

## More Sinned Against than Sinning: The Case for the Victorian Physiologist

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**Abstract:** This article investigates literary texts of the late-Victorian Vivisection Controversy as part of the interface between literature and science. Through a variety of sources including specialist periodicals, medical lecture notes and fiction, it explores the tactics adopted to amplify the anti-vivisection voice and traces a trajectory of cultural anxiety that fed into sensationalist fiction. Many practitioners within the medical community who specialised in vivisection felt themselves to be scientific pioneers and although their methods were often dubious, their determination to succeed was clear. This ambition generated a competitive environment and it was often difficult for those without first-hand medical knowledge to grasp an adequate idea of how exactly vivisection was used in the treatment of disease. In 1903, physiology students Louisa Lind af Hageby and Leisa Schartau published their lecture notes as *The Shambles of Science* covering a two-month period of study at University College London in 1902.<sup>1</sup> The text offered the first evidence of vivisection performed on animals without anaesthesia and provided a lay-readership with access to a *bona fide* account of the workings inside the laboratory. *The Shambles of Science* fed into cultural concerns relating to the practice of physiology as it evolved over five editions in the next ten years. The publishing success of Hageby and Schartau's intended exposé was fortuitously timed. During the closing decades of the Victorian period, particular developments in medicine had become so pervasive in public debate that literary figures exploited the discipline as a means of making their novels marketable.<sup>2</sup> A close reading of the fifth and last edition of *The Shambles of Science* (1913) and an analysis of its relationship with Leonard Graham's novella *The Professor's Wife* (1881) will underscore how the complex intersections between medicine and literature could both benefit and detract from each other.

**Keywords:** Anti-vivisection, Victorian, literature, science, physiology

Although scientific experiments on living animals had a long history, until the mid- 1860s vivisection was viewed as a continental practice.<sup>3</sup> A key event that sparked the vivisection debate in the British imagination was the publication of John Burdon Sanderson's *Handbook*

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<sup>1</sup> L. Lind af Hageby and L.K. Schartau., *The Shambles of Science: Extracts from the Diary of Two Students of Physiology*, 5th edn (London: The Animal Defence & Antivivisection Society, 1913). Further references are to this edition and are incorporated in the text with pagination in parentheses.

<sup>2</sup> Novelists who used the theme of vivisection include 'Æsculapius Scalpel', Sir Arthur Conan Doyle, Barry Pain, Florence Marryat, H. G. Wells, Robert Louis Stevenson, Sarah Grand, and Wilkie Collins. Refer to bibliography for details.

<sup>3</sup> English journalist and anti-vivisectionist, Frances Power Cobbe, for example, primarily challenged the vivisection practiced in Florence by Moritz Schiff in 1863. See James Turner, *Reckoning with the Beast* (London: John Hopkins University Press, 1980).

for the *Physiological Laboratory* in 1873.<sup>4</sup> The text attracted attention from anti-vivisectionists for two reasons. Firstly, the preface addressed beginners in research and secondly, the text itself failed to provide details regarding pain relief. As Stewart Richards notes, Sanderson's 'thoughtless oversight' and 'appalling naivety' in omitting references to the use of anaesthesia, meant that the publication could be represented by the activists as being typical of physiology as a whole.<sup>5</sup> These omissions fuelled the rhetoric of animal lovers, who tried to expose the horrors of vivisection by citing chapter and verse in scientific journals but as James Turner argues, they were forever finding themselves the 'butt of ridicule' by the medical profession.<sup>6</sup> The activists often appeared more concerned with the programmatic and retrospective statements of the physiologists than with what they actually did in their laboratories. This highlights a fundamental issue of the debate underscored by chemist, George Gore in 1884: 'It requires very little skill to ask complex questions; it is far more easy [*sic*] to challenge experimentalists to prove their statements than to acquire the ability to understand their proofs'.<sup>7</sup> Until the appearance of *The Shambles of Science*, the medical community counteracted any challenge to the profession by asserting that the anti-vivisection argument was grounded in sentimentalism rather than scientific reason.

Against this cultural backdrop, *The Shambles of Science* offered its own voice to the vivisection debate. Hageby and Schartau were scornful of the sentimental outpourings written by earlier anti-vivisectionists. They were determined to speak as doctors and confront science on its own terms. At the same time, they wanted their readers to see what they saw and to feel what they felt. For this reason, they employed a set of familiar interconnecting textual images to place their audience inside the laboratory unlike earlier literary writers, who left their

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<sup>4</sup> *Handbook for the Physiological Laboratory*, ed. by J. Burdon Sanderson and others (London: J & A Churchill, 1873).

<sup>5</sup> Stewart Richards, 'Drawing the Life-blood of Physiology: Vivisection and the Physiologists' Dilemma, 1870-1900', *Annals of Science*, 43 (1986), 27-56 (pp.40, 46).

<sup>6</sup> James Turner, p.106.

<sup>7</sup> Richard D. French, *Antivivisection and Medical Science in Victorian Society* (London: Princeton University Press, 1975), p.8.

readers ‘shivering on the shore’ outside the laboratory door.<sup>8</sup> In an attempt to transpose the terminology and expertise from one discipline to another, Hageby and Schartau manipulated their readers’ implicit understanding of popular science and literature gleaned from earlier fictional texts concerned with the scientific pioneer.

