

Necessary Torture? Vivisection, Suffragette Force-Feeding, and Responses to Scientific Medicine in Britain c. 1870–1920

IAN MILLER ★

ABSTRACT. One of the primary aims of late nineteenth-century laboratory experimentation was to ground understandings of illness and disease within new regimes of science. It was also hoped that clinical practice would become increasingly complemented by discoveries and technologies accrued from emergent forms of modern medical enquiry, and that, ultimately, this would lead to improved diagnostic and therapeutic procedures that could be applied to a wide variety of medical complaints. This met with resistance in Britain. So far, analyses of the British reception to forms of scientific medicine have focused on a science versus intuition dichotomy. This article aims to address other aspects intertwined in the debate through an exploration of alternative representations of the medical scientist available and the relation of this to perceptions of clinical practice. Using new technologies of the stomach as a case study, I shall examine how physiologists approached digestion in the laboratory, the responses of antivivisectionists to this, the application of gastric innovations at the clinical level, and the impact of the use of the stomach tube in the suffragette force-feeding controversy. **KEYWORDS:** forcible feeding, stomach tube, vivisection, laboratory medicine, suffragettes, digestion.

★ Ian Miller, Centre for the History of Science, Technology and Medicine, Brunswick Street, Manchester, M13 9PL. Email: ianmiller_2004@yahoo.co.uk.

The author wishes to thank Laura Kelly and Pauline, Kevin, Sarah, and Katie Miller. This project has been kindly funded by the Bardhan Research and Education Trust (BRET). The author also wishes to thank Dr. Ian Burney, Professor Michael Worboys, John Pickstone, and Professor Christoph Gradmann for their academic guidance.

JOURNAL OF THE HISTORY OF MEDICINE AND ALLIED SCIENCES, Volume 64, Number 3

© The Author 2009. Published by Oxford University Press. All rights reserved.

For permissions, please e-mail: journals.permissions@oxfordjournals.org

Advance Access publication on April 8, 2009

doi:10.1093/jhmas/jrpo08

ONE of the primary aims of late nineteenth-century laboratory experimentation was to ground understandings of illness and disease within new regimes of science. It was also hoped that clinical practice would become increasingly complemented by discoveries and technologies accrued from emergent forms of modern medical enquiry, and that, ultimately, this would lead to improved diagnostic and therapeutic procedures that could be applied to a wide variety of medical complaints.¹ Although such ideas appeared worthy in theory, particularly given their inherent claims for the relief of patient suffering, the incorporation of laboratory medicine into clinical practice was not fully implemented in Britain.² Its inclusion met with particular resistance in the country, a situation typically attributed to tension between traditional and modern medical ideologies. John Lesch has discussed how British systems of medical education placed less emphasis on scientific research, not least because an emphasis on traditional clinical practice placed the profession in a better position to tackle the variety of health problems brought about by the challenges of the Industrial Revolution.³ Christopher Lawrence, meanwhile, has suggested that the desire of the cultured, gentlemanly physician to retain his social prestige, most notably via his stubborn continuation in employing the traditional methods embedded within his general education, was the primary reason behind a lack of enthusiasm for new practices. The British clinician, according to Lawrence, hoped to maintain perceptions of his work as an intuitive, clinical art rather than technological, scientific practice, not least because new diagnostic procedures threatened to make the art overly mechanical,

1. For a general overview of the relationship between science and medicine in this period, see William F Bynum, *Science and the Practice of Medicine in the Nineteenth Century* (Cambridge: Cambridge University Press, 1994).

2. For work on the development of British physiology see Lynn Bindman, Alison Brading, and Tilli Tansey, eds., *Women Physiologists: An Anniversary Celebration of Their Contributions to British Physiology* (London: Portland Press, 1993); Robert G. Frank, *Harvey and the Oxford Physiologists: Scientific Ideas and Social Interaction* (Berkeley and London: University of California Press, 1980); and Gerald L. Geison, *Michael Foster and the Cambridge School of Physiology: The Scientific Enterprise in Late Victorian Society* (Princeton, NJ: Princeton University Press, 1978).

3. John E. Lesch, *Science and Medicine in France: The Emergence of Experimental Physiology 1790–1855* (Baltimore, MD: The Johns Hopkins University Press, 1967).

resembling the work of the artisan rather than that of the refined gentleman.⁴

I shall suggest that the behavior of British physicians in this period can be more fully understood by looking beyond a science versus intuition dichotomy. This is not to deny the relevance of claims made by historians such as John Harley Warner, who has suggested that by the end of the nineteenth century the arbitration of claims about new relationships between medical science and clinical practice was mostly a matter of debate among practicing physicians rather than between scientists and clinicians. There is certainly a need for close analytical attention to be paid to the dialogue between medical practitioners in order to fully understand the genesis and meaning of applied science in medicine.⁵ However, it is possible to go further than this, and to look at alternative dialogues, such as those between clinician and patient, as well as between the physician and opponents of scientific medicine external to the profession. I shall suggest that late nineteenth-century representations of scientific medicine were far more complex and multifaceted in Britain than is often assumed, and that opposition to it did not solely stem from perceived threats to medical traditions. There existed alternative contributing factors other than the polarization of two forms of medicine with claims to authority.

First, I shall argue that deeply embedded within late nineteenth-century British culture existed representations of medico-scientific practice that proved to be far more culturally pervasive than that of the “gentlemanly physician” and that held relevance for the doctor-patient relationship. Most notably, methods and techniques that emerged as a direct result of laboratory science often relied upon contested methods of animal experimentation. As the vivisection controversy deepened, the medical community as a whole were rendered vulnerable to association with particularly negative depictions of members of their field alleged to be acting as undertaker,

4. Christopher Lawrence, “Incommunicable Knowledge: Science, Technology and the Clinical Art in Britain,” *J. Contemp. Hist.*, 1985, 20:4, 503–20. For a historical overview of clinical research see C. C. Booth, “Clinical Research,” in *Companion Encyclopaedia of the History of Medicine*, ed. William F. Bynum and Roy Porter (London and New York: Routledge, 1990), 205–9.

5. John H. Warner, “Ideals of Science and their Discontents in Late Nineteenth-Century American Medicine,” *Isis*, 1991, 82, 454–78.

or at least advocate, of an endless variety of cruel acts of needless medico-scientific torture on living animals. The extent to which it was considered acceptable that the influence of the laboratory should be allowed to penetrate into the clinical setting therefore became a highly problematic question as the ethically questionable aspects of modern exploratory methods were well known.⁶

More worrying to contemporaries were fears that medico-scientific cruelty might be more literally transferred into the clinical experience. The fear of being vivisected, thereby becoming the subject of experiment, was not simply superstition or folklore. Many medical practitioners did indeed seem to regard their right to research as a priority over their responsibilities of patient care. A particularly well-publicized case occurred in 1883, when William Murrell and Sidney Ringer administered large doses of sodium nitrate to hospital outpatients at Westminster Hospital, London, before they had attempted this on animals. Eighteen patients suffered extreme pain and illness when the substance turned out to be poisonous. The effect of cases like this was that significant numbers of people began to regard the doctor with suspicion, with institutions such as hospitals potentially being seen as just as unsavory as the workhouse. A trip to the doctor might very well be a last resort, following other methods such as consulting a chemist or family friend.⁷ The patient, like the laboratory animal, perceived him or herself to be increasingly at risk from the experimental gaze of the medical professional, and as vulnerable to becoming an object of enquiry rather than a target of therapy.⁸ Technologies derived from the laboratory designed to investigate the stomach

6. For further reading, see Richard D. French, *Antivivisection and Medical Science in Victorian Society* (London: Princeton, 1976); Susan Hamilton, ed., *Animal Welfare and Anti-Vivisection 1870–1910: Nineteenth Century Women’s Mission* (New York: Routledge, 2004); Coral Lansbury, *The Old Brown Dog: Women, Workers and Vivisection in Edwardian England* (Madison: University of Wisconsin Press, 1985); Stewart Richards, “Drawing the Life-blood of Physiology: Vivisection and the Physiologists’ Dilemma, 1870–1900,” *Ann. Sci.*, 1986, 43:11, 27–56; Nicolaas A. Rupke, ed., *Vivisection in Historical Perspective* (London: Croom Helm, 1987); and Paul White, “Sympathy under the Knife: Experimentation and Emotion in Late Victorian Medicine,” in *Medicine, Emotion and Disease 1700–1950*, ed. Fay B. Alberti (Basingstoke: Palgrave Macmillan, 2006).

7. Lansbury, *Old Brown Dog*, 57–59.

8. British fears regarding this have generally not been written about, although a similar problem in America has been discussed in Susan E. Lederer, *Subjected to Science: Human Experimentation in America before the Second World War* (Baltimore, MD, and London: Johns Hopkins University Press, 1995).

were at the center of this debate in Britain. I shall suggest that human vivisection appeared to be turning real when the stomach tube began to be used as an alleged instrument of torture and cruelty during the controversial force-feeding of imprisoned Suffragette campaigners from 1909 onwards, a situation with various moral questions that were discussed internationally.⁹ Entwined within this ethical dilemma can be found allegations that the human, too, had now been transformed into clinical material and was at risk, just like the animal, of becoming the tortured, experimental object of enquiry.¹⁰

A second line of argument that I shall take traces how physicians often negotiated their use of modern medical science, rather than entirely rejecting it. Its use was heavily informed by discourses concerned with the extent to which it held enough clinical benefit to justify its problematic aspects. Accordingly, physicians can be found to be actively disassociating themselves with those practices with seemingly less obvious and significant diagnostic and therapeutic value.¹¹ They fashioned their scientific image and identities very carefully in response to public criticism of the profession. The wariness of the British physician and patient to engage with new forms of practice can be located within the problematic aspects of medical science, rather than constituting a wariness of the entity of modern science. British physicians considered it essential to situate themselves as separate from grotesque forms of biological manipulation where there appeared to be few transferable benefits for the suffering patient. The extent to which amounts of suffering could be shown to be justified by improved forms of diagnosis and treatment was the decisive factor, particularly when less objectionable traditional alternatives were still on offer. It was necessary to modify the introduction of scientific technology in accordance with the

9. This is not to claim that this was the only problematic procedure worthy of analysis, but it has been chosen due to its public prominence in Britain. There is considerable scope for research into other methods such as spinal puncture, a further invasive technique that was often laid open to claims that it was being employed to obtain data from humans rather than for diagnostic purposes. For more on this, see Lederer, *Subjected to Science*.

10. I aim to provide a broad overview of this complex story, rather than focus on the discourse and rhetoric of particular actors.

