conan Doyle, Wells and Ross did write from a scientific advantage but except for Wells, the plot lines rarely differed from those offered by the activists. The downfall of the anti-vivisection literature was that they sacrificed authenticity for sensation when the accounts of vivisected animals were harrowing always. One over-riding aspect of the literature is the number of times that activists placed the reader near the vivisector's bench. Writers such as Collins refused to adopt this tactic but due to the very nature of the practice, any description of vivisection played on the reader's sensibilities. This device was not limited to the activist writings. Michael Foster's account of a vivisected body seduces the reader to sharing the scalpel and Claude Bernard imaginatively leads the reader through his laboratory. This method demands the reader question if they are a coward or spectator. To turn the page and read another experiment could be tantamount to picking up the scalpel. If fiction writers ceased to write 'vivisection' novels, it would not cease the practice but there were few topics of science that demanded such a high level of integration from the reader.

This study has examined how the vivisector was portrayed through literature by the anti-vivisection movement. His characterisation remains reasonably static throughout but there is an overriding sensation of a loss of the female voice in many of the novels studied. Therefore, it would be fair to presume that given the number of anonymous contributors, gender persuasion of the movement and the maternal interest running through a considerable number of the texts, that the women of the movement were not intentionally writing about the vivisector: they were amplifying societal concerns regarding class, gender and legislation, his is not to say that the women did not wholly support the dilemma of the animals but it is a contentious matter whom the 'voice of the voiceless' is really representing.

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