

Introduction: Experior

Humanity. What is that? What does it mean? It is, in a simple sense, a marker of species. But then, I have spent almost two decades thinking and writing about the history of the ways in which this species has defined itself, marked itself out as distinct or superior, drawn lines of exclusion at the expense of other animals and, often, other beings which sought to lay equal claim to the name ‘human’.¹ In a more complex yet narrower sense, ‘humanity’ encompasses a set of practices comprising dynamically related clusters of experiences, emotions, sensations and thought, that *certain* humans have and do that define them, and only them, as such. Since the Enlightenment at least, ‘humanity’ has functioned as a synonym, more or less, of sympathy, compassion and pity and, much more recently, of empathy and altruism. It has marked a passional disposition of regard for others, whether human or other animal, with accompanying acts of succour for their suffering. It was definitive of that other Enlightenment master category, *civilization*. In this narrow sense it should be immediately clear that ‘humanity’ is political: its practice implies an embodied or an embrained quality limited to those who know (1) how to claim it; (2) how to dispense it; (3) how to discriminate among those deserving of it, or not; and (4) of its social value and function. This book, in its broadest terms, is about a breach in this compound knowledge, in the decades either side of 1900.

What I mean by this is that the meaning and experience of ‘humanity’, including its rhetorical construction, its emotional qualities and its associated activities, changed over time. At the moment of rupture, when

¹ Rob Boddice, ‘The Moral Status of Animals and the Historical Human Cachet’, *JAC: A Journal of Rhetoric, Culture and Politics*, 30:3–4 (2010); Rob Boddice, ‘The End of Anthropocentrism’, in *Anthropocentrism: Humans, Animals, Environments*, ed. Rob Boddice (Leiden: Brill, 2011); ‘The Historical Animal Mind: “Sagacity” in Nineteenth-Century Britain’, in *Experiencing Animals: Encounters between Animal and Human Minds*, ed. Robert W. Mitchell and Julie Smith (New York: Columbia University Press, 2012); ‘Bestiality in a Time of Smallpox: Dr Jenner and the “Modern Chimera”’, in *Exploring Animal Encounters: Philosophical, Cultural and Historical Perspectives*, ed. Dominik Ohrem and Matthew Calarco (London: Palgrave, 2018).

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different versions of ‘humanity’ might be said to have been in competition, it seemed that civilization itself was at stake: on the one side, a prevailing understanding of humanity as Christian compassion; on the other side, an increasingly complex ‘faith’ in scientific knowledge and its production, coupled with the practices of that production. In fact, the book is only really concerned with this other side. Many before me have attempted to capture the history of the former. But the equation of scientific knowledge production to a practice of humanity is largely uncharted territory. As such, the book is a contribution to a growing body of work on the history of humanitarianism. What it shares with that body of work is a focus on the particular formation of an affective disposition and an accompanying set of practices, but it is at a stage of remove from the historiography’s specific foci on nursing, explicitly humanitarian institutions such as the Red Cross and their protocols, philanthropy, war relief or abolition.² What is distinct about the humanitarianism in this case is that the cultivated feeling was experienced without having recourse to the *direct* experience of assisting or relieving other humans, and that there was a perceived need to justify and defend this kind of humanitarianism from its detractors who saw it precisely as the opposite of humane. Vivisection seems, on the face of it, to sit at odds with the rise of animal welfare as part of a narrative of humanitarian expansion in the nineteenth century, and accordingly the arguments of medical scientists and their allies with respect to the humanitarianism of experimentation have been essentially overlooked.³