The opening chapter of *The Shambles of Science* describes the scene unfolding in front of Hageby and Schartau at University College London:

Armed with scalpel, microscope, and test-tube, the modern physiologist 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. (p. 3)

The textual image fuses the ‘workshop of filthy creation’ 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.<sup>9</sup> 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’.<sup>10</sup> It is reasonable to presume that the readers of *The Shambles of Science* would have been familiar with Luigi Galvani’s experiments on the electrical basis of nerves and their influence upon Shelley’s novel.<sup>11</sup> The use of hyperbole provides the chapter with an opening narrative hook seducing the reader to explore further what they feel is already familiar scientific territory. By casting the vivisector as an agent of warfare against Nature, with a capital ‘N’, Hageby and Schartau enter the battle themselves ‘with a pen in one hand and a sword in the other’.<sup>12</sup>

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<sup>8</sup> Lucy Bending, *The Representation of Bodily Pain in Late Nineteenth-Century English Culture* (Oxford: Clarendon Press, 2000), p.137.

<sup>9</sup> Mary Shelley, *Frankenstein* (Oxford University Press, 1993), ed. by Marilyn Butler, p. 36.

<sup>10</sup> Mary Shelley, p.30.

<sup>11</sup> Luigi Galvani (1737-1798) was an Italian physician who discovered that the muscles of dead frogs twitched when stimulated by a spark. See John Gribbin, *Science: A History* (London: Penguin, 2003), pp. 288-89.

<sup>12</sup> Frances Power Cobbe, *A Charity and a Controversy: Address by Frances Power Cobbe at the Annual Meeting of the Victoria Street Society* (London: Victorian Street Society for the Protection of Animals, 1889), pp. 1-4(p. 1).

Vivisection is a compound word comprised of the word *vivus*, meaning living and *sectio*, meaning cutting. It literally means the cutting of living bodies.<sup>13</sup> The practice is not to be confused with dissection, the cutting of a dead body. As Vernon Lee calculated so precisely in 1882, if the physiologist ‘has only the corpse; he has the living thing without its life, the sentient thing without its sensation; the organism with its functions stopped, the vast organic laboratory with its chemistry suspended.’<sup>14</sup> Therefore, in order for scientists to discover how the living body functioned they had to perform repeated painful operations on living creatures to discover the principles governing thinking, seeing and feeling. Due to the high level of suffering involved in vivisection operations, the anti-vivisectionists believed that pain would beget pain and 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.<sup>15</sup>

Activists thought 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.<sup>16</sup> In 1875, 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’.<sup>17</sup> The anti-vivisection movement believed medical students were vulnerable to the moral persuasion of their mentors, who often held the

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<sup>13</sup> Andreas-Holger Maehle and Ulrich Tröhler, ‘Animal Experimentation from Antiquity to the End of the Eighteenth Century: Attitudes and Arguments’, in *Vivisection in Historical Perspective*, ed. by Nicolaas Rupke (London: Croom Helm Ltd, 1987), pp. 14-47(p. 14).

<sup>14</sup> Vernon Lee, ‘Vivisection: An Evolutionist to Evolutionists’, *Contemporary Review*, May 1882, pp.788-811(p. 790).

<sup>15</sup> See Frances Power Cobbe, ‘Vivisection and Its Two-Faced Advocates’, *Contemporary Review*, January 1882, pp. 610-26 for a detailed discussion of the ‘hardened sensibilities’ of the vivisector.

<sup>16</sup> Robert Louis Stevenson, *The Strange Case of Dr Jekyll and Mr Hyde and Other Tales of Terror*, ed. by Robert Mighall (London: Penguin, 2002).

<sup>17</sup> Lewis Carroll, ‘Some Popular Fallacies Regarding Vivisection’, *Eclectic Magazine*, August 1876, pp. 221-23, repr. in *Heart and Science*, ed. by Steve Farmer (Plymouth: Broadview, 1996), pp. 341-49 (p. 345). Lewis Carroll was the pseudonym used by Charles Lutwidge Dodgson in his literary publications.

position of surrogate scientific father and, in this role, were authorised with an immeasurable power. Touching on this theme, Sir George Humphry, Professor of Physiology at Cambridge University, dismissed the threat of the demoralisation of the scientist. He emphasised that, ‘it is the motive that reveals the hardened heart, not the act’.<sup>18</sup> Humphrey supported his opinion by drawing attention to the fact that even before the use of anaesthetics, surgeons who were ‘used to inflicting long, continued severe and horrible pains’ on humans were not considered to be callous.<sup>19</sup>

Pain and power supported the central truth of the anti-vivisection argument and both sides of the debate were keen to alleviate the level of suffering experienced by animals but differed in their understanding of pain. In a passage that carries heavy connotations of ‘The House of Pain’ in H. G. Wells’s *The Island of Doctor Moreau*, Hageby and Schartau recall the atmosphere of the laboratory just before an experiment is about to commence on a dog:<sup>20</sup>

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. (p. 19)

The above ‘chorus’ echoes the ‘voices’ heard from Moreau’s laboratory and consequently the narrator-protagonist Prendick’s notion that ‘all the pain in the world had found a voice’.<sup>21</sup> Hageby and Schartau rely on sensory audible tactics to titillate the dread of an impending operation. It is a vocal text with the flavour of a musical script. Strategically placed at regular intervals are key choral allusions that work in harmony tightening and relaxing the narrative.

The opening long vowel pattern paints a picture of a pack of dogs, barking in a somewhat threatening manner. It is not immediately apparent that the ‘chorus of inarticulate

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<sup>18</sup> G. M. Humphry, *Vivisection: What Good has it Done?* (London: J. W. Kolckmann, 1882), pp. 4-8.