11. It has been noted that the historical literature connecting technology and medicine is somewhat limited despite its importance historically, in particular how it has been shaped by wider economic, social, and political structures. See John V. Pickstone, ed., *Medical Innovations in Historical Perspective* (London: Macmillan, 1992).

patient and to be actively seen to be dissociated from highly prominent and negative representations of the medical professional as an advocate of brutal forms of medical torture.¹²

THE MEDICAL PROFESSION AND THE NINETEENTH-CENTURY
STOMACH

Scientific investigators had for centuries aimed to fully understand the nature of the stomach's gastric contents. Yet the retrieval of its gastric acids had not always proven easy. A variety of methods had been employed, including those of the French naturalist René Réaumur (1683–1757), who trained a pet kite to swallow and regurgitate food-filled tubes in order to show that digestion was a consequence of the ability of the gastric juices to dissolve rather than a result of trituration and putrefaction.¹³ Lazzaro Spallanzani (1729–99), meanwhile, self-experimented by regurgitating linen bags aiming to establish the solvent powers of saliva. He also inserted putrid flesh into the stomachs of dogs, believing that the juices of the organ could make the flesh fresh again.¹⁴ The digestive system continued to hold a strong hold on the attention of nineteenth-century physiologists, who maintained a much stronger desire than their predecessors to transfer scientific methods of gastric analysis into the clinical setting. They hoped that by producing more accurate forms of diagnosis of stomach disorders, they might have further justification for the validity of their work and its methods.¹⁵ What differentiated physiological enquiry in this period

12. Inevitably, surgeons were also likely to have been vulnerable to public criticism in this period, not least because abdominal surgeons such as Berkeley Moynihan were eager to associate their work with the scientific methods of the laboratory. However, for the purposes of this article, I shall focus on the medical practitioner, as he not only would be the first point of call for the patient, but he was also perceived as being the person within the medical community who would be most likely to use the technologies described later in this article, as well as being the focus of criticism in the force-feeding incidents of the British prisons. See Berkeley Moynihan, *Duodenal Ulcer* (Philadelphia and London: W. B. Saunders Company, 1910).

13. René Réaumur, "Sur la Digestion des Oiseaux," *Mem. de l'Acad. Roy. des Sciences*, 1756, 1752, 266–307 and 461–95.

14. Lazzaro Spallanzani, *Dissertations Relative to the Natural History of Animals and Vegetables* (London: J. Murray, 1784), 375–91.

15. It has been occasionally pointed out that the stomach is a grossly under-analyzed organ, despite its historical importance. See G. H. Brieger, "Dyspepsia: The American Disease? Needs and Opportunities for Research," in *Healing and History: Essays for George Rosen*, ed. C. E. Rosenberg (New York: Science History Publications, 1979), 188–89; and William F. Bynum, ed., *Gastroenterology in Britain: Historical Essays* (London: Wellcome Institute for the History of Medicine, 1997).

was that while earlier investigations had been scattered and intermittent, and might be carried out by amateurs or within organized institutions, nineteenth-century experimental physiology was far more intense and continuous and almost entirely pursued in institutional settings.¹⁶

The transformation of the stomach into an object of medico-scientific enquiry was not insignificant given the apparent prevalence of digestive problems in Britain. Complaints such as dyspepsia consumed the attention of many physicians and patients, and were thought to have been connected to a wide variety of other ailments throughout the body. It is no exaggeration to claim that digestive problems occupied a particularly prominent place in the Victorian medical imagination with scores of books being written for both a professional and popular audience.¹⁷ References to the apparent evils and prevalence of stomach problems abound within nineteenth-century medical thinking, with representative examples including *The Medico-Chirurgical Review's* warning from 1826 that "there is no complaint more common in this country than an imperfect condition of the stomach."¹⁸ Twelve years later, the *Dublin Medical Journal* wrote that "stomach diseases are of every day occurrence; they form the national malady of Britain, and consequently the prime staple of the medical art."¹⁹ Such themes proved persistent throughout the century, despite shifts in medical ideas and practice. In the early 1850s, adverts for Jones' Tremadoes Pills suggested that indigestion was the "prevailing evil of the human frame, and the fashionable disease of the age."²⁰ As late as 1886, adverts for Seigel's Syrup continued to declare that "the national disease of this country is indigestion."²¹ Vastly improved methods of gastric diagnosis, if achieved, would have been unlikely to go unnoticed in Britain.

16. "Introduction," in *The Investigative Enterprise: Experimental Physiology in Nineteenth-Century Medicine*, ed. William Coleman and Frederick L. Holmes (Berkeley and London: University of California Press, 1988), 4–5.

17. Primary literature is vast. For a brief overview see Dennis Gibbs, "The Demon of Dyspepsia: Some Nineteenth-Century Perceptions of Disordered Digestion," in *Gastroenterology in Britain*, ed. Bynum.

18. Anon., "Dr. Baillie's Posthumous Writings," *Med. Chir. Rev.*, 1826, 4.8, 372.

19. Anon., *Dublin Med. J.*, 1838, 13, 334–35.

20. Anon., "Dyspepsia," *North Wales Chronicle*, 15 March 1851, 1242, 5.

21. Anon., *London Illustrated News*, 13 March 1886, 45, 276.

Despite the high levels of attention directed towards gastric complaints, knowledge of the organ had always remained vague, not least because the living human stomach had rarely been visualized. It was inaccessible until methods of abdominal surgery were introduced.²² Physicians had therefore always struggled with an extremely limited ability to distinguish even between minor cases of indigestion and more important complaints such as gastric ulcer or even cancer of the stomach, as the symptoms of these were not always obvious, consistent, or easily distinguishable. The investigations of early nineteenth-century morbid anatomists that formed part of their quest to correlate observations of post-mortem bodily lesions with distinct disease categories had proven somewhat problematic with regards to the stomach.²³ Even basic matters were still unclear, such as what shape the organ was in its living state, or even if there was such a thing as a “standard-shaped stomach.” As a result, the extent to which abnormalities and lesions found during the post-mortem examination could be attributed to natural corrosion caused by gastric acids or to disease was often uncertain. For instance, there existed no way of knowing whether a hole in the stomach found after death had been caused by natural acid erosion, an anomaly such as a perforated ulcer, or even by poisoning.²⁴ It is

22. The living human stomach had been observed on only a handful of occasions, normally via fistulous openings, in which a hole in the human stomach allowed investigators to study digestive processes, the most famous being the experiments of William Beaumont on his patient, Alexis St. Martin. See William Beaumont, *Experiments and Observations on the Gastric Juice and the Physiology of Digestion* (Edinburgh: Machlachlan and Stewart, 1838). Although his observations were relied upon in British discussion of the stomach for much of the century, in the period under discussion, laboratory scientists were eager to either refute or prove claims via more regular and scientifically reliable methods of gastric analysis. The work of physiologist Anton J. Carlson at the University of Chicago is also of interest, despite being out of the scope of the emphasis on British medicine in this article, because he studied a young man named Fred Vleck who had swallowed lye as a child, destroying his oesophagus, and requiring a fistula by which to feed him. See Anton J. Carlson, “Contributions to the Physiology of the Stomach: The Character of the Movements of the Empty Stomach in Man,” *Am. J. Physiol.*, 1912, 31:3, 151–68.

23. The main text on this subject is Russell Maulitz, *Morbid Appearances: The Anatomy of Pathology in the Early Nineteenth-Century* (Cambridge and New York: Cambridge University Press, 1987).

24. There is a vast literature on this in nineteenth-century medical writing, but a critique of the problems can be found in Berkeley Moynihan’s claims for the efficacy of surgical methods of the “pathology of the living.” See Moynihan, *Duodenal Ulcer*. Concern had been expressed in the mid-nineteenth century that British physicians were wrongly attributing perforated ulcers of the stomach to poisoning, which was leading to problematic medico-legal situations. See Edward Young, *On Perforating Ulcer of the Stomach* (London: Simpkin Marshall, 1849).

unsurprising to find that the digestive system and its component organs came under the scrutiny of nineteenth-century physiological enquiry. If knowledge of this system was improved and successfully transferred into clinical practice, it held the potential to confirm the laboratory worker's claims that the clinical gains accrued from laboratory experimentation outweighed its problematic aspects.

As a specialist field, physiology was gaining increasing influence. Within European medical schools, workspaces began to be constructed from around the mid-nineteenth century for chemists to work who were dedicated to examining, analyzing, and experimenting with bodily secretions. The rise of the field was somewhat rapid, and by the 1870s, physiology was firmly consolidated as a discipline with specialized university chairs and laboratories in existence in various countries.²⁵ Yet physiology took different shapes in different countries and was generally more popular in French and German medicine. The separation of the theoretical and the practical in German medical education, and the early availability of full-time university positions there for physiologists, had tended to remove the clinical and pathological interests. Their work was relatively insulated from the stimulus of clinical medicine.²⁶ What distinguished French physiology was the presence of a vigorous ethos of hospital medicine combined with a strong institutionalized commitment to basic research. Only in France did physiologists both train in and practice new forms of hospital medicine within firmly institutionalized research traditions.²⁷ Generally speaking, British and American clinical medicine tended to draw ideas from continental physiology, being less successful in producing new research in this period.²⁸

25. For more on the rise of physiology see Lesch, *Science and Medicine in France*, 1.

26. More can be found on German physiology in this period in Theodor Billroth, *The Medical Sciences in the German Universities* (New York: Macmillan, 1924); and Hans H. Simmer, "Principles and Problems of Medical Undergraduate Education in Germany during the Nineteenth and early Twentieth Centuries," in *The History of Medical Education*, ed. C. D. O'Malley (Berkeley: University of California Press, 1970), 173–200.

27. Lesch, *Science and Medicine in France*, 9–11.

28. For more on American physiology see Robert G. Frank Jr., "American Physiologists in German Laboratories 1865–1914," in *Physiology in the American Context*, ed. Gerald L. Geison (Bethesda, MD: American Physiological Society, 1987), 11–46. For more on America see Gerald L. Geison, "Divided We Stand: Physiologists and Clinicians in the American Context," in *The Therapeutic Revolution: Essays in the Social History of*

Digestion was central to the enquiries undertaken in these countries. For instance, the influential German chemist Justus von Liebig (1803–1873) expressed a strong interest in determining the nature of the digestive processes. By 1846 he had analyzed food digested by pancreatic juice and proven that it contained carbohydrates, fat, and protein.²⁹ In France, Claude Bernard (1813–1878) produced major works on issues such as pancreatic function.³⁰ Yet Bernard had a far wider agenda. He argued that the clinical approach was proving to be far too limited to act as the foundation of medicine, insisting that scientific investigation held the potential to reveal important insights denied to the clinician. Accordingly, he thought that the laboratory should be accorded a superior status to the bedside as a source of bodily knowledge.³¹ To accomplish this, it was necessary to show that medico-scientific knowledge held practical clinical potential, and that it might be able to offer solutions to a variety of immediate medical problems. Physiology needed to be visibly seen to be rectifying the most glaring deficiencies of traditional approaches to illness and disease if it was to replace long-standing clinical traditions.³² It was therefore in the interaction between physician and patient that the authority of experimental physiology would be put to the test. Experimental laboratory investigation threatened to become the very emblem of modernity and scientific aspiration.³³

American Medicine, ed. Morris J. Vogel and Charles E. Rosenberg (Philadelphia: University of Pennsylvania Press, 1979), 67–90.

