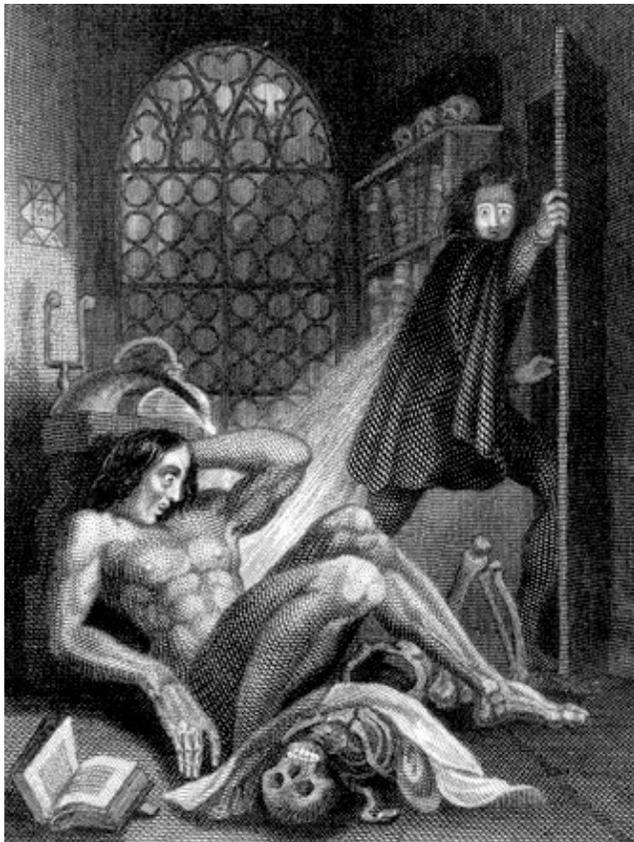


# In Retrospect: Frankenstein and Medical Technology

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Nearly two centuries since its publication, Mary Shelley's *Frankenstein; or, The Modern Prometheus* (1818) has become popular mythology in our techno-scientific culture, capturing the ongoing tension between utopian visions of science and their potentially dystopian consequences.<sup>1</sup> Read as a Romantic critique of Enlightenment rationalism, *Frankenstein* is often cited today as a warning against the dangers posed by unbridled pursuit of scientific knowledge and dominion over nature.<sup>2</sup> A more nuanced reading of Shelley's novel, however, suggests less of a categorical opposition to science, but rather reveals a prescient reflection on science's social dimension, with important lessons for medical technology.



**Figure 1.** Frontispiece to 1831 edition of *Frankenstein* by Theodor Von Holst (Tate Britain, London).

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*Frankenstein* tells the now-familiar tale of the scientist Victor Frankenstein, who, driven by a desire to discover the mysteries of life, endeavours to create a human being but produces a monster who brings eventual misery and ruin to his creator. Frankenstein's motives are not alien to modern medical science; he hopes his experiments will "banish disease from the human frame" and "renew life where death had apparently devoted the body to corruption." The protagonist's downfall results from his overzealous pursuit of knowledge and failure to recognize the social and moral responsibilities entailed by his research. Frankenstein's fateful experiment – the animation of his cadaveric construction – is necessary to create his being; however, it is the scientist's subsequent rejection of his creation combined with the prejudices of society that make the monster who wreaks havoc on humankind.

Shelley's narrative dispels what has been called the "myth of purity," the view that distinguishes between 'pure' science and applied science or technology, with the former operating in isolation from social values, and the latter being the sole focus of ethical deliberation.<sup>3</sup> Frankenstein's technology, which enables him to imbue dead matter with life, lands him in ethical quandary. Yet from the beginning his investigations are guided by a utilitarian moral of social improvement through control over nature. His research is not 'pure,' but rather is informed by Enlightenment values – that life can be created, death overcome, nature conquered. As Frankenstein proclaims, "Life and death appeared to me ideal bounds, which I should first break through, and pour a torrent of light into our dark world." Shelley criticizes these values: "frightful must it be; for supremely frightful would be the effect of any human endeavour to mock the stupendous mechanism of the Creator of the world."

*Frankenstein* shows how technology is never the straightforward application of value-free science, but rather the expression of a continuum of moral and social factors that shape all stages of scientific research. This lesson is important in an age in which we enjoy the benefits of many technologies, but must also reflect on the values they embody. For example, assisted reproductive technologies have undoubtedly brought joy to many parents unable to conceive; however, we must also recognize how socio-cultural notions of motherhood influence this research, which may frame child-bearing as a fulfillment of biological destiny, placing "pronatalist" pressures on women.<sup>4</sup> On the other end of the spectrum, medical technologies offer the possibility of prolonging human life; nonetheless, this pursuit of longevity raises concerns over the medicalization of aging and the goals of end-of-life care. *Frankenstein* gives us pause to reflect on the types of knowledge we wish to pursue to create medical technologies that improve – rather than harm – human life.



**Figure 2.** 1840 portrait of Mary Wollstonecraft Shelley by Richard Rothwell (National Portrait Gallery, London).

*Frankenstein* captures this dualism of benefit and harm produced by technology. Contrary to some Romantics, Shelley does not advocate the abandonment of science and technology and return to a Rousseauian ‘state of nature.’ Just as how

today the concept of the ‘natural’ no longer serves as a guide to normative ethics, Shelley’s narrative suggests that a return to an idealized ‘state of nature’ is not only impossible, but also undesirable. The creature’s existence before entering human society is far from ideal: “I was a poor, helpless, miserable wretch; I knew, and could distinguish, nothing; but feeling pain invade me on all sides I sat down and wept.” From this primitive state, technology can improve human life. The creature discovers fire and is “overcome with delight at the warmth,” relishing in the Promethean gift. However, he soon learns that fire not only brings pleasure, but also pain and destruction – “How strange, [he] thought, that the same cause should produce such opposite effects!” – burning his hand in the flames, and later setting ablaze the cottage of the De Lacey family after they reject him. Like fire, Frankenstein’s life-giving technology offers utilitarian hope, but is accompanied by damaging consequences. Shelley captures these contrasting aspects of scientific knowledge, which is capable of bettering humanity, but also threatens to render it miserable.

Although some pundits may allude to Frankensteinian dystopias to support exaggerated claims of the dangers of techno-science, Shelley’s novel should be read as a more balanced case study of scientific research gone awry that argues for social responsibility in science and ethical application of technology. Almost two hundred years later, Shelley’s tragic tale continues to evoke both hope in and fear of science, imparting important lessons for scientific research and medical technology.

### References

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