<sup>19</sup> Theodore G. Obenchain, *The Victorian Vivisection Debate* (London: McFarland & Co, 2012), p. 148.

<sup>20</sup> H. G. Wells, *The Island of Dr Moreau*, ed. by Patrick Parrinder (London: Penguin Group, 2005). ‘The House of Pain’ was the name Dr Moreau’s ‘victims’ called his laboratory where Moreau explored the ‘plasticity of living forms’ in order to create humanised animals. See pp. 91, 71.

<sup>21</sup> H. G. Wells, p. 38.

voices' represent human beings and Hageby and Schartau manipulate the bestial connotation until it exhausts itself and once the operation commences, a distinction is demanded between spectator and participant. Once the demonstrator enters the laboratory, the clamorous audience becomes human as it prepares itself for 'an hour's amusement' (p.18). At this point, Hageby and Schartau move the scene centre-stage and begin to detail the experiment. 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 (p. 21). The dog is muzzled but struggles constantly throughout the operation and when successive 'stimulation' is applied he begins to 'work his shoulders like cut wings [...] trying to tear off the strings to get loose' (p. 20). The narrative is keen to focus on the animal's distress brought about by the apparent lack of pain-relief offered by the vivisector.<sup>22</sup> The raucousness grows as it becomes apparent that the operation will not proceed as planned. The canine characteristics, which continually shape-shift between human and non-human bodies illuminate 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 on them, whilst they are still alive.

In ironic contrast to this disturbing textual image, the chapter is entitled 'Fun' and the two women authors make fifteen references to 'jocularity' throughout the short section of notes. However, at times the use of irony and sarcasm appears puerile and undermines their argument. This is clear during the account of an operation to insert a 'cannula in the duct of the submaxillary gland' of a dog (p. 22). When it becomes apparent to the lecture audience that the procedure is likely to fail, Hageby and Schartau attempt to undermine the sincerity of scientific professionalism by issuing satirical retorts that 'laughter and applause' is

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<sup>22</sup> Anaesthesia was rarely used in operations as it paralysed the body and so an accurate reading of the body's sensory functioning could not be obtained. For a contemporary discussion of anaesthesia and its uses in physiology, see Hageby and Schartau, pp. 149-69.

welcomed, if not expected by the students in place of medical inquiry (p. 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 expressed over Sanderson's *Handbook* that an individual who enjoys the music hall would be likely to return home and vivisect for its entertainment value.

Hageby and Schartau's description of the operation carries all the characteristics of sensationalist theatre. The appearance of *The Shambles of Science* post-dates the peak in sensation fiction of the 1860s and 1870s but the emotive topic of vivisection lent itself to the repetition of many of the characteristics that defined that genre. Lyn Pykett interprets sensational journalism as a form of 'creeping contagion' and *Shambles'* accounts of operations that 'touched the heart, squeezed the lungs [and] pinched the blood vessels' (p. 53) danced between fact and fiction in identical fashion to the newspaper accounts of court cases, poisonings and murders that fed into sensation fiction.<sup>23</sup> It is difficult to classify the genre of *The Shambles of Science* as either a medical record or a sensation-fiction, as it blurs the boundaries between these discourses. It is clear that the two women authors employed emotive descriptions of animal experimentation in order to amplify the anti-vivisection cause. For this reason, there is always the possibility that *Shambles's* narrative could be read as a hysterical over-reaction to the vivisection debate by the lay-person unaware of the factual basis of the text.

The uniqueness of *The Shambles of Science* is the frequency with which Hageby and Schartau place their readers in such close proximity to vivisected animals without considering

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<sup>23</sup> Lyn Pykett, *The Sensation Novel: From The Woman in White to the Moonstone* (Plymouth: Northcote House Publishers Ltd, 1994), p. 2.

the sensibilities of their unsuspecting audience. Although Hageby and Schartau devote part of the text to simple explanatory procedures such as the history of anaesthesia, graphic accounts of vivisection operations are slotted into the text at regular intervals, echoing the practice of publishing sensationalist literature by instalment. As the reader passes through *The Shambles of Science* the graphic images act as textual stepping stones with each instalment building momentum until the reader is 'left with nerves as taut as the laboratory animal' – to echo Jessica Straley's depiction of *Heart and Science*.<sup>24</sup>

The dog struggled throughout the operation and was still alive when it was taken from the lecture room to be operated on again. This was a serious infringement of The Cruelty to Animals Act of 1876, which stated that a vivisected animal is not to be revived after one experiment and used for another.<sup>25</sup> Although the identity of the vivisector would have been unknown to the majority of *Shambles of Science's* readers, Professor William Bayliss was identifiable to those in the field from the date and location of the lecture and indeed, upon publication, Bayliss sued the authors' publicist Stephen Coleridge for libel in order to protect his reputation.<sup>26</sup> Although Hageby and Schartau were keen to emphasise in their preface that *The Shambles of Science* was not meant to be a personal attack, but an indictment against the system, they lost the case. The Chief Justice ordered Hageby and Schartau to remove the chapter entitled 'Fun' and replace it with a full account of the trial.<sup>27</sup> *The Shambles of Science* was a pioneer text in that it provided a potential platform for the much marginalised female

<sup>24</sup> Jessica Straley, 'Love and Vivisection: Wilkie Collins's Experiment in *Heart and Science*', *Nineteenth-Century Literature*, 65 (2010) 348-73 (p. 356).