29. William H. Brock, *Justus von Liebig: The Chemical Gatekeeper* (Cambridge: Cambridge University Press, 1997); and Jack Morrell, *The Chemist Breeders: The Research Schools of Liebig and Thomas Thomson* (Cambridge: Heffer, 1972).

30. Claude Bernard, *An Introduction to the Study of Experimental Medicine* (Paris: J. B. Baillière, 1865). For discussion of public objections to Bernard's work in France see Frederic L. Holmes, *Claude Bernard and Animal Chemistry: The Emergence of a Scientist* (Cambridge, MA: Harvard University Press, 1974).

31. Lesch, *Science and Medicine in France*, xi–xii. See also Coleman and Holmes, *Investigate Enterprise*.

32. See L. S. Jacyna, "The Laboratory and the Clinic: The Impact of Pathology on Surgical Diagnosis in the Glasgow Western Infirmary, 1875–1910," *Bull. Hist. Med.*, 1988, 62:3, 384–406, 385.

33. For more on this, see John H. Warner, "The Fall and Rise of Professionalism: Epistemology, Authority and the Emergence of Laboratory Medicine in Nineteenth-Century America," in *Laboratory Revolution in Medicine*, ed. A. Cunningham and Perry Williams (Cambridge: Cambridge University Press, 1992), 125.

Physiologists were often eager to show that by obtaining and scrutinizing samples of human gastric acids, via the utilization of procedures undertaken on the laboratory animal, the physician might then be in a better position to make more accurate distinctions between one disease and another, with the result that more appropriate forms of treatment could be recommended for the suffering patient's ailments. Once retrieved, physiologists argued that gastric contents could easily be filtered and analyzed in order to determine diagnostically useful factors, such as levels of acid or peptic power.³⁴ It was suggested, for instance, that particularly high levels of hydrochloric acid regularly accompanied gastric ulcer disease in comparison to other medical problems.³⁵ Furthermore, these methods held claims to be able to yield data which, due to their scientific rather than intuitive nature, would inherently have more precision.

The stomach tube was one of the most important investigative innovations that stemmed from the laboratory. It was introduced in 1868 by the German physician Adolf Kussmaul (1822–1902), who perfected it by experimenting on a professional sword-swallower, and it was designed for the purpose of emptying the stomach so that its contents could be chemically analyzed.³⁶ The German gastroenterologist Carol Anton Ewald (1845–1915) developed further methods of intubation intended to act as medical aids, and his main contribution, while working with his colleague Ismar Isidor Boas (1858–1938), was to introduce a standard test-meal to improve the accuracy of gastric analysis. Specific foods would be given to a patient, with the retrieval of stomach contents taking place at a scheduled interval afterwards, a method thought to lead to more uniform results.³⁷ Ewald's test breakfast contained bread and weak tea that was to be digested an hour before the extraction of stomach

34. Physiologists were more likely to stress the simplicity of such methods than their complexities, as argued in Warner, "Ideals of Science," 458.

35. Developments throughout this period led to the idea that medical treatment of ulcer disease should incorporate the reduction of acid, and it is towards the end of this period that Schwarz coins the famous phrase, "no acid, no ulcer." See Karl Schwarz, "Über Penetrierende Magen und Jejunalgeschwür," *Beitr. Klin. Chir.*, 1910, 67, 96.

36. Adolf Kussmaul, "Über die Behandlung der Magenerweiterung durch eine neue Methode mittelst der Magenpumpe. Deutsch," *Arch. F. Klin. Med.*, 1869, 6, 455. See Theodore H. Bast, *The Life and Times of Adolf Kussmaul* (New York: P. B. Hoeber, 1926).

37. Carl A. Ewald, *Diseases of the Stomach* (Edinburgh: Young J. Pentland, 1892).

contents. However, other methods were available that might invariably include combinations of minced meat, tea, toast, mint, soup, scraped beef, and wheaten bread.³⁸

Yet the human stomach began to be accessed with a far wider range of innovations than the tube, many of which are now forgotten. New York physician Max Einhorn (1862–1953) was particularly enthusiastic in his inventions of such technologies.³⁹ One of his creations was the “stomach bucket,” later developed into the “duodenal bucket,” which was a small oval-shaped vessel containing a silver bucket with an opening attached to a silk thread. The device could be swallowed by the patient and quickly reached the stomach.⁴⁰ Einhorn also developed the gastrograph, which consisted of a stomach-tube attached with a hollow platinum ball. As the stomach moved naturally, the platinum ball came into contact with an electrical current allowing gastric movement to be recorded on a separate apparatus.⁴¹ George Herschell, senior physician at Queen’s Jubilee Hospital, London, urged the adoption of the gastrodiaphane into general practice, an instrument consisting of a soft rubber tube fitted with a bulb, intended to illuminate the stomach.⁴² A therapeutic method also developed by Herschell was auto-lavage, which involved the use of a stomach tube connected to further tubes attached to a metal douche can filled with a cleansing solution, and to another leading into a receiving pail. The can would hold at least two liters of liquid, and it was hung on a nail in the wall above the patient’s head while seated.⁴³

New techniques involving filling the stomach with liquids or gasses also began to be recommended for employment in the clinical setting, with the shared intention of manipulating the size and shape of the stomach to render its clinical conditions more visible to the medical practitioner. The German physician Franz Riegel

38. For a detailed description of these see Alexander L. Gillespie, *A Manual of Modern Gastric Methods: Chemical, Physical and Therapeutical* (Edinburgh: Oliver and Boyd, 1899), 11–12.

39. Max Einhorn, *Diseases of the Stomach* (London: Baillière & Co., 1897).

40. See William G. Morgan, “Some Experiences with the Einhorn Duodenal Bucket and a Modified Thread Test,” *Am. J. Med. Sci.*, 1911, 141:5, 649–58.

41. Gillespie, *Modern Gastric Methods*, 111; and Einhorn, *Diseases of the Stomach*.

42. George Herschell, “A New Gastro-Diaphane,” *Lancet*, 1904, 163, 1361.

43. Gillespie, *Modern Gastric Methods*, 120; and George Herschell, “An Improved Apparatus for Auto-Lavage of the Stomach,” *Lancet*, August 1904, 164, 532.

(1843–1904) introduced the “Clapotement,” or “Splashing Sound” device. While experimenting, he had discovered that if a patient had digested large fluid quantities, then a sound could be heard if the fingertips were pressed in specific areas of the abdomen. If a sound could be heard below the normal lower limit of the stomach, then this might be thought to indicate dilatation of the stomach or displacement. If the “splashing sounds” could be heard between four and six hours after a meal, this might suggest a problem involving delayed emptying, a symptom thought to be closely associated with atony of the stomach. Meanwhile, localized sounds around or below the umbilicus were considered to be a likely indication of gastroptosis.⁴⁴ Innovations intended to inflate the stomach with gas for diagnostic purposes were also constructed, one of which consisted of a double-rubber bulb that could gauge and control air quantities inside the organ. It was thought that a relaxed and dilated stomach would require significantly larger quantities than a healthy organ with normal muscular tone. Electricity was also employed with the intention of holding therapeutic benefit. Einhorn constructed an electrode that was similar to the stomach bucket, but it contained an additional rubber tube holding a wire connected to an external battery. However, it was possible to place electrodes directly onto the skin above the stomach, or one in the stomach and another to the skin in a corresponding area above. “Faradisation” was thought to work particularly well in atony of the stomach walls, as well as dilatation of the stomach, gastralgia, and hypochlorhydria.⁴⁵ Overall, the management of gastric disorder became increasingly influenced by a modern ethos of scientific accuracy and engagement with technological innovations.

THE STOMACH AND THE LABORATORY ANIMAL

How can antagonism and wariness toward these new methods be accounted for, given that they appeared to be providing solutions to long-standing clinical problems in the management of stomach complaints, particularly in a country where there existed much anxiety over conditions such as dyspepsia? Lesch’s suggestion that

44. See Franz Riegel, *Diseases of the Stomach* (Philadelphia and London: W. B. Saunders, 1903); and Riegel, “Diagnosis of Gastric Disease,” *Lancet*, 1896, 147, 568.

45. Gillespie, *Modern Gastric Methods*, 124–31.

low levels of material support for research instead of practice were in place that thwarted the scientific endeavors of British physiologists is somewhat problematic. It does not fully explain the rejection of technologies and procedures at the clinical level, as these could easily be imported and incorporated into teaching and practice regardless of where their initial research originated.⁴⁶ Similarly, Lawrence's claims that new diagnostic technologies were rejected not for their own sake, but because of their personification as a threat to a mysterious clinical art that medical practitioners were anxious to defend, is limited in some regards in its emphasis upon contestation between science and medicine at the expense of other possible contributing factors.⁴⁷

It is necessary at this point to look at wider cultural discussions regarding what it meant to be "scientific" in the laboratory before returning to this complex question. Advocates of laboratory medicine were regularly met with skepticism, apathy, indifference, suspicion, and active opposition in Britain, and this was not solely due to the threat that their activities seemingly posed to medical traditions. Opposition to the practices of medical science reached far outside of the clinical sphere. It was also a result of the application of methods of animal experimentation that proved inseparable from laboratory research. Strong feelings toward these procedures existed both among members of the general public and within sections of the medical profession in Britain. To adopt a "scientific" approach to medicine in this period also meant to risk association with a wide variety of negative representations, with a particularly prominent image of the medical professional held in sections of the British popular imagination that saw him as a brutal, experimental torturer rather than a healer. The inclusion of scientific principles into medicine was also problematic because concern existed that clinicians would begin to see their responsibility as normalizing a deviant physiological process rather than caring for a sick human being.⁴⁸ For instance, one anonymous antivivisectionist campaigner, writing in 1882, argued that a great change had come over the spirit of the medical profession in recent years, and that "silently