² See Rebecca Gill, *Calculating Compassion: Humanity and Relief in War, Britain, 1870–1914* (Manchester: Manchester University Press, 2013); Karen Halttunen, ‘Humanitarianism and the Pornography of Pain in Anglo-American Culture’, *American Historical Review*, 100 (1995): 303–34; Thomas L. Haskell, ‘Capitalism and the Origins of the Humanitarian Sensibility’, parts I and II, *American Historical Review*, 90 (1985): 339–61, 547–66; John Hutchison, *Champions of Charity: War and the Rise of the Red Cross* (Boulder, CO: Westview Press, 1996); Dolores Martin Moruno, Brenda Lynn Edgar and Marie Leyder, ‘Feminist Perspectives on the History of Humanitarian Relief (1870–1945)’, *Medicine, Conflict and Survival*, 36 (2020): 2–18; Silvia Salvatici, *A History of Humanitarianism, 1755–1989: In the Name of Others* (Manchester: Manchester University Press, 2019); Bertrand Taithe, ‘“Cold Calculation in the Faces of Horrors?” Pity, Compassion and the Making of Humanitarian Protocols’, in *Medicine, Emotion and Disease, 1700–1950*, ed. Fay Bound Alberti (Houndmills, UK: Palgrave, 2006), 79–99; Bertrand Taithe and John Borton, ‘History, Memory and “Lessons Learnt” from Humanitarian Practitioners’, *European Review of History: Revue européenne d’histoire*, 23 (2016): 210–24.

³ I have emphasized elsewhere the historiographical tendency to assume the historical position of antivivisectionists and the tendency to accept without criticism that animal-loving vivisectionists, or experimenting humanitarians, must have had split personalities or, at best, conflicted emotions, Jekyll-and-Hyde-like. For discussion on this point, see Rob Boddice, *The Science of Sympathy: Morality, Evolution and Victorian Civilization* (Urbana: University of Illinois Press, 2016), 75–92, and the following for explicit

Hence this book's title, *Humane Professions*. It conjures with a variety of meanings that aim to capture, on the one hand, the rise of the professional and specialist medical scientist, whose *métier* was animal experimentation, and whose guiding principle was 'humanity', or the reduction of the aggregate of suffering in the world. On the other hand, it highlights the rhetorical rehearsal – the discursive *profession* – of scientific practices as humane and humanitarian, and connects these often defensive professions, in turn, to meaningful changes in the experience of doing science. For decades, beginning in the 1870s, there was significant emotion work on the part of medical researchers to internalize the practices of animal experimentation as practices of sympathy, to justify a certain affective coolness that was necessary for laboratory work and transform it into a humanitarian medical masculinity. This I have characterized as a kind of conscious callousness – William Osler famously put it under the head of *aequanimitas*, or imperturbability – that suspended immediate aesthetic responses to the sight of suffering and projected forwards to the far-reaching goods that such work seemed to promise.⁴ This emotion work was, for many, essential to the formation of the scientific self: a way of justifying means by probable ends, and a way of translating horror into heart work. Routine practices of vivisection became both banal to the practitioner as well as being projected as medical expressions of a well-intentioned mercy.

The book is therefore a logical sequel to my 2016 book, *The Science of Sympathy*, which demonstrated a connection between new ideas of sympathy as 'social glue' that originated in Charles Darwin's (1809–82) *Descent of Man*, and scientific practices of this new sympathy in vivisection, vaccination and eugenics.⁵ To the extent that *Science of Sympathy* discussed vivisection and physiology, there is some overlap here, especially in Chapter 1. But my focus in that book was principally on Britain and, concerning vivisection, was limited to the 1870s and 1880s. I use

examples: Patrizia Guarnieri, 'Mortitz Schiff (1823–96): Experimental Physiology and Noble Sentiment in Florence', in *Vivisection in Historical Perspective*, ed. Rupke, 106; Hilda Kean, "'The Smooth Cool Men of Science": The Feminist and Socialist Response to Vivisection', *History Workshop Journal*, 40 (1995): 19, 23; Stewart Richards, 'Drawing the Life-Blood of Physiology: Vivisection and the Physiologists' Dilemma, 1870–1900', *Annals of Science*, 43 (1996): 31, 47–80; Paul S. White, 'The Experimental Animal in Victorian Britain', in *Thinking with Animals: New Perspectives on Anthropomorphism*, ed. Lorraine Daston and Gregg Mitman (New York: Columbia University Press, 2005), 62, 74; Paul S. White, 'Sympathy under the Knife: Experimentation and Emotion in Late Victorian Medicine', in *Medicine, Emotion and Disease, 1700–1950*, ed. Fay Bound Alberti (Houndmills, UK: Palgrave, 2006); Paul S. White, 'Darwin Wept: Science and the Sentimental Subject', *Journal of Victorian Culture*, 16 (2011): 195–213.