<sup>25</sup> The Cruelty to Animals Act was passed in 1876 to regulate the use of vivisection. The first bill was drafted to regulate the use of living animals in scientific experiments and was presented to the House of Lords on 4 May 1875. Susan Hamilton, Ed., 'Introduction', in *Animal Welfare & Antivivisection 1870-1910: Nineteenth-Century Woman's Mission*, 3 vols. (London: Routledge, 2004), I, p. xxi. For a more extensive discussion on the Act, see Richard D. French, pp. 113-58; Theodore G. Obenchain, *The Victorian Vivisection Debate* (London: McFarland & Co., 2012), pp. 90-92; Susan Hamilton, p. xxiv.

<sup>26</sup> The Rt Hon Stephen Coleridge (1854-1936), great-grandson of poet Samuel Taylor Coleridge (1772-1834) was an active member of the Victorian Street Society.

The Victorian Street Society (VSS) was founded in 1876 by Frances Power Cobbe. It later became known as The British Union for the Abolition of Vivisection. See Coral Lansbury, *The Old Brown Dog* (London: University of Wisconsin Press, 1985), pp. 9-10.

<sup>27</sup> Coral Lansbury, pp.10-12.

voice of scientific reason, but the predominately male judicial and medical community supported each other and silenced Hageby and Schartau's voice as effectively as Bayliss muzzled the laboratory dog.

Many late-Victorian women recognised their own oppression 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.<sup>28</sup> These women felt that operations on live animals were simply an extension of experiments taking place on working-class women and mentally-ill patients on charity wards. English doctor, Anna Kingsford noted that operations on working-class women patients were commonly performed without any form of anaesthetic and judged that 'paupers are thus classed with animals as fitting subjects for painful experiments'.<sup>29</sup>

Although Hageby and Schartau focus on animal experimentation, their opening portrait of the 'modern physiologist' is studded with word clusters alluding to female rape, casting the vivisector as predator. The initial chapter of *The Shambles of Science* unfolds with an account of the vivisector preparing the laboratory bench to 'attack the problems of life' by wrenching the 'jealously-guarded secrets' from the 'bosom of Nature' (p. 3). The two women transpose the tension of the laboratory into feminine societal concerns that had earlier received considerable attention from the popular press.

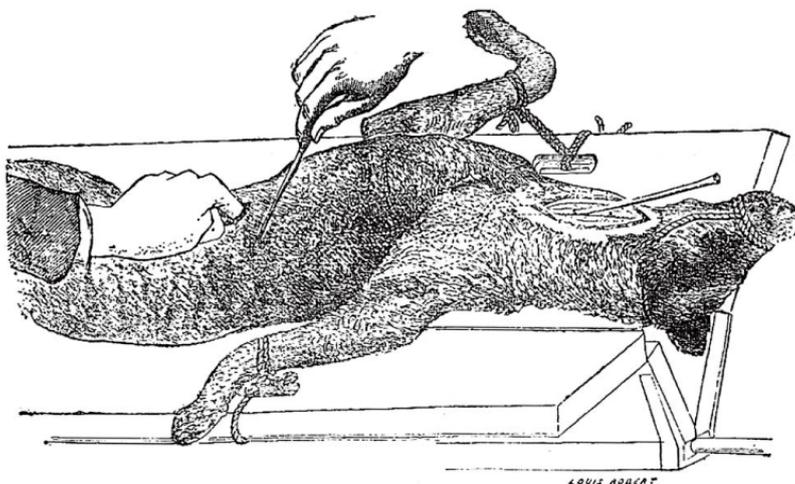
In 1889, Frances Power Cobbe was instrumental in distributing numerous placards showing images of vivisected animals sourced from continental texts (See **Fig. 1**). These images echoed the nature of gynaecological experiments performed by scientific pioneers

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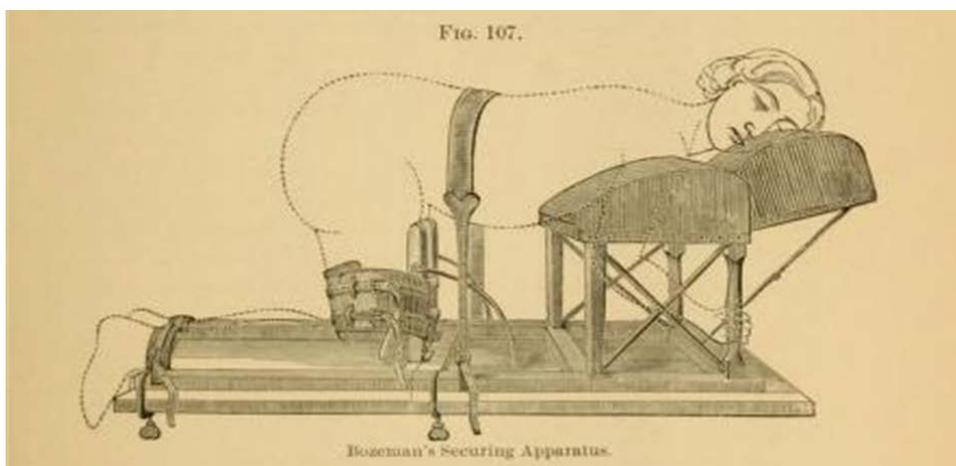
<sup>28</sup>See Coral Lansbury; Greta Depledge, 'Heart and Science and Vivisection's Threat to Women', in *Wilkie Collins: Interdisciplinary Essays*, ed. by Andrew Mangham (Newcastle: Cambridge Scholars, 2007), pp. 149-62 (p. 162).