46. Lesch, *Science and Medicine*, 10.

47. Lawrence, "Incommunicable Knowledge."

48. Warner, "Ideals of Science."

but rapidly a new leaven has been at work altering the whole bent of its character.” It appeared to the author that the sentiment of humanity that had traditionally characterized medicine, and that had long acted as one of its basic principles, had been avowed. Medicine appeared to no longer be humane, and it now served science rather than mankind. The art of medicine, it was suggested, had always been primarily interested in restoring sick persons to health, whereas modern, scientific medicine appeared to be interested more in seeking the laws that regulated human life, both in states of health and disease. In the words of the author, “science has grown fat whilst art has been starving.”⁴⁹

Experimental physiology was therefore inherently wrought with problems of internal ethics and public accountability.⁵⁰ Even as late as 1900, its clinical benefits, as distinct from those of bacteriology, pharmacology, and pathology, appeared to be few indeed, a problem that made ethical questions regarding connections between suffering and therapy particularly challenging.⁵¹ What was at stake in the British vivisection controversies was not only the moral character of experimental physiologists, but also the image of medical professionals more generally.⁵² New relationships were therefore not only negotiated between science and medical practice, but also had to take into account themes of professional identity and moral legitimacy.⁵³ Accordingly, antivivisection sentiment, including that from within the medical profession, exerted a powerful inhibitory influence on the adoption of the ideals and technologies of physiological exploration, more so in the British clinic than in other countries.⁵⁴ Questions regarding the precarious relationship between suffering and medical benefit were central to the management of gastric disorder, not least because antivivisectionist campaigners aimed to make the problematic aspects of laboratory

49. Anon., “Scientific Medicine,” *Society for Protection of Animals from Vivisection Pamphlets 2* (London: Office of the Society for the Protection of Animals from Vivisection, 1882), 1–2.

50. For more, see Richards, “Drawing the Life-blood of Physiology.”

51. Richards, “Vicarious Suffering, Necessary Pain,” 8. It is worth noting that physiology was not completely useless therapeutically, as discussed by Warner, “Ideals of Science,” 459.

52. White, “Sympathy under the Knife,” 117.

53. Warner, “Ideals of Science,” 457.

54. See French, *Antivivisection and Medical Science*.

research into the digestive system publicly known. Any claims that medico-scientific work was leading to significant curative benefit in this area were strongly refuted, or at best portrayed as disproportionate to the high levels of suffering imagined to have been instigated during the processes of knowledge accrument.

The transformation of the stomach into an object of scientific enquiry involved particularly problematic procedures. University College of London physiologist Ernest Henry Starling (1866–1927) was particularly eager to make claims that his research had greatly advanced knowledge on digestion, and that the investigation of the living stomach of the animal had provided significantly more accurate knowledge than almost a century of investigations into human morbid anatomy.⁵⁵ Starling's work proved objectionable to opponents on two levels: first, his use of mutilating techniques upon laboratory dogs, and, second, the extent to which he was able to claim that he was developing forms of information intended for medical, rather than scientific, application. In his earlier experiments, he had accessed the stomach of a living dog through fistulous openings, a process that involved creating a hole in the body of the animal through which its stomach could be accessed to collect samples of digestive juice. However, this technique proved limited due to the difficulty in evoking gastric secretion by the physical stimulation of the exposed stomach. The amounts produced via these techniques were therefore relatively small.

Starling employed particular problematic procedures to work his way around this problem, but by doing so laid himself open to claims of cruelty and needless bodily mutilation. To collect larger levels of gastric juices, he chose to divide the oesophagus of the laboratory dog's neck in addition to the creation of an abdominal fistula. It was still possible to feed the animal by pouring liquid food through the oesophageal opening and to keep it alive. However, it was only by encouraging the dog to eat orally, as normal, that large amounts of gastric juices would be produced. The dog would still take food into its mouth, chew it and then swallow it but then, much to the surprise of the animal, it would

55. For more on Starling see John Henderson, *A Life of Ernest Starling* (New York and Oxford: Published for the American Physiological Society by Oxford University Press, 2005).

always fall out of the hole made in its neck. If the laboratory dog was provided with food when it was in a state of extreme hunger, it would avidly attempt to eat in this futile manner for hours, without ever realizing that food would never reach its stomach. An alternative procedure mentioned by Starling involved an experiment where a dog was continually excited by being shown meat for up to ninety minutes in order to stimulate gastric juice production. After this, it would be given the food, which would then fall out of its neck. This technique was known as “sham feeding” and rendered the dog as a suitable object from which large levels of digestive juices could be collected, as its stomach would continue to produce liquid as attempts to eat continued.⁵⁶

Inevitably, such methods needed to be justified by the extent to which they held obvious clinical value, because the accrument of scientific knowledge as an end to itself was generally deemed as not essential enough to justify the infliction of mutilating procedures onto a living animal. Starling’s investigations were easily represented as a series of cruel, mutilating, and torturous experiments that held little, if any, transferable value for the suffering human patient in the clinic. For instance, his claim that by engaging with procedures of sham feeding, he had managed to ascertain that “the afferent channels for this reflex may be therefore either the afferent nerves from the mouth, or, when the *idea* of food is involved, any of the nerves of special sense, such as sight, smell or hearing, through which these ideas are called forth” was problematic in the extent to which such knowledge failed to produce medically useful forms of practice.⁵⁷ Opponents fiercely complained that conclusions such as these were only of scientific interest, and that they contained no transferable medical value whatsoever. His work was most fearfully condemned in publications like the popular antivivisectionist magazine *The Animal’s Defender and Zoophilist*, which argued in 1915 that despite his apparent attention awarded to the study of pancreatic diabetes, Starling had only got so far as concluding that

56. Ernest H. Starling, *Recent Advances in the Physiology of Digestion* (London: Archibald Constable and Co. Ltd., 1906), 63–64. Starling adopted these techniques from the Russian physiologist Ivan Pavlov. See Daniel P. Todes, *Pavlov’s Physiology Factory: Experiment, Interpretation, Laboratory Enterprise* (Baltimore, MD: Johns Hopkins University Press, 2002).

57. Starling, *Physiology of Digestion*, 65–71.

“it is still very difficult to say definitely why the removal of the pancreas brings about this condition, or what disturbance of metabolism is primarily responsible for it.”⁵⁸ Again, this result alone was not enough to convince sceptics of the benefits of scientific medicine.

Sham feeding was a persistent target of the antivivisectionists and was regularly held up as a prime example of the brutality of the modern medical professional. They persistently provided grotesque and evocative accounts of such experiments and their appliance for purposes of scientific curiosity alone. One story reproduced in the antivivisectionist publication *The Shambles of Science* entitled “Fun” recalled a visit to a physiology lecture. The author claimed that:

The lecturer describes certain experiments on dogs amid the laughter of the audience. The oesophagus has been cut and a fistula established, so that the food taken fell down on the floor instead of passing into the stomach. The dogs ate and ate and ate – they were frightfully hungry – and were much surprised to see the food fall out; they tried again with the same result. They could go on like that for hours! How comical! How clever of the physiologist who tried this! Aren’t animals stupid? During the process of eating, the stomachs of the dog secreted gastric juice. This is an instance of ‘psychic secretion.’ Awfully interesting! Marvellously clever!

The author went on to state:

When describing some other experiments, where food has been introduced directly into the stomachs by means of fistulae when the animals had been asleep, the lecturer jokingly said that this was rather difficult, for you had to be careful not to awake the dogs, but only their stomachs.⁵⁹

Charles Bolton (1870–1947) was a further physiologist whose methods came under regular attack. He made claims that his employment of a scientific approach to medicine had done much to advance clinical diagnosis and treatment of ulcer of the stomach and that disease could only be cured by knowing the physiological causes and processes of the stomach.⁶⁰ Like Starling, he maintained

58. Anon., “Notes and Notices,” *Animals’ Defender and Zoophilist*, 1915, 35, 53.

59. L. L. Hageby and L. K. Schartau, *The Shambles of Science* (London: Ernest Bell, 1903), 25–26.

60. Gastric ulcer disease was thought to be on the increase from this period, in particular duodenal ulcer. See Christie and Tansey, eds., *Peptic Ulcer*.

that it was not possible to observe these in a living human, and that it was essential to align the findings of those investigating morbid anatomy with the results of clinical research.⁶¹ He also experimented on a wide range of animals including dogs, monkeys, and cats, although his techniques were regularly reprinted, and fiercely condemned, in the antivivisectionist press. They raised a variety of ethical issues primarily because he had attempted to produce disease by injecting doses of acid into the stomachs of monkeys, working on understandings that hydrochloric acid was a primary cause of peptic ulcer disease. *The Zoophilist and Animal Defender* claimed that Bolton might not have undertaken these experiments under anaesthesia. However, even if anaesthesia had been administered during the initial operation, it seemed that the torture inflicted by the resultant ulcer, combined with the irritant effects of acid poisoning, would still have proven highly traumatic for the animals. The author stated that:

It cannot be pretended that these cruel experiments were performed for the benefits of its victims, nor can it be argued that because we can burn holes in their stomachs with irritants and destructive acids we can advance our curative methods for a well-known and cruel disease. The experiments were undertaken for purely scientific reasons, and the whole business was another proof that research of this kind is merely cruelty to animals that should be suppressed by the law.⁶²

The British antivivisectionist press continued to detail a wide range of experiments made upon the abdomen of the laboratory animal within its publications, newsletters, and pamphlets, eagerly reprinting reports from the medical press of problematic physiological experiments that included the tearing away of the stomach of various dogs and its replacement with a pig's bladder to produce artificial vomiting, the continuous injection of alcohol every half-hour into a dog's stomach until it eventually died, and the opening of the abdominal organs of two rabbits and subsequent transfer of the contents of one into the other to investigate the physiology of

61. Charles Bolton, *Ulcer of the Stomach* (London: Edward Arnold, 1913), v.

62. E. Berdge, "Torture of Animals in London Today," in *Zoophilist and Animal Defender*, June 1915, 35, 15. For the original article, see Charles Bolton, "Recent Observations on the Pathology of Ulcer of the Stomach with Indications for Treatment," *Br. Med. J.*, 1915, i, 707–10.

pregnancy.⁶³ Other alleged procedures included the uniting of the bowel to the stomach, while further claims of cruelty were made when describing the cutting open of the stomach of a dog in order to insert the ear of a live rabbit and to fasten that there until it was eaten away by the gastric juice of the dog's stomach.⁶⁴

THE PHYSICIAN'S NEGOTIATION WITH SCIENTIFIC MEDICINE

To engage with scientific medicine therefore not only entailed negotiation with an inherently modern field of enquiry that threatened long-standing medical traditions. Science had far broader meanings outside of its association with progression and change. It also carried darker implications and connotations. The incorporation of new methods of gastric analysis at the clinical level, with its necessity for the utilization of new, intrusive forms of scientific technology had multifaceted meanings for both patient and physician. Certainly, contemporary physicians must have no doubt feared the replacement of traditional aspects of their work, but can we really assume that the moral or ethical aspects embedded within perceptions of these procedures really played such a limited role? How would the patient view the use of a technology embedded with connotations of needless scientific exploration and torture? Surely, he must have needed to justify the results of the use of such invasive, intrusive technologies into areas deep inside the human body because, if he was not careful, the patient himself might fear that he was becoming the subject of an experiment.⁶⁵

Anxiety regarding the transference of the quest for medico-scientific knowledge into the interior of the human body was not new. Britain had a long-standing tradition of being

63. Anon., "Samples of Vivisection," *Society for Protection of Animals from Vivisection Pamphlets 3* (London: Office of the Society for the Protection of Animals from Vivisection, 1896), 2.