⁴ See Boddice, *Science of Sympathy*, *passim*. For Osler, see Chapter 2. For physiologists, see Chapters 3 and 4.

⁵ Boddice, *Science of Sympathy*.

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this as a starting point in *Humane Professions*, expanding the scope to include the period up until the First World War, and expanding the range to include Germany and the USA. It should perhaps be stated explicitly at the outset, therefore, that while the historiography concerning antivivisection has foregrounded questions of animal welfare, of the relative status of animals in relation to humans, and of the nature and politics of pain, here I allude to these things only tangentially, to the extent that they played a part in the defence of experimental medicine or the experience of experimental medicine, either as discourses or practices of humanity.

Conflagration

Scene: New York, 1911. Lower East Side tenement. Context: epidemic diseases, diphtheria, viral meningitis. Metaphor: fire.

As the flames of disease threatened to raze civilization, the fire-fighting doctors and the sick alike had only one hope: vivisection. Through the knowledge gained by it the conflagration could be doused. Through the medical advances it promised, those who had succumbed to illness were offered a life net. Antivivisectionist society women call out hypocritically from under bird-of-paradise bonnets for the ‘life net’ to be pulled away: a misplaced mercy for animals as practical mercilessness for humanity.

This striking image (Figure 0.1), which appeared in *Puck* magazine, a popular New York satirical weekly, captures what was at stake for medical science and society as a generation-long transnational controversy over vivisection reached its peak.⁶ Its narrative, little studied compared with that of the history of antivivisection itself, was the product of a deliberate campaign, orchestrated from the heart of establishment medicine. The American Medical Association’s (AMA’s) Council for the Defense of Medical Research, formed in 1908, was to argue the case for animal experimentation in the court of public – not medical – opinion. The battlegrounds for medical research would be the pamphlet, the public lecture and the popular periodical press, especially targeted at women. In putting their plans into action, American society’s leading medical scientists utilized the aggregate of more than three decades of experience, on two continents, to combat a determined opposition to the methods of medical research. This book is about that experience. At its core, it is about the strategies employed to try to cement an idea in the public consciousness: that the blood spilt in medical laboratories served a far-reaching human good.

⁶ The image and its context are more fully discussed in Chapter 5.