<sup>29</sup>Edward Maitland, *Anna Kingsford: Her Life, Letters, Diary, and Work*, 2 vols. (London: George Redway, 1896), I, p. 82. This account was first published under Edward Maitland's name in a letter to the *Examiner*, 17 June 1876.

(Fig. 2). Cobbe also referred to the vivisectors as a gang of ‘Jack the Rippers’ in her address to the Annual Meeting of the Victoria Street Society that same year.<sup>30</sup>



**Fig. 1** Dog immobilised on the vivisection table from Claude Bernard, *Leçons de Physiologie Opératoire* (Paris: Baillière, 1879), p.282, repr. in Frances Power Cobbe, ‘Light in Dark Places’, in *Anti-Vivisection Pamphlets* (London: Victoria Street Society, [1883]), pp. 1-31 (p. 22).  
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**Fig. 2** Bozeman's Securing Apparatus for a woman undergoing a gynaecological examination during the closing decades of the Victorian period. *A System of Gynecology by American Authors*, ed. by Matthew D. Mann, 2 vols (Edinburgh: Young J. Pentland, 1888), II, p. 409.  
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Hageby and Schartau were therefore writing at a time when the Jack the Ripper murders would have figured in the imagination of their readers, especially as speculation grew that

<sup>30</sup> Frances Power Cobbe, *A Charity and a Controversy*, p. 3.

‘Jack’ was a doctor with a penchant for vivisection.<sup>31</sup> A clear trajectory can be traced between the dates of the Ripper murders, gynaecological experimentation and operations taking place within the vivisection laboratory, although this is not to confirm that vivisectionists were considering replacing non-human with human participants.

Whilst Hageby and Schartau do not address the threat to the female body through vivisection directly, they do address their women readers by wrapping the text in a maternal shroud. They cast the vivisector in the role of a Herod figure and describe the actions of a vivisected frog as like those of an infant.<sup>32</sup> Unlike the objective nature typical of scientific writing, they address the reader directly and enquire whether they have noticed the actions of the frog. 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 (p. 12). It is fair to speculate that a considerable number of *Shambles of Science*’s readers would not have had any first-hand scientific experience and therefore, they would have interpreted 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 (p. 14). For the scientific novice, the reading would have done little to improve their understanding of scientific investigation and the true workings of the laboratory. Indeed, the trials of the frog bring to mind the ‘sobs and gasps’ emitted by the female Puma at the hands of Moreau in ‘The House of Pain’.<sup>33</sup>

If Hageby and Schartau draw on positive maternal sentiment to invoke their readers’ sympathy towards the animals being experimented on, they also exploit their implied readers’ religious antipathy towards Catholicism in order to vilify the experimenter. Not only is the

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<sup>31</sup> It was speculated that the ‘Jack the Ripper’ murders (1888) were performed by a vivisectioning doctor. See Colin Milburn, ‘Science from Hell: Jack the Ripper and Victorian Vivisection’, in *Science Images and Popular Images of the Sciences*, ed. by Bernd Huppau and Peter Weingart (Routledge, 2007), pp. 125-58; Mary Ann Elston, ‘Women and Anti-vivisection in Victorian England, 1870-1900’, in *Vivisection in Historical Perspective*, ed. by Nicolaas Rupke (London: Croom Helm, 1987), pp. 259-94 (p.281).

<sup>32</sup> See parallel Biblical passage on King Herod and the Massacre of the Innocents in Matthew 2.16-18.

<sup>33</sup> H. G. Wells, p. 50.

vivisector implicitly constructed as a Herod-like figure in this Massacre of the Innocents, but the authors also directly describe him as follows:

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. (p. 20)

The ‘priest of vivisection’ contains heavy connotations of Catholicism and the Inquisition. By this stage in the text, Hageby and Schartau had 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 Hageby and Schartau to invite him in and out of the text when appropriate. The ‘priest of vivisection’ appears an oxymoronic profession. Recognised as God’s representative on earth, the priest was considered by the majority of society as healer of sin but *The Shambles of Science* draws him as a common slaughter man, unconcerned with the implications of his work. This also aligns him again with both Moreau and Frankenstein, who each desired to create a race of beings that would worship them as their creator.

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’.<sup>34</sup> Indeed, the shambolic procedure undertaken in the chapter entitled ‘Fun’ deals with a study of ‘psychic secretion’ (p. 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 are surprised to see the food fall onto the floor of the laboratory. This episode, therefore, literally enacts this aspect of the book’s title. Employed as a subtle metaphor, the word ‘shambles’ initially appears simply to address the chaotic nature of science’s march to the future but it also silently sits on every page, in every

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<sup>34</sup> ‘Shambles’, in *Oxford Thesaurus of English* (Oxford: Oxford University Press, 2009), p. 786.

experiment acting as a moral totem-pole by which the reader judges their own reaction to animal experimentation.