64. Anon., "Some 1896 Vivisections," *Society for Protection of Animals from Vivisection Pamphlets 4* (London: Office of the Society for the Protection of Animals from Vivisection, 1897), 1–2; and Anon., "Samples of Vivisection," *Society for Protection of Animals from Vivisection Pamphlets 2* (London: Office of the Society for the Protection of Animals from Vivisection, 1895), 1.

65. For more on the history of medical technologies, see Stanley J. Reiser, *Medicine and the Reign of Technology* (Cambridge and New York: Cambridge University Press, 1978); and Carsten Timmermann and Julie Anderson, eds., *Devices and Designs: Medical Technologies in Historical Perspective* (Basingstoke and New York: Palgrave Macmillan, 2006).

suspicious of the medical professional's seemingly eager desire to perform experiments on their bodies. Concern over this had been accelerated by the early nineteenth-century body-snatching panics that led to the Anatomy Act of 1832, which made the body of the pauper available for medical research should no one claim it.⁶⁶ Against such a backdrop, claims that the gaze of the medical professional was now turning towards experimentation on the *living* human body was therefore likely to be an effective rhetoric of those opposed to laboratory techniques. Fears of human experimentation were certainly deeply immersed within vivisection controversies. It appeared perfectly plausible to many contemporaries that the human patient might eventually fall victim to the cruel, experimental urges of the modern medical man, particularly if the ethos of laboratory science was allowed to intrude too far into the British clinical experience.⁶⁷ Could the medical community truly be trusted to refrain itself from utilizing their new medical instruments for experimental as well as curative purposes? The human too, it was feared, might become the object of scientific inquiry and become subject to the modern medical professional's seemingly apparent disregard for the basic, long-standing principles of humanity and compassion.

The technologies of modern medical enquiry held assumptions known both to the medical man and patient, many of which held particular resonance within popular British culture in this period. The course of modification and adaptation that leads to the widespread adoption of instruments in clinical practice is generally a convoluted process, and the arrival of new technologies of the stomach was no exception to this. It is often necessary to fully modify the laboratory instrument to the needs of the human patient, a subject that proves much harder to manage than the laboratory animal. The process of creating an instrument, using it in the laboratory, and bringing it into the clinic is largely a problem of

66. For more information, see Martin Fido, *Bodysnatchers: A History of the Resurrectionists 1742–1832* (London: Weidenfeld and Nicolson, 1988); Julie-Marie Strange, *Death, Grief and Poverty in Britain 1870–1914* (Cambridge and New York: Cambridge University Press, 2005); Ruth Richardson, *Death, Dissection and the Destitute* (London and New York: Routledge and Kegan Paul, 1987); and Sarah Wise, *The Italian Boy: Murder and Grave Robbery in 1830s London* (London: Jonathan Cape, 2004).

67. Lederer, *Subjected to Science*.

translation.⁶⁸ Yet to modify the instrument to the human inevitably meant, in this period, to dissociate the utilization of technology from any association with pointless scientific enquiry, needless acts of cruelty, and any hint of human experimentation. This, as I shall suggest, was particularly crucial in Britain when dealing with gastric technologies.

New technologies of the stomach could certainly be utilized therapeutically or diagnostically, but they could also be simultaneously employed to answer questions regarding gastric secretion and digestion in both sick and healthy humans.⁶⁹ Embedded deep within the clinical use of such technologies in Britain was the problematic relationship between torture and cure. It was necessary to maintain the impression that the application of invasive and uncomfortable procedures was in fact worthwhile in terms of significantly improved levels of diagnosis and cure, if a dissociation from the central debates of the vivisection controversy was to be achieved. If the physician could not produce these, then he rendered himself vulnerable to accusations of applying them for medical curiosity and/or brutality rather than cure. It was essential that the patient did not risk feeling as if he or she was becoming an object of experimentation.⁷⁰ Furthermore, an empathetic relationship needed to be maintained.⁷¹

In the case of gastric analysis, laboratory techniques designed to analyze the stomach would often be used in a restrained way, dependent on the extent to which they could justify their use as being of clinical value. Modern procedures were therefore not altogether rejected either as an over-simplistic science versus intuition dichotomy might suggest. It was not uncommon for British practitioners to argue that modern forms of gastric analysis should be restricted until a later date when their accuracy and usefulness

68. Robert G. Frank has used the example of methods of graphic representation of the heart to illustrate this. See Robert G. Frank Jr., "The Telltale Heart: Physiological Instruments, Graphic Methods and Clinical Hopes 1854-1914," in *Investigative Enterprise*, ed. Coleman and Holmes, 211-90; and W. B. Fye, "Growth of American Physiology 1850-1900," in *Investigative Enterprise*, ed. Coleman and Holmes, 47-66.

69. Lederer, *Subjected to Science*, 5.

70. *Ibid.*

71. For more on empathy, see Ellen S. More and M. A. Milligan, eds., *The Empathic Practitioner: Empathy, Gender, and Medicine* (New Brunswick, NJ: Rutgers University Press, 1994); and Ellen S. More, "Empathy as a Hermeneutic Practice," *Theor. Med. Bioeth.*, 1996, 17:3, 243-54.

was more certain, thereby distancing themselves from medical science but at the same time not going so far as to refute its usefulness. For instance, in 1899, William Calwell (1859–1943) of Belfast Royal Hospital suggested that it had not yet been fully explored how far adhesions such as an ulcer might affect the functions of the stomach and cause dyspepsia.⁷² Such arguments imply a postponement of the introduction of medical science until questions related to clinical value were firmly settled.

The chemical test is one example of this. Supporters of modern scientific medicine advocated methods such as the vivid-green salt test, a procedure that involved adding hydrochloric acid to a solution of extracted gastric contents, as they appeared particularly simple to use in the clinical setting. Claims were put forward that particularly accurate conclusions could be reached about a variety of abdominal illnesses by its application that were significantly superior to traditional methods of diagnosis. However, in 1899, the *British Medical Journal* suggested that these apparently simple tests in fact consistently produced findings that were no more accurate than those obtained by traditional methods of examination. It was argued that gastric substances including peptones and neutral salts typically interfered with chemical reactions, and that the truly accurate methods available were typically too complicated for practical, clinical use. The author concluded that “at present, indeed, a ready method, suitable in clinical practice of the detection of free hydrochloric acid in organic liquids is a desideratum.”⁷³ The results of such tests were regularly criticized for not being uniform enough to be able to reach decisive conclusions about gastric disease. It appeared, for instance, that vomit in stomach cancer regularly contained small amounts of blood, which was also recognized as a symptom of gastric ulcer disease, meaning that diagnostic distinctions could not always be easily made. Accordingly, physicians often chose to resort to more familiar methods, claiming that the true test of determining malignant stomach disease from ulcer was to determine the presence or absence of a tumor through the physical

72. William Calwell, “Gastric Adhesions as a Cause of Dyspepsia,” *Br. Med. J.*, 1899, *ii*, 1185–86.

73. Anon., “The Acids of the Stomach,” *Br. Med. J.*, October 1889, *ii*, 774–75.

examination of pain.⁷⁴ This does not suggest that chemical analysis was by any means rejected. Indeed, physicians appear to have been eager to experiment and to form allegiances with emergent scientific methods and procedures. It was the lack of visible improvements in diagnosis that proved to be the decisive matter in the physician's choice to utilize them. Overall, chemical tests would be rejected if their results appeared disproportionate to their diagnostic or therapeutic value.

The apparent complexity of new, scientific methods, and the resultant extra time spent subjecting the patients to a variety of gastric technologies, were also viewed in relation to their diagnostic value. To obtain appropriate levels of diagnostic accuracy, it appeared necessary to employ methods that were so complicated, difficult, and time consuming that they were out of the reach of anyone unskilled in chemical analysis, or who did not have access to the seemingly large amount of apparatus necessary. Furthermore, arguments were made that the busy practitioner simply did not have enough time on his hands to deal with such lengthy processes, and to employ them in the most accurate and conscientious manner.⁷⁵ Complexity combined with impracticality and relatively little diagnostic or therapeutic yield proved highly problematic in an environment where pressure to emphasize the clinical worth of new procedures of gastric analysis was particularly problematic.

Yet, perhaps most significantly of all, given the problematic questions regarding laboratory pain, patient discomfort seems to have been the leading factor in reducing the British physician's motivation to abandon familiar methods. It was an aspect that held the strongest cultural resonance due to its potential association with apparently needless exercises in medical experimentation and brutality. For instance, available versions of the gastroscope consisted of a rigid, bent metal tube containing a prism placed at an angle and an electric lamp at its nosepiece. The device required the heating of the lamp while inside the stomach and necessitated a constant stream of water via two water channels to reduce its temperature. Its application on the patient was somewhat impractical, with it being necessary to

74. William M. Ord, "On the Diagnosis and Treatment of Gastric Ulcer," *Dub. J. Med. Sci.*, 1889, 88, 545–62.

75. Gillespie, *Modern Gastric Methods*, 47–48.

administer large doses of morphine. Such deep anaesthetization meant that all of the throat reflexes were stopped. To administer the procedure, the patient needed to lie on his back with his head over the end of a table, or be uncomfortably positioned propped up on a chair with his head tilted backwards. The proceeding was described as “an exquisite surgical manipulation which should only be undertaken by the most expert,” meaning that the device was of limited clinical use.⁷⁶ Dramatic levels of diagnostic or therapeutic improvement had to be justified while adopting such procedures, given their heavy involvement in uncomfortable bodily manipulation when set against a backdrop of campaigners publicly questioning the usefulness of such procedures both on animals and humans.