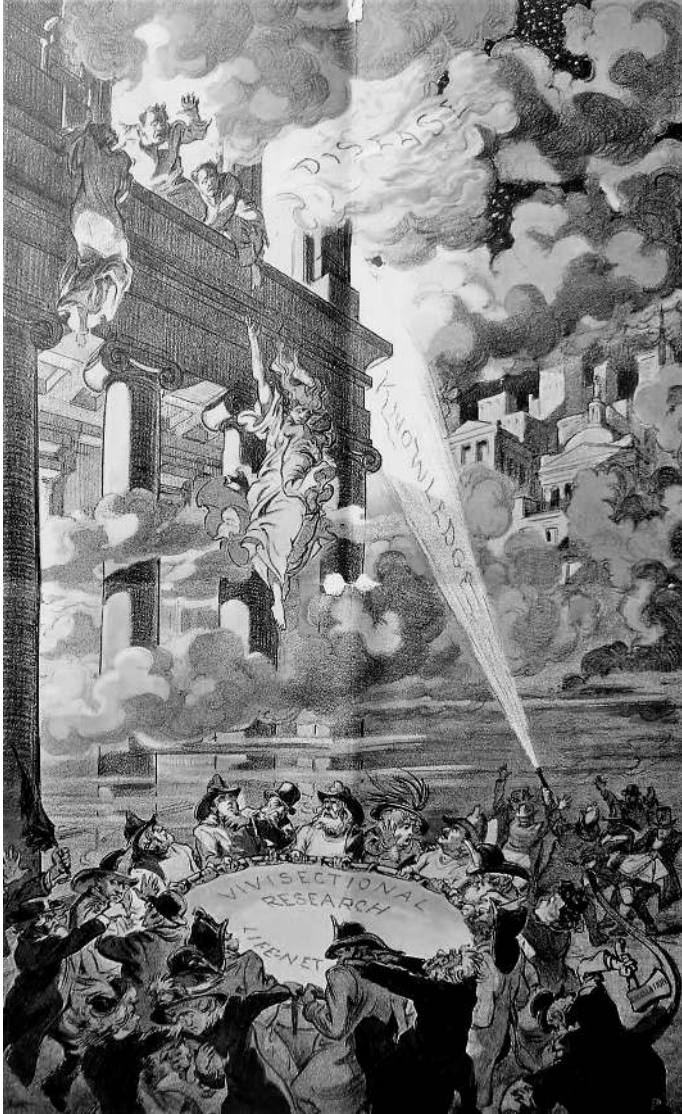


Figure 0.1 'Vivisectional Research', *Puck*, 1911.

There is no comprehensive work on the defence of medical experimentation that examines the entrance, in a coordinated and transnational fashion, of the modern medical establishment into the political arena and into the court of public opinion for the sake of self-preservation.

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This is an astonishing lacuna in historical knowledge. Around the turn of the twentieth century, medical research was put on a propaganda footing, its power centralized in increasingly corporate non-governmental bodies. This is the essential dynamic that allows us to understand how medicine's experimental impetus survived largely unchecked, especially in the USA. The activism of this period set a standard for the way in which the world of medicine would talk to the lay public.

The story climaxes around the beginning of the First World War, but has its roots in the second scientific revolution, which was pregnant with possibilities for medical science, and in the processes of specialization. Physiology, toxicology, bacteriology, immunology and surgery went through great innovative changes, based on new experiments on animals, people and society.⁷ The experimental impetus in medicine came from Germany and France. It gained traction in Britain around 1870 and soon afterwards in the USA. Throughout this period, beginning perhaps with François Magendie in France in the 1820s, medical experimentation was a challenge to morals, ethics and good taste.⁸ We know remarkably little about how the medical response to such opposition was organized, implemented and networked across oceans and across countries. These are the formative moments in the development of modern medicine's public-relations machinery, which in turn reveal its political influence and social authority. The arguments of the medical establishment were complex, attuned to a particular understanding of experimental practice as an affective practice of humanity. Susan Lederer once wrote of American medical 'defenders of unrestricted animal experimentation' that they 'almost exclusively devoted their discussion to appeals to the clinical benefits accruing from vivisection'.⁹ This is too narrow an interpretation. Medical scientists claimed an exclusive form of humanity in a carefully managed defensive strategy that was skilfully coordinated and built upon the lived experience of experimental beneficence.

Eminent individuals developed their defence of experimental medicine through a web of close-knit correspondence. Medical advances through vivisection, or the promise of such advances, had put the moral reputation of medicine itself in jeopardy. To combat accusations of cruelty and

⁷ The classic reference is Geroe Weisz, *Divide and Conquer: A Comparative History of Medical Specialization* (Oxford: Oxford University Press, 2005).

⁸ José Ramón Beromeu-Sánchez, 'Animal Experiments, Vital Forces and Courtrooms: Mateu Orfila, François Magendie and the Study of Poisons in Nineteenth-Century France', *Annals of Science*, 69 (2012): 1–26; Carin Berkowitz, 'Disputed Discovery: Vivisection and Experiment in the 19th Century', *Endeavour*, 30 (2006): 98–102.

⁹ Susan Lederer, 'The Controversy over Animal Experimentation in America, 1880–1914', in *Vivisection in Historical Perspective*, ed. Nicolaas Rupke (London: Croom Helm, 1987), 241.

callousness, the medical profession set about publicly emphasizing its humanity. The modern medical scientist as far-sighted humanitarian was both a conscious construction of medical-establishment strategy and a deeply felt and daily practised dispositional attitude. With the formation of councils for the defence of medical research, the lines between propaganda and educational campaigns, between empty rhetoric and lived experience, were often blurred. Meanwhile, significant energy was applied to blocking the passage of laws that would regulate or limit the freedom of medical scientists to experiment as they saw fit.