The cult of the Victorian pet provided Hageby and Schartau with an audience already sensitive to the needs of animals.<sup>35</sup> Victorians sought to understand and justify the intense connection they felt for their pets. John Berger states that Victorian pet owners felt they could ‘be to their pet [what] they could not be to anybody or anything else’.<sup>36</sup> The working-classes’ support of anti-vivisection lay primarily with the interests of Battersea Hospital (The National Anti-Vivisection Hospital founded in 1896) and the threat of human experimentation.<sup>37</sup> However, as Teresa Mangum illustrates, amongst the middle classes there was a profusion of animal memorials and an intensified attachment to animals in this period and this cult of the pet played a large role in subsequent anti-vivisection discourses.<sup>38</sup>

In the chapter entitled ‘Scarcely any Anaesthetic’, a ‘white fox terrier’ 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 as a result of a hole bored through the skull (p. 37). 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’ (p. 38). They mention that only morphia has been applied to offset the pain. The unexpected happens and a new stimulation is noticed which produces laughter from the ‘spectators’. Immediately after the announcement, 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 this morning’ (p. 39). They personalise the dog by noting that it had

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<sup>35</sup> For example, see Chen-hui Li, ‘Mobilising Literature in the Animal Defence Movement in Britain, 1870 – 1918’, *Concentric: Literary and Cultural Studies* 32 (2006), 27-55 (p.46) for an example of major and minor nineteenth and early twentieth-century novelists and dramatists who actively supported an animal rights cause.

<sup>36</sup> John Berger quoted in Teresa Mangum, ‘Animal Angst: Victorians Memorialize their Pets’, in *Victorian Animal Dreams: Representations of Animals in Victorian Literature and Culture*, ed. by Deborah Denenholz Morse and Martin A. Danahay (Hampshire: Ashgate, 2007), pp. 15-34 (p. 20).

<sup>37</sup> See Coral Lansbury, pp. 13-15, for a discussion on the relationship between Battersea hospital and the anti-vivisection debate.

<sup>38</sup> See Teresa Mangum, pp. 15-34, for a more detailed analysis of the mourning and cult of the Victorian pet.

‘brown and black spots on the muzzle and ears’ (p. 40), and it was likely that many a pet owner would have glanced at their own pet following this passage, to see how closely it met with this description. As Hilda 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.<sup>39</sup> Terriers were the breed of choice used in vivisection fiction as the companion pets of the vivisectors’ wives. These pets were often depicted as the confidant of the wife but commonly fell prey to the vivisector when the marital relationship deteriorated beyond repair.<sup>40</sup> This intimate connection between women and their pets taps into the anguish that Hageby and Schartau struggled with as they attempted to record dispassionately the scenes confronting them. Just before Hageby and Schartau take their leave from the laboratory, the terrier, in ‘utmost agony’ opens and shuts his ‘clear brown eye several times’, with an expression they say they never forgot (p. 40). If the readers of *The Shambles of Science* were inexperienced medically and struggled to form judgements on whether the experiments were valuable to humanity, the image of the mangled terrier would have brought the vivisector from the professional sphere into the bosom of domesticity, and scientific reason would have had little to do with their appreciation of this particular science.

Literary writers often cast pets as surrogate children and the primary companion for many individuals, both men and women alike, and it was common for anti-vivisection propaganda to exhibit literature employing images of recognisable pets.<sup>41</sup> As a common household pet and ‘man’s best friend’ (the *OED* traces the first written usage of this adage to 1841), the repeated depiction of dogs as the victims of vivisection both in Hageby and

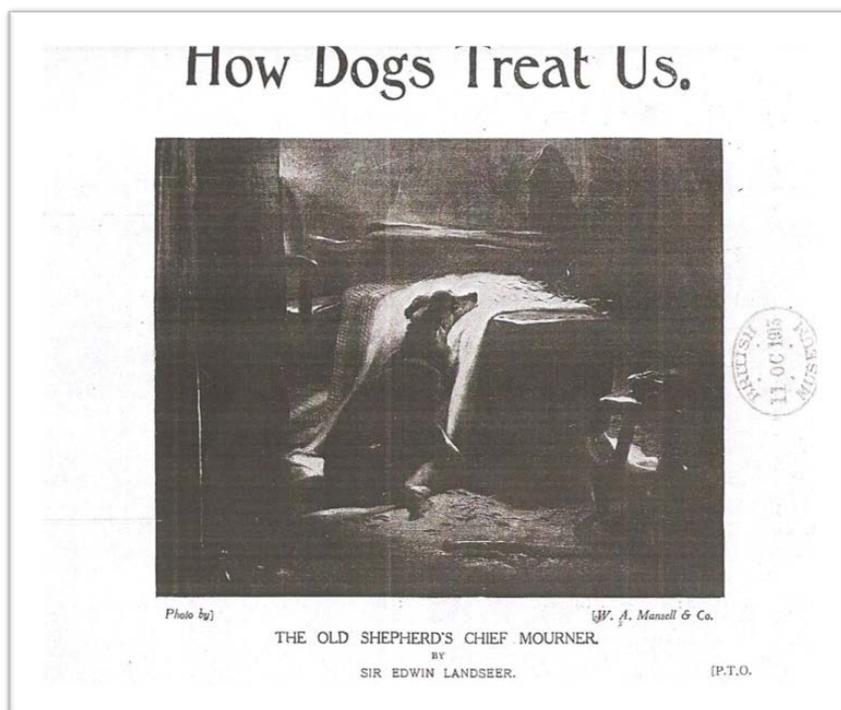
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<sup>39</sup> Hilda Kean, *Animal Rights* (London: Reaktion Books, 1998), p. 98.

<sup>40</sup> See Florence Marryat, *An Angel of Pity* (London: Hutchinson & Co., 1889) and Sarah Grand, *The Beth Book* (London: Chatto and Windus, 1897) for sample texts of the vivisector operating on the pet companion of his wife.