The enthusiasm of those who were initially eager to use gastroscopic methods was often dampened by accidental, and sometimes fatal, perforations of the gullet or stomach. The gastroscope, according to William Hill, a medical author on gastric technologies, appeared to be more dangerous as a diagnostic tool than exploratory laparotomy in the hands of a competent surgeon not least because it was alleged to involve the “blind insertion of an angular, rigid rod through the gullet into the stomach.”⁷⁷ Similarly, the inflation of the stomach with gas was criticized on the grounds that the patient was likely to gag while the procedure was being undertaken, but also, more importantly, that many patients would object to having the physician’s breath blown into their stomach.⁷⁸ Methods involving water were also condemned not only as inaccurate and unpleasant, but also dangerous if an anomaly such as an ulcer was present. Finally, procedures involving listening for sounds were dismissed as too complicated for practical use, while devices intended to dilate the stomach with gases were feared to hold the potential to have damaging effects on the patient’s health, a risk not in proportion to the superiority of accuracy supposedly brought about by their incorporation into the clinical experience.⁷⁹

76. Henry S. Souttar and Theodore Thompson, “The Direct Inspection of the Gastric Mucous Membrane,” *Quart. J. Med.*, 1908, 1:4, 376–79.

77. William Hill, *On Gastroscopy and Oesophago-Gastroscopy* (London: John Bale, 1912), 2.

78. Riegel, *Diseases of the Stomach*, 52–53.

79. Anon., “Contribution to the Determination of the Percussion Limits of the Stomach,” *Dub. J. Med. Sci.*, 1887, 3, 21–40.

The stomach tube was central to these debates. It was not unheard of for accidents to occur such as the unintentional swallowing of the device, which would sink into the patient's stomach. The comfort of the procedure, even when performed successfully, was dubious. It was necessary, when inserting the tube, to make sure that mucus and saliva did not drop from the patient's mouth and for there to be receptacles on hand in case of vomiting.⁸⁰ It was also frequently found that if the stomach contained food residue, that as soon as the tube was introduced, some of this would be vomited all over the hands of the physician.⁸¹ Furthermore, intrinsic design problems appeared to be common in the tubes available to British practitioners, which were criticized for being designed without careful consideration of patient comfort and the reduction of internal pain. Practitioners often seemed to be utilizing tubes that contained eyes made by directly punching a hole in the rubber, a method thought to have created sharp cutting edges that acted as curettes once inside the body, regularly injuring the mucous membrane of the patient's stomach. If this tube was to be suddenly removed, the sharp edges of the eyes might cut the stomach wall, and even detach linings of the membrane. It was also easy for the tube to become blocked by food, rendering it diagnostically useless. Finally, practitioners might mistakenly believe that small tubes could be inserted with more ease than those of a larger size. However, in reality, larger tubes could be grasped and swallowed by the oesophagus more comfortably, being less liable to bend or kink while being applied.⁸²

Patient opinions on the tube appeared to have been particularly negative. George M. Niles, author of *The Diagnosis and Treatment of Digestive Diseases* (1914) suggested that public attitudes towards the stomach tube could be described as "actual repugnance." He stated that:

I have known many patients, who have spent sleepless nights in awesome anticipation of the trying ordeal, and others, who would suffer for months, rather than submit to what they considered a horrible torture.

80. George Herschell, *Manual of Intra-gastric Technique* (London: Henry J. Glashier, 1908), 3–13.

81. *Ibid.*, 26–27.

82. *Ibid.*, 3–13.

So often do I hear an intelligent patient say – “Doctor, I would have been to you for aid long ago, had I not dreaded to take that awful stomach-tube.”

The reason for this apparently lay in the often careless, inexpert technique of the practitioner attempting to use the tube, who Niles accused of inflicting needless discomfort upon their patients, who would then not only become prejudiced, but tended to “spread abroad the evil tidings.” He concluded that “candidly, I cannot blame them, and it is the duty of the physician to this day to learn how to introduce a tube so deftly that this prejudice will be overcome.”⁸³

The attitude of the patient certainly proved to be a stumbling point in the adoption of the tube in clinical practice, to the point where George Herschell stated that methods of gastric analysis were not employed in Britain with the same enthusiasm as on the continent due to a deeply rooted idea among medical men that the patient would never submit to such forms of diagnosis and treatment. Accordingly, he provided the medical profession, in his advice on intragastric technique, with lengthy instructions on how to improve the tube’s reputation among patients, starting with tips given on how to introduce it into the body painlessly. For him, it was the nervousness of the patient that determined the success of the investigation.⁸⁴ Herschell insisted that in order to incorporate scientific methods into clinical practice, it was necessary to distance modern technologies from such negative representations that proved persistent in Britain throughout the period in question.

THE SUFFRAGETTE’S ENCOUNTER WITH THE STOMACH TUBE

Fears of the cruelty and pain of the laboratory being directly transferred into the clinical setting appeared to be turning into reality within the controversy surrounding the suffragette hunger strike, which took place in British prisons from July 1909, and is likely to have contributed towards the wariness of both doctor and patient to engage with laboratory technologies. By this time, the application of the stomach tube for feeding patients had been a standard

83. George M. Niles, *The Diagnosis and Treatment of Digestive Diseases* (London: Henry Kimpton, 1914), 170.

84. Herschell, *Intragastric Technique*, 3.

medical procedure for around fifty years, primarily undertaken in asylums, where it would be used to save lives of severely ill patients who had stopped eating or who were unable to swallow food from a spoon or cup. The procedure was generally depicted as safe, with only minor complications arising including nausea, vomiting, stomach cramps, and diarrhea. Asylum doctors appear to have become very skilled at this procedure, quickly learning at what speed and temperature food could be administered without causing discomfort.⁸⁵ However, when applied on a patient who was not ill, but who might have voluntarily chosen to stop eating, such procedures became problematic. An article was published in *The Lancet* in 1872 following the use of force-feeding on a murderer who had been imprisoned in an asylum. The author claimed that “if anyone were to ask me the worst possible treatment for suicidal starvation, I should say unhesitatingly, “forcible feeding by means of the stomach-pump.” He went on to claim that force-feeding by the mouth ought to be abolished forever because it was more concerned with violence and force than cure.⁸⁶ In a further article, he described the stomach pump as “the most unmerciful engine for the purpose of feeding that has ever been invented.”⁸⁷

When the British government made the decision nearly forty years later to use both the stomach tube and stomach pump on a much wider scale, in order to solve the problem of suffragette hunger strikes, a public controversy emerged, not least because its use without consent was accompanied by particularly dubious claims to curative benefit in many British prisons. In July 1909, Marion Dunlop (1864–1942), imprisoned for suffragette militancy, refused to carry on eating, becoming the first woman to go on hunger strike, although she had not consulted the movement’s leaders, the Pankhursts, prior to this decision. Afraid that she might die and become a martyr, the British government made the

85. For more on the early use of the tube see Julius Friedenwald, “Note on the Discovery and Early Use of the Stomach Tube,” *Med. Life*, 1927, 34:12, 639–44; Julius Friedenwald, “The History of the Development of the Stomach Tube with Some Notes on the Duodenal Tube,” *Bull. Hist. Med.*, 1936, 4:6, 425–54; and R. H. Major, “History of the Stomach Tube,” *Ann. Med. Hist.*, 1934, 6, 500–9.

86. D. Anderson Moxey, “Feeding by the Nose in Attempted Suicide by Starvation,” *Lancet*, 1872, 100, 444–46.

87. D. Anderson Moxey, “Feeding by the Nose in Attempted Suicide by Starvation. . . cont.,” *Lancet*, 1872, 100, 489–90.

decision to release her after ninety-one hours of self-starvation. However, other imprisoned suffragettes quickly adopted the same strategy. Unwilling to release all of them, it was decided that medical officers should force the prisoners to eat via the application of the stomach tube or stomach pump.⁸⁸

Despite a public controversy flaring up surrounding the ethical dimensions of this, prison authorities were persistent.⁸⁹ The British scriptwriter Kitty Marion (1871–1944), imprisoned for throwing stones at a post office in Newcastle, claimed to have endured 232 force feedings in prison while on hunger strike.⁹⁰ These methods were applied until the “Cat and Mouse Act” of 1913 made the hunger strikes legal, meaning that Suffragettes would be kept in prison until they became extremely weak, at which point they would be released. This allowed the government to claim that any harm, or even death, which resulted from the starvation was entirely the fault of the hunger striker, as well as having the benefit of rendering the women too weak to actively protest.⁹¹

Yet, the non-consensual use of the tube was challenged in various public displays of protest, which encouraged the ethical questions surrounding forcible-feeding to become heavily debated. Members of the medical profession were directly implicated in alleged scenarios of brutal torture, with their technologies becoming the target of Suffragette militant activity. For instance, in November 1909, protestors smashed the windows of the house of Dr. Cassell, the deputy medical officer at Winson Green Gaol, who

88. Jennian F. Geddes, “Culpable Complicity: The Medical Profession and the Forcible Feeding of Suffragettes, 1909–1914,” *Women’s Hist. Rev.*, 2008, 17, 79–94. For more on the development of self-starvation as a form of protest, see Maud Ellmann, *The Hunger Artists: Starving, Writing and Imprisonment* (Cambridge, MA: Harvard University Press, 1993); and Sharman A. Russell, *Hunger: An Unnatural History* (New York: Basic Books, 2005). For more on the development of the stomach pump, see William A. Jackson, “The Invention of the Stomach Pump and Its Development in the Nineteenth Century” (Ph.D. diss., University of Manchester, 1996).

89. Accounts of forcible feedings in prisons were reported internationally. Perhaps the most sensationalist account was published in September 1914 by the American modernist writer Djuna Barnes, a struggling reporter who made her living by writing “stunt stories” and who submitted to force-feeding in order to describe the experiences of hunger-striking women’s suffrage activists. See Djuna Barnes, “How It Feels to be Forcibly Fed,” *N. Y. World Mag.*, September 1914, 6, 5, 17.

90. For more on Kitty Marion, see Julie Holledge, *Innocent Flowers: Women in the Edwardian Theatre* (London: Virago Press, 1981), 56–57.