In Britain, the USA and Germany, the medical profession did successfully control the public image of experimentation while simultaneously keeping legislation at arm's length. The book charts the specific ways in which this was carried out, homing in on the role of 'humanity' in successfully influencing both public policy and public opinion. It is much more difficult to assess the reception of this approach among the lay public, but there are key indicators of this at various points. Without getting ahead of the story too much in advance, it should suffice to say at this point that the particular construction and experience of humanity that medical scientists employed and advertised was often laced with a social, cultural and experiential authority that was further reinforced by allusion to exclusive expertise. Insofar as this is the story of the success of medical-scientific strategy in both politics and public life, it is also the story of the wielding of this authority: the cultural heft of a particular affect.

I approach this story in roughly chronological order, but shift focus to different national theatres throughout. We begin with the outbreak of controversy in England in the 1870s, before following that controversy first to Germany and then to the USA. We then return to England for the continuation of the account as it shifted ground at the beginning of the twentieth century, before resuming the story in America, where new strategies for defending medical experimentation emerged. Throughout, I attempt to keep the connections between the ideas and the personnel involved intact. While national conditions had a major bearing on the nature of the defence in each country, medical scientists and their allies represented, for all intents and purposes, a single community with a coherent moral economy.¹⁰

¹⁰ Here I use the term 'moral economy' in the specific sense employed by Lorraine Daston, 'The Moral Economy of Science', *Osiris*, 2:10 (1995): 2–24: 'a web of affect-saturated values that stand and function in well-defined relationship to one another', deriving 'stability and integrity' from 'its ties to activities'. The moral economy combines *Denkkollektiv* and *Gefühlskollektiv*, which it expresses through social, bodily and professional practices (4–5). I have developed this approach empirically in *Science of Sympathy* and theoretically in *The History of Emotions* (Manchester: Manchester University Press, 2018), 190ff.

Magic

Medical-scientific research in the generation before the First World War modulated between the tropics of madness and magic, the monstrous and the heroic. Or at least, such was the range of its representation in public. For all their practical finesse, medical scientists grappled with the implications of both poles, and played a significant role in leading the public, and themselves, towards the magical and away from the mad.

Fast-forward to the 1920s, 1930s and 1940s and witness the high era of the doctor hero and of magical medicine.¹¹ In the preparation of this book, colleagues and peers frequently alerted me to this age of medical pre-eminence. The trope of the medical scientist hero in this period seems to be a matter of common knowledge. It is a matter of some wonder that, only a few years prior, so much seemed to be at stake, and a deep irony that the utilization of medical research in the twentieth century put such heroism in dubious ethical territory, justified more by nationalism and militarism than by humanity per se. But what had ushered in this apotheosis? Was it the First World War? Was it a particular scientific breakthrough that provided practical substantiation for biological magic? Perhaps both played a part, and I will spend some time working through the possibilities, but in general I take a more complex and *longue durée* approach.

The medical scientist as hero or magician had to be forged, which took time and fire. The process of fabrication is, of course, laden with double meaning. In this book I detail the ways in which scientists, through constant practice, constructed a new humanitarianism – a worldview that encompassed the elimination of suffering on a human scale – from the confines of the laboratory. The laboratory was a crucible of intellectual ideals, experimental means and emotional and moral ends. The results of this dynamic interaction were packaged and presented, in a circular fashion, as justification for the experimental method, and substantiation of a priori humanitarian claims. Experimental medicine – physiology, toxicology, bacteriology, immunology, neurology – aimed to salve and save, which in turn made the men who operationalized the experiments (their masculinity will be seen to be important) into saviours.

¹¹ For a general account, see D. Heyward Brock, ‘The Doctor as Dramatic Hero’, *Perspectives in Biology and Medicine*, 34 (1991): 279–95; Ross Mckibbin, ‘Politics and the Medical Hero: A.J. Cronin’s *The Citadel*’, *English Historical Review*, 123 (2008): 651–78; Bert Hansen, ‘Medical History for the Masses: How American Comic Books Celebrated Heroes of Medicine in the 1940s’, *Bulletin of the History of Medicine*, 78 (2004): 148–91; Charles E. Rosenberg, ‘Martin Arrowsmith: The Scientists as Hero’, *American Quarterly*, 15 (1963): 447–58; Howard Gest, ‘Dr. Martin Arrowsmith: Scientist and Medical Hero’, *Perspectives in Biology and Medicine*, 35 (1991): 116–24.