<sup>41</sup> Florence Marryat’s *An Angel of Pity* is a sample text of animals acting as surrogate family members. In the novel, Bran, an Airedale terrier, acts as a substitute child of the vivisector’s wife, Rose Gordon, whilst a small lap dog, Bee, compensates for John Gascoigne’s absent family.

Schartau's text and beyond helps to invoke the middle-class Victorian reader's sympathy.<sup>42</sup> The Anti-Vivisectionist Society deployed similar pictorial images in their pamphlets, drawing attention to the unequal relationship between the dog's loyalty to its owner until death (Fig. 3), versus humans' exposure of their household pets to harm for their own medical betterment (Fig. 4).



**Fig. 3** Edwin Landseer, *The Old Shepherd's Chief Mourner* (1837), Victoria and Albert Museum, London, reproduced and bound in Stephen William Buchanan Coleridge, [*Tracts and Leaflets by the Hon. S. W. B. Coleridge on vivisection, included in a collection of the publications of the Victoria Street Society for the Protection of Animals from Vivisection, afterwards the National Anti-Vivisection Society.*] (London: National Anti-vivisection Society, [1910]).  
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<sup>42</sup> 'man, n. 1 (and int.)', in *OED Online*, Oxford University Press, September 2014, <<http://www.oed.com/view/Entry/113198?redirectedFrom=man%27s+best+friend#eid38357852>> [accessed 8 September 2014].



**Fig.4** Illustration showing the fastening of a dog to a vivisection bench originally published in the *Catalogue of Apparatus and Appliances for Experiments on Animals* (Berlin: F & M Lautenschlager, 1902), reproduced in Stephen William Buchanan Coleridge, [*Tracts and Leaflets by the Hon. S. W. B. Coleridge on vivisection, included in a collection of the publications of the Victoria Street Society for the Protection of Animals from Vivisection, afterwards the National Anti-Vivisection Society.*] (London: National Anti-vivisection Society, [1910]).

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Indeed, to amplify their voice, the earlier activist writers of the mid 1870s adopted a tactic of reproducing physiological images from specialist periodicals and editing the explanatory details to favour the cause.<sup>43</sup> This resulted in Russian born physiologist, Elie de Cyon, for example, charging the activists of ‘dishonesty of interpretation’ and ‘favourable editing’.<sup>44</sup> Although Hageby and Schartau state in their preface that they wish to ‘speak as doctors and confront science with its own language’, they adopt a similar device. They add information to the 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 (p.

<sup>43</sup> See Frances Power Cobbe, *Light in Dark Places* (London: Victoria Street Society, 1883), pp. 1-31. Elie de Cyon, ‘The Anti-Vivisection Agitation’, *Contemporary Review*, April 1883, pp. 498-511.

<sup>44</sup> Elie de Cyon, p. 499. Cyon accused Cobbe of doctoring the accompanying text of vivisection illustrations reproduced in anti-vivisection propaganda that were sourced from Cyon’s *Methodik der Physiologischen Experimente und Vivisection mit Atlas* (St Petersburg: Carl Ricker, 1876).

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. (p. 70)

The narrative is sandwiched between the bodies of two dead dogs. 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. Additionally, both images conjure up martyred images of self-sacrifice, a common theme of anti-vivisection propaganda. More importantly, both dogs appear to have been the recipients of devotion during their short lives and Hageby and Schartau are keen to promote that love is an inadequate shield to protect your cherished ones from the laboratory.

In 1889, physiologist Michael Foster was invited to speak to a select crowd of scientists on the topic of ‘The Prevention of Hydrophobia’. In his speech, Foster states:

You, My Lord Mayor, are aware that in this country those who pursue a certain branch of science are put upon a criminal footing and are allowed to pursue scientific investigations only upon ‘ticket of leave’.<sup>45</sup>

He further emphasises that ‘in France, it is possible for every man of science to pursue his investigations without trammel and molestation’.<sup>46</sup> Foster’s comments raise an important facet of the anti-vivisection debate; the pro-vivisectionists and practicing operators did not hide their findings behind closed doors, despite the image that the anti-vivisection activists wished to project. Physiologists were vocal in their defence against the anti-vivisectionists,

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<sup>45</sup> Michael Foster quoted in Herbert J. Reid, *Ticket of Leave* (London: Anti-Vivisection Society, 1889), p. 3.

<sup>46</sup> Michael Foster quoted in Herbert J. Reid, p. 9.

whom they believed to be ‘maniacs’, ‘old maids’ and ‘abortive musicians’.<sup>47</sup> In fact, de Cyon advises the lay-public to read his own publications and decipher the facts for themselves rather than rely on the ‘mutilated’ and ‘distorted’ quotations promoted by the anti-vivisectionists.<sup>48</sup> De Cyon was one of the few physiologists singled out by the movement for selective rhetorical quotation. As Susan Hamilton has noted, anti-vivisection writers employed an assemblage of key texts to act as primers for their readership. No matter what the reader read, the same message prevailed.<sup>49</sup>

This tactic secured the vivisectionists an identity but language is not a neutral device. For this reason, it was essential that Hageby and Schartau embrace a writing style that spoke to a diverse audience. A tactic they employed was to adopt the fashionable reading genre of the day. By the time the fifth and final edition of *Shambles* appeared in 1913, which is the focus of this article, the original format had changed from a set of lecture notes to a collection of short stories. Each segmented account of the laboratory offered the prospect of terror with the added possibility of exorbitant punishment on those that step outside the norm, namely the demonstrator and students. The sense that normal values could suddenly become inverted applied to much of Gothic literature and *Shambles* took on a hybrid flavour of the emotionality of sensation fiction spiced with the dark imaginings of Gothicism. Hageby and Schartau drew on all that represented the gothic that was chaotic, dark and labyrinthine and added accounts of the laboratory spiked with the cruelty that shadowed the Inquisition. By the time the fifth edition had arrived each chapter was prefaced with a quote by a leading literary figure, such as Alexander Pope, Alfred Lord Tennyson, Robert Browning, and Victor Hugo. This strategy placed the text in a wider canon of literary fiction rather than scientific literature.