91. Susan K. Kent, *Sex and Suffrage in Britain 1860–1914* (Princeton, NJ: Princeton University Press, 1987), 202–3.

had assisted a prison doctor in forcibly feeding suffragette prisoners.⁹² At a speech at the Child Study Society on the subject of “The Child Criminal,” given a fortnight later in London, Dr. W. C. Sullivan, medical officer of Holloway Prison, was repeatedly interrupted by suffragettes, who asked him how he could address such an audience when he took part in the forcible feeding of women in Holloway Prison. They went on to describe his work as “dirty” and “absolutely degrading.”⁹³ Prime Minister David Lloyd George (1863–1945) also faced protests when at the Savoy Theatre that month involving campaigners carrying flags bearing various phrases including “Votes for Women” and “No Stomach Tubes.” Although the women were escorted out, in the second act of the play two more protestors stood up in the stalls holding up feeding tubes and banners inscribed with the phrase “No Forcible Feeding.”⁹⁴

Historians have so far traced connections between the feminist campaigns and antivivisectionist feeling, but have paid less attention to the medical technologies employed and the implications of this for the profession. It has been suggested, for instance, that caring women with feminist tendencies allied themselves with the laboratory animal not least because this offered them a further platform in which to oppose male-orientated militaristic and inhumane expressions of modern science.⁹⁵ It has even been suggested that by the early 1900s, many British people were convinced that the Suffragettes and the antivivisectionists were in fact the same.⁹⁶ It is perhaps likely that many women saw themselves as being the strength of the antivivisection movement, as they perceived the tortured animals as being victimized by dominant forms of male-orientated scientific ideology, therefore reflecting how they felt about their own social condition and trappings.⁹⁷ It was perfectly viable for women to portray themselves, just like the

92. Anon., “A House Defaced and a Window Broken,” *Times*, 5 November 1909, 39109, 4.

93. Anon., “Woman Suffrage: The Fabian Society and Forcible Feeding,” *Times*, 19 November 1909, 39121, 10.

94. Anon., “Woman Suffrage,” *Times*, 12 November 1909, 39115, 12.

95. For discussion see Elston, “Women and Anti-Vivisection,” in *Vivisection in Historical Perspective*, ed. Rupke, 259–94.

96. Lansbury, *Old Brown Dog*, 83–84.

97. *Ibid.*, 63–82.

laboratory animal, as flogged and beaten, with their own condition hideously and accurately embodied in the figure of an animal bound to a table by straps with the vivisector's knife at work on its flesh.⁹⁸ Furthermore, opposition to vivisection permitted those who had no rights, and therefore no possibility of ever imposing their will upon others, to publicly demonstrate their strength and dominance.⁹⁹ Of course, the situation was more complex than this, and it was not unheard of to find women doctors perceiving laboratory medicine as a suitable career avenue in order to prove women's capability of being scientific in modern society.¹⁰⁰ Yet, overall, the overlap between the status of the animal and the force-fed suffragette proved to be an effective rhetoric.

Analysis of the forcible feeding of suffragette prisoners, meanwhile, has so far been primarily discussed in terms of its implications for gender history. Martha Vicinnus has suggested that the Suffragettes believed that only by giving their bodies through such public displays could they win the necessary spiritual victory needed to enter the male political world.¹⁰¹ Jane Marcus presented such acts as a spiritual refusal of motherhood. When women refused to eat they were also self-consciously refusing to nurture the nation.¹⁰² Mary Jane Corbett, meanwhile, has argued that by denying their reproductive function, suffragette hunger strikers were contesting patriarchal definitions of women-as-mother.¹⁰³ Medical historians have so far not picked up on these themes and their implications for the profession.

98. *Ibid.*, 83–84.

99. *Ibid.*, 32.

100. Bittel has traced how, in America, Mary Putnam Jacobi supported laboratory medicine. See Carla Bittel, "Science, Suffrage and Experimentation: Mary Putnam Jacobi and the Controversy over Vivisection in Late Nineteenth-Century America," *Bull. Hist. Med.*, 2005, 79:4, 664–94. It has also been suggested that women were allowed into the medical profession primarily because they could combine sympathy and science. See Regina M. Morantz-Sanchez, *Sympathy and Science: Women Physicians in American Medicine* (New York and Oxford: Oxford University Press, 1985).

101. Martha Vicinus, *Independent Women: Work and Community for Single Women 1850–1920* (London: Virago, 1985), 23–28.

102. Jane Marcus, ed., "Introduction," in *Suffrage and the Pankhursts* (London: Routledge and Kegan Paul, 1987), 12.

103. Mary J. Corbett, *Representing Femininity: Middle-class Subjectivity in Victorian and Edwardian Women's Autobiographies* (New York and Oxford: Oxford University Press, 1992), 163.

Direct attacks on the ethics of the medical profession were deeply embedded within the evocative descriptions of the experiences of the prisoners subjected to the tube. The idea that they were being unnecessarily subjected to brutal, painful forms of medical torture with little curative benefit was particularly effective given the perceived relationship between British antivivisectionism and women's rights movements, as well as the general fear of human experimentation at the clinical level. Prison medical officers claimed that they were saving the lives of female prisoners who would otherwise have died through starvation or who had suffered from ill health because of it, and they were therefore behaving in a compassionate manner. However, the prisoners responded to this by pointing out that they were generally far from being in a state of ill health when the stomach tube was applied. In fact, if anything, the medical professionals had paid very little regard to their health, and the use of the tube had created more health problems than it had solved. This also allowed opponents to portray force-feeding as a procedure more engaged with torture, punishment, and cruelty than medical benefit. It represented the perceived transference of new scientific technologies from the laboratory into the clinical setting. The patient, too, had become the subject of medical dishonesty and brutality.

These themes are particularly prominent in the descriptions given by Lady Constance Lytton (1869–1923), who detailed her experiences with the tube in both the national and international press in January 1910, utilizing language that was implicitly critical of the medical procedures involved. She claimed to have been forcibly fed twice a day with a stomach tube while imprisoned. She explained that a large metal gag had been forced upon her mouth and that the operation caused her to vomit repeatedly, and depicted her experience as:

A living nightmare of pain, horror and revolting degradation. The sensation is that of being strangled and suffocated by the thrusting down of a large rubber tube which arouse great irritation in the throat and nausea in the stomach. The anguish and effort of retching into the stomach and the natural writhings of the body defy description.

Implicit in her description is the claim that a problematic form of medical technology was being employed upon her in a manner that

had no benefit for her health. Instead, she claimed that it was employed to subdue her and to render her more compliant. She portrayed the experience as so unnatural that her body revolted against it, yet the medical attendant persisted in the procedure. The pain of the medical procedure mirrors that of the torment thought to be being experienced in the laboratory, an analogy that backs up her claims of medical torture and cruelty.

There can clearly be found underlying concerns over medical neglect taking place in order to apply a painful, degrading, and unnecessary procedure that involved varying processes of internal bodily manipulation, as did that of the animal in the laboratory. As with scientific medicine, claims of improved health were contested. In fact, Lytton claims that, if anything, the experience worsened her health, stating that once she was repeatedly forced to digest food via the tube until she vomited so continuously that “the result seemed to surprise and slightly alarm the doctor and he called in an assistant to test my heart.” Even at this point, she alleged that medical negligence took place. The medical assistance given to her was described as insufficient, with only a very brief and superficial examination undertaken. She compared this to a similar test that she had had in Newcastle, but that was for purely medical purposes, where a specialist had tested her heart with “elaborate paraphernalia” for ten or fifteen minutes. The apparent dishonesty of the medical attendants over their intentions can be found at the forefront of condemnation of force-feeding, an idea that would have proven highly effective given its mirroring of claims made by the laboratory scientist for clinical medicine.¹⁰⁴

The experiences of Laura Ainsworth were publicly described by Emmeline Pankhurst (1858–1928) and depicted similar themes. The prying open of the jaws with a cold, steel instrument shoved between her teeth, followed by the insertion of a tube while Ainsworth was firmly held down is prominent in her portrayal of Ainsworth’s situation. Nowhere in the accounts can be found any hint at medical professionalism or a desire to induce anything but cruelty. The physical encounter between the body and the medical

104. Anon., “The Imprisonment of Lady Constance Lytton,” *Times*, 26 January 1910, 39179, 10; and Anon., “The Law and the Women,” *The Common Cause*, 27 January 1916, 7, 570.

technology appears bereft of sympathy and medical value. There exists no hint at compassion or the compassionate traditions of the traditional patient–doctor relationship. The passage of the tube down Ainsworth’s throat into her stomach is reported to have caused a choking sensation, leaving her with a horrible feeling of sickness. Pankhurst reported that the continued use of the tube rendered Ainsworth so weak that she became no longer healthy enough to submit to it, with the doctors then only being able to use a standard feeding cup on her.¹⁰⁵ Her entire body had been reduced to such a weakened state as to render her more malleable to the initial desires of the prison medical officer, and to encourage compliance with the demands of the prison authorities.

Implications that the suffragettes were being treated in a similar way as the animal were central to these representations. For instance, in December 1913, a large demonstration was held against force-feeding at Queen’s Hall, London. At this, the Bishop of Kensington stated that to inflict useless pain via force feeding constituted torture. He employed the example that if someone was caught flogging a horse, then the Society for the Prevention of Cruelty to Animals would be informed, on the grounds that it was inhumane and cruel as well as useless.¹⁰⁶ Constance Lytton also reminded those reading her accounts of the similarity of her position to that of the laboratory animal when she described her “feeling of complete helplessness, as of an animal in a trap, when the operators come into one’s cell and set to work.”¹⁰⁷ Furthermore, suffragette authors often claimed that the prison doctors and wardresses described their duties as “feeding them (the prisoners) like chickens.”¹⁰⁸ Similarly, Dorothy Pethick, a prisoner at Newcastle, complained that she felt as though she was being treated like “a piece of cattle.”¹⁰⁹

Like the laboratory animal, it seemed that the medical professional was inducing disease inside the victim rather than resolving health issues. From the start of their campaigns against the

105. Anon., “Pried Open Teeth of Suffragettes,” *N. Y. Times*, 17 October 1909, C4.

106. Anon., “Against Forcible Feeding,” *Suffragette*, 12 December 1913, 2, 194.

107. Anon., “Imprisonment of Lady Constance Lytton,” 10.

108. Anon., “Home Office Statements Refuted,” *Votes for Women*, 12 July 1912, 5, 664.

109. F. W. Pethick Lawrence, “Newcastle Prisoners Released: The Story of Their Ordeal in Prison,” *Votes for Women*, 20 October 1909, 3:85, 67.

procedures, the suffragettes drew attention to the problematic medical aspects of the procedure, obtaining the opinion of a wide range of medical authorities to justify their claims. An article in *Votes for Women* claimed that laceration of the throat was highly likely should the patient struggle. Furthermore, the hard parts of the tube might come into contact with parts of the stomach resulting in serious injury. There was also a risk that during either the insertion or removal of the tube into the throat, there appeared to be a high risk that some of the food might enter the lung, leading to pneumonia.¹¹⁰ It was even claimed that there had been one case in an asylum where the patient had partly bitten off his own tongue after it had become twisted behind the feeding tube.¹¹¹ The neglect of medical attention and the induction of ill health as punishment come across strongly in the manner by which the prisoners chose to express their experiences. Pethick claimed that just before the food was going to be poured down her throat during her ordeal, she had heard one of her doctors say “oh, we have not tested her heart,” following by another replying with “oh, I expect that is all right.” They chose to continue regardless, in fact allegedly forcing such an unnecessarily large quantity of food into their throats that severe indigestion was produced.¹¹²

Consequent ill health caused by forms of bodily torture became a dominant theme within suffragette accounts of the experience of the tube. For instance, while in court in October 1909, Ainsworth claimed that due to the tube being repeatedly forced down her, she was suffering from congestion and inflammation in the throat and was feeling so weak and ill that she had lost thirteen pounds. Because of her experiences, it was now necessary for her to be taken care of in a nursing home. Her physician confirmed in the courtroom that she was suffering from a congested, inflamed throat and nervous prostration. He claimed that she was now weak and pale, too tired to talk much, and that she had lost weight.¹¹³ This was not an isolated case. In 1910, John Pattle died in Portsmouth prison of heart disease after being forcibly fed, while Mary Pilsbury,

110. Anon., “Forcible Feeding: Opinions of Medical Experts. Grave Danger to Life Involved,” *Votes for Women*, 1 October 1909, 3:82, 3.