It is important to state at the outset that medical scientists, by and large, internalized the humanitarian intent that their methods and materials signified, and believed themselves to be the saviours they claimed to be. A comparison of public statements with an abundance of private correspondence demonstrates a remarkable consistency. Antivivisectionists were denounced in private in less guarded fashion, perhaps, but the argument that antivivisectionists' humanity was false, while theirs was true, was retained. While this in itself is not a radical claim, it nonetheless needs to be stated explicitly because of the temptation to think of medical scientists as duplicitous, their humanitarianism a simple representational veneer that allowed them to experiment with impunity. I maintain that such duplicitousness, did it exist, would have resulted in catastrophe for medical science. Given the external pressure on experimental ethics and the scrutiny on the morals of experimenters themselves, anything but absolute conviction would surely have led to calamitous collapse. There were outliers: cases of ethical breaches and evidence of callousness, but their exceptionality was often employed to highlight the more general rule. It requires a complex analysis to reach an understanding of the making of and the feeling of humanitarianism in laboratory practice, or, put another way, of the lived experience of experimental sympathy and humanity.

Jutta Schickore affirms that 'Experimental reports are not a reliable source of information about what researchers really do in the laboratory', but helpfully the experimenters in this book left far more behind than their formal reports and publications about what they did in their respective laboratories.¹² They wrote, to each other, for popular publications and for speeches before lay audiences, about what they intended to do or had done, why they intended to do it or to have done it, how it would be or was in fact done, and what they felt about the whole thing. They rigorously scrutinized their own methods, as individuals and under institutional observation networks, and enquired into the methods of their peers, self-policing in private so that their public avowals of ethical high-mindedness would not merely ring true, but actually be true (at least as far as they were concerned). In this period, therefore, we probably know more about what researchers really did in the laboratory than at any period before this point. Moreover, we know how they felt about and how they wanted other people to feel about it. This dynamic, of the lived experience of the laboratory on the one hand, and of the expression of that experience, to different audiences, on the other, is critically

¹² Jutta Schickore, *About Method: Experimenters, Snake Venom, and the History of Writing Scientifically* (Chicago: University of Chicago Press, 2017), 5.

important. It provides for us the stakes of laboratory experience as well as an appreciation of the range of meanings and significance of the laboratory, as institutional medical science became more deeply entangled with public interest in experimental practice than perhaps it ever had been before.

The lived reality of experimental feelings notwithstanding, the other implication of forgery remains an important avenue of research. Much of this book concerns the conscious representation of medical science for a non-medical audience. This representation was, on both sides of the Atlantic, carefully controlled by medical scientists themselves and by close allies in the press and in high society. It was, in the face of stiff and often poisonous opposition, necessarily a highly selective and partial view of what experimental research looked and felt like. It dwelt almost entirely on medical success (to the point that experimental failure is subsumed under the narrative of a process that *always* ends well). I will argue that the aggregate of such material played an important role in feeding back on to medical scientists, lionizing them to themselves and bolstering convictions that were increasingly deeply felt. While medical scientists distinguished themselves by their access to specialist knowledge, specialist practices and a community of more or less like-minded experts, they presented themselves to the non-medical world of respected public opinion as pillars of progress, civilization and sensibility.

Here we encounter medical science as genre. Given this high public interest, much of the writing for a lay audience discussed in this book is not scientific writing per se, but writing about science, with the complicity and support of scientists, constructed often by lay writers for lay readers. It is not scientific reporting but scientific *reportage*, heavily editorialized, carefully packaged. This kind of medical writing about experiment is a kind of banal magical realism. What happened as a result of laboratory research, according to the standard plot devices of this literature, was nothing short of *miraculous*, yet miracles of this type could be thoroughly described and explained, if one only looked into the details (although the details were not typically supplied). The reader, therefore, was presented with a stimulus to awe, but commanded to ground it in reason, and to take such reason on trust. The humanitarian marvels of modern medicine were indeed the most modern of ‘wonders’: secular, worldly, technical, professional, procedural and empirical. To a large extent, they were also hidden from view, not necessarily because there was ‘something to hide’, but because of a lack of faith that the intelligent public was intelligent or experienced enough. When defending themselves before legislators, this defence was often offered.