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<sup>47</sup> Elie de Cyon, pp. 499, 501.

<sup>48</sup> Elie de Cyon, p. 499.

<sup>49</sup> Susan Hamilton, ‘Reading and the Popular Critique of Science in the Victorian Anti-Vivisection Press: Frances Power Cobbe’s Writing for the Victoria Street Society’, *Victorian Review*, 36 (2010), 66-79 (p.67).

A book that can be read very much as a response to the *Shambles of Science* is Leonard Graham's novella *The Professor's Wife* (1881). Graham presents the unusual feature of a selection of key anti-vivisection primary sources relating to events that were extensively covered in the Press and specialist periodicals.<sup>50</sup> As the novella is now relatively unremembered, I will briefly summarise the plot. Beatrice Greywell is an orphan left to the care of her elderly Uncle Gerald. Whilst visiting her cousins, she is introduced to the celebrated physiologist, Eric Grant and after a short courtship, their marriage 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 that she has unwittingly provided the financial support for her husband's research into brain fever through her dowry. Shortly after her marriage, Beatrice exhibits signs of a mysterious neurological illness and when she unexpectedly gains 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 contact with her but Grant permits his continental colleagues to monitor her condition in order to advance research on brain fever. After her inevitable death, Grant becomes isolated and detached from both his colleagues and his research.

It is common for *The Professor's Wife* to be relegated to the footnotes of 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. 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, and as demonstrated by the

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<sup>50</sup> Leonard Graham, *The Professor's Wife* (London: Chatto and Windus, 2003). Graham's notes refer to the records of the High Commission of 1881 recorded in the Blue Book, excerpts from the *Lancet*, Sanderson's *Handbook* and Press cuttings quoting the medical use of anaesthesia.

evolution of Hageby and Schartau's text. The majority of Graham's characters are thinly veiled characterisations of their real-life counterparts. This is evident from Grant's statement concerning the need to restrict the publication of scientific research for a lay-audience:

Two 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. (p. 139)

This is a direct reference to the chapter entitled 'Fun' from *The Shambles of Science* and connects Grant with Bayliss. It is worth noting, that this quotation raises speculation over the publication date of *The Professor's Wife: The Shambles of Science* was published in 1903 whilst the title page of *The Professor's Wife* holds the date of 1881. The anti-vivisectionist periodical *The Zoophilist* contained a review of Graham's text on 2 May 1881, and continued to promote *The Professor's Wife* for the following six months.<sup>51</sup> The activists distributed pamphlets and literature through various anti-vivisection venues, and there is a strong possibility that Hageby and Schartau adopted the same tactic with extracts of *Shambles*. As *Shambles* is distinctive in being published by 'two students', and the passage does not make mention of the Coleridge vs. Bayliss case, an earlier version of the text in pamphlet form may have provided the foundation for *The Professor's Wife*, which could account for the publication of Graham's text before the first edition of *Shambles* in 1903.<sup>52</sup>

If Grant dismisses *Shambles*, however, this is literally only 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 *Shambles*, Beatrice has lost her own voice as a result of her condition. Grant is an emotionally tightly-rolled character, however, and it is only through his wife that he can be read. Beatrice's 'story' enables Graham to re-open the case and give back the previously

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<sup>51</sup> 'The Professor's Wife', *The Zoophilist*, 2 May 1881, pp. 4-5.

<sup>52</sup> Hageby and Schartau showed their unpublished diary to Coleridge on 14 April 1903 and the Coleridge vs. Bayliss trial took place between 11 and 15 November 1903. For details of the publication of *The Shambles of Science* and events that lead to court case, see Coral Lansbury, pp. 9-12.

silenced voices of Hageby and Schartau. Free from legal restrictions, fiction relished the possibility of giving the vivisector a moral retrial. The passing of the Animal Cruelty Act (1876) did technically 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, however, as the majority 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. (p. 96)

The ease with which Grant implies that the medical community could manipulate legislation by carefully selecting their words so as to actively make legal loopholes echoes the vivisector's passing the restraining ropes through the slotted holes in the vivisection benches to manoeuvre another body into a favourable position.

Although Hageby and Schartau provide graphic images of vivisection operations, they do not generally flesh out the body of the vivisector but focus primarily on the plight of the animals. At times it is apparent that the two women struggled to distance themselves emotionally from their subject and, for this reason, it is questionable whether Hageby and Schartau delivered a true representation of science. Graham, on the other hand, exhibits how the vivisector can be constructed as more of a threat through fiction. However, the two texts unite in thrusting the vivisector into the public arena without, it appears, giving any thought to the personal ramifications to the scientific individual. Contrary to public opinion, medical science did not always beaver away behind closed doors but as George Gore stated at the beginning of this article it was and is 'far more easy [*sic*] to challenge experimentalists to prove their statements than to acquire the ability to understand their proofs'.

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