111. *Ibid.*, 3.

112. Pethick Lawrence, “Newcastle Prisoners Released,” 67.

113. Anon., “Forcible Feeding of Suffragettes,” *Times*, 13 October 1909, 39289, 3.

of Salford, committed suicide shortly after her release.¹¹⁴ Two years later, a male prisoner had died from heart failure following his ordeal of being force fed at Portsmouth Prison in February 1912.¹¹⁵

The potential effects on mental health caused by force-feeding were also problematic. For instance, Kitty Marion claimed that the physical and mental agony of her 232 feedings was so great that she had felt as if she wanted to put an end to her life by hanging herself on many occasions.¹¹⁶ Meanwhile, the suffrage prisoner and trade activist William Ball was removed to a pauper lunatic asylum after enduring five and a half weeks of forcible feeding at Pentonville Prison, London. Claims were made that the man had been “of unusually good health,” having been the champion runner of the Midlands, never once requiring medical treatment throughout the twenty years preceding his imprisonment and encounter with the tube.¹¹⁷

At worst, accounts of forcible-feeding held implications that acts of instrumental rape were being undertaken. Forcible feeding, Jane Purvis has recently claimed, was administered in such a way as to make it as awful as possible, acting as a physical and spiritual violation akin to rape.¹¹⁸ It has also been portrayed as an abuse with serious physical and mental consequences for its subjects, with the medical profession of the time being complicit, because, as a body, they failed to condemn the practice as medically unnecessary.¹¹⁹ Similar claims had been made regarding the employment of the speculum when diagnosing cases of syphilis. The experience of this encounter held a reputation for regularly leading to psychological change, which might result in new forms of behavior, even when used on virtuous women as opposed to prostitutes. Once the uterus had been violated, minds were considered as potentially poisoned by the experience, leading women to become addicted to speculum examination, degenerating into “uterine hypochondriacs.”

114. Anon., “Forcible Feeding,” *The Common Cause*, 28 April 1910, 2, 37.

115. C. Lytton, “Forcible Feeding of Prisoners,” *Times*, 30 April 1912, 39886, 14; and Anon., “The Case of William Ball,” *Votes for Women*, 17 May 1912, 5:219, 522.

116. “Suffragette Who Was Forcibly Fed 232 Times: Release from Holloway Gaol,” *Manchester Guardian*, 17 April 1914, 9.

117. Anon., “Case of William Ball,” 522.

118. June Purvis, “The Prison Experiences of the Suffragettes in Edwardian Britain,” *Women’s Hist. Rev.*, 1995, 4:1, 103–33.

119. Geddes, “Culpable Complicity,” 79–94.

The speculum examination was perceived as voyeuristic and degrading, and one that inflicted mental and physical pain on the female sufferer, with the female victim becoming an innocent victim of male lust and tyranny.¹²⁰ The brutality of the doctors was also commented on in these procedures, with it being claimed that as little as three minutes might be spent on examination, utilizing instruments that were extremely hot due to their immersion in boiling water and that were possibly unsterilized. The examination, supposedly for medical purposes, was claimed to have been made as painful and degrading as possible to render the target more compliant with social norms of sexual behavior.¹²¹ Certainly, there is an underlying implication that the suffragettes were being penetrated in a sexual manner with the tube. Coral Lansbury has claimed that there existed an uneasy similarity between the devices made to hold women for sexual pleasure and the tables and chairs, replete with stirrups and straps, which rendered women ready for the experience of forcible feeding.¹²² Was it possible then, if the speculum examination implied vaginal rape, then the stomach tube was constructed as the oral equivalent? Could it also represent a brutal attack upon an area of the body where women had been seen liable to suffer? Such themes come across in Lilian Lenton's description, within which she claims that the doctors:

Amused themselves trying first one tube, then another, over and over again, pushing tubes, obviously far too thick, as far down as they could make them go, then, with excellent logic, trying thicker ones. This amusement they varied by pushing down small ones which I promptly coughed up into my mouth. Just as one tube reached my throat one of the doctors pushed his fingers down to keep it from coming into my mouth.¹²³

The medical profession was highly concerned with such explicit attacks on their reputation. Asylum attendants seem to have viewed the claims of brutality with some perplexity and were more inclined to dismiss claims of medical brutality and lack of therapeutic

120. Judith R. Walkowitz, *Prostitution and Victorian Society: Women, Class and the State* (New York and Cambridge: Cambridge University Press, 1982), 56–57.

121. *Ibid.*, 201–2.

122. Lansbury, *Old Brown Dog*, 99.

123. Anon., "Miss Lilian Lenton's Story of Her Experience," *Manchester Guardian*, 22 October 1913, 20820, 10.

benefit. One anonymous writer to *The Times* claimed that he had regularly employed the device for around forty years, both in hospital and private practice, and had never known resistance to be offered by the patient, excluding severe cases of insanity. He also stated that the gag, a part of the procedure that seemed to be causing particular concern, was in fact a simple contraption often used by dentists to keep the mouth open. He described outcries about the procedure of force-feeding as “indefensible and absurd.”¹²⁴ Dr. George Robertson, of the Royal Edinburgh Asylum, also argued that it had “been a source of perplexity and astonishment” to those engaged in caring for mentally ill patients to learn that such methods of artificial feeding were being mistakenly represented as dangerous forms of torture, claiming to have performed the operation over 2,000 times without encountering any problems.¹²⁵ Similarly, in 1912, an anonymous contributor to the *British Medical Journal* argued that the instruments were safely used in prisons and asylums on a daily basis and were even regularly employed by the patients themselves who required auto-lavage.¹²⁶

It was those engaged with physical, rather than psychological, treatment who spoke out most strongly. For instance, the London Surgeon, Charles Mansell-Moullin (1851–1914), wrote to *The Times* soon after force-feeding began, arguing that the “hospital treatment” offered to the Suffragettes in fact constituted violence and brutality.¹²⁷ It is worth noting that he had a somewhat sympathetic attitude towards the campaign, having operated upon Emily Davison after she was taken unconscious at the Derby race-track in 1913 and was an active member of the Men’s League for Women’s Suffrage.¹²⁸ Shortly after, Dr. Forbes Ross (1867–1913), surgeon at Kensington Hospital, also suggested that the methods of forcible feeding used in Birmingham Gaol were an act of brutality beyond human endurance, going so far as to suggest that its use was frequently followed by the development of chronic pigmentary

124. Anon., “The Woman Suffragists,” *Times*, 29 September 1909, 39007, 10.

125. Anon., “A Physician on Forcible Feeding,” *Times*, 26 February 1913, 40145, 10.

126. Anon., “Fasting Prisoners and Compulsory Feeding,” *Br. Med. J.*, 1909, *ii*, 997–98.

127. Charles Mansell-Moullin, “To the Editor of the *Times*,” *Times*, 29 September 1909, 39077, 10.

128. “Edith Mansell-Moullin,” in E. Crawford, *The Women’s Suffrage Movement: A Reference Guide 1866–1928* (New York: Routledge, 2001), 375.

colitis, an intractable disease.¹²⁹ Vivisectionists, too, were alarmed by the procedures, perhaps concerned with the implications regarding their ethics embedded within the claims of the Suffragettes. Physiologists too were seen to oppose these practices, concerned with the impact upon their professional reputation that the employment of such techniques might have. The British surgeon and arch-vivisectionist Victor Horsley (1857–1916) condemned requests made by politicians for medical professionals to be asked to comply with problematic medical procedures that risked casting dispute upon modern medical procedures. He claimed on the subject of one Suffragette who had died in prison that the false issue of saving the patient's life was raised to protect the medical officer of the prison and that:

So little did the Home Office do towards 'saving her life' as suggested in the Judge's question, that she became weaker and weaker until, finally, to avoid a terrible scandal they, to really save her life, ceased her so-called 'medical' treatment and turned her ill and suffering, out into the streets of Birmingham without even the means to get to her house.¹³⁰

Representations of the stomach tube as instrument of human torture therefore constituted a climax in debates regarding the extent to which technologies accrued from scientific medicine might be utilized for scientific purposes, or for torture, at the expense of questions related to the patient's health. For British medicine, it represented a culmination in fears regarding the intentions of members of the profession in pursuing such forms of behavior, and the most negative aspects of the intrusion of laboratory medicine into the clinical level.

CONCLUSIONS

In conclusion, I have attempted to raise important points related to representations of British practitioners, the meanings of scientific medicine, technologies in the clinic, and the relationship between science and suffrage. I have also aimed to add complexity to the

129. Anon., "The Feeding of Suffragist Prisoners," *Times*, 7 October 1909, 39084, 5.

130. Victor Horsley, "Forcible Feeding," *Times*, 21 December 1909, 39148, 10. For more on Horsley's opposition to force-feeding see Geddes, "Culpable Complicity," 79–94. For more on Horsley, see Tan C. Tan and Peter M. Black, "Sir Victor Horsley (1857–1916): Pioneer of Neurological Surgery," *Neurosurg.*, 2002, 50:3, 607–11.

science versus intuition dichotomy often cited in reference to this period and to link a variety of scenarios and experiences together to further understand Britain's reluctance to adopt new methods in this period. However, there are further issues that could be raised regarding the history of the stomach itself and its potential role in medical history. Chronic diseases such as ulcer of the stomach have, for the most part, been neglected at the expense of analysis of the epidemic diseases of the nineteenth century. This article is suggestive that in fact the stomach and other problems of the digestive system have regularly been located at prominent positions in both the medical and cultural imagination, with their existing great scope within the history of medicine to explore such themes.