

The art of medicine

The medical imagination

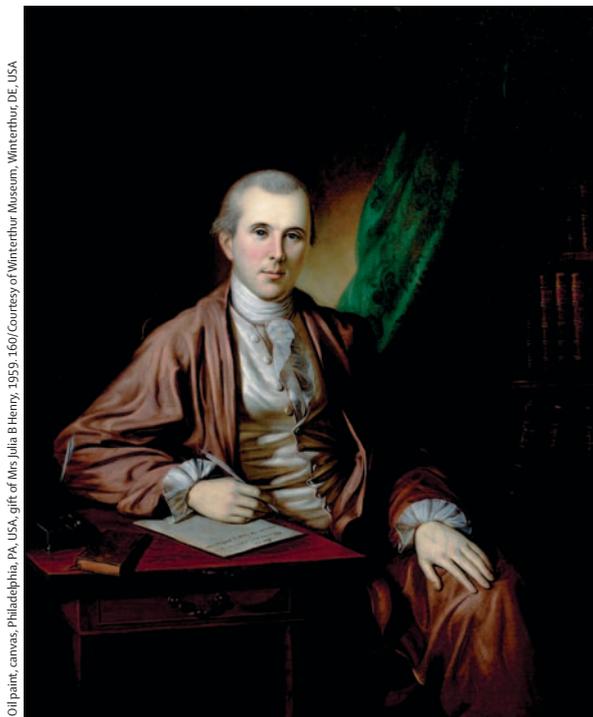
In its early years, *The Lancet* published articles about the work of famous poets Robert Southey, Samuel Taylor Coleridge, and Lord Byron, alongside medical reports. The 1823 Editor's preface proposed that: "our Columns will not be restricted to Medical intelligence, but on the contrary we shall be indefatigable in our exertions to render 'The Lancet' a complete Chronicle of current Literature." Nowadays Romantic poetry belongs to the realm of literature, and imagination is not a familiar word in medical publications. Of course, medicine privileges imagination in some ways—it's useful for helping doctors empathise, for helping patients heal, and for assisting in scientific discovery—but the imagination is not understood as a standard feature of empirical research or evidence-based medicine.

It was not always so. Before the 20th century, ideas about the imagination in medicine flourished. Influential US physician Benjamin Rush (1746–1813) articulated the work of the medical imagination perhaps most clearly. For Rush, imagination was central to medical knowledge and discovery. Beginning in 1791, he pressed each class of students at the University of Pennsylvania medical school to accept the imagination as "the pioneer of all the other faculties. It is a Christopher Columbus with respect to invention and discoveries". The imagination, he argued, "penetrates into the secrets of nature". When Rush spoke

of imagination, he wasn't talking about dragons or unicorns; he called that mental faculty fancy, and fancy had no place in medicine. Rather, Rush was talking about how the doctor's mind gathered observations and experiences, shifting and shaping them until new truths became clear. Memory was a component of this imagination, and understanding resulted from it.

This medical imagination was the partner of observation and experimentation. It worked with experience to organise information in new ways that made discovery possible. In 1859, British physiologist Benjamin Brodie reported to the Royal Society that while a small number of discoveries might owe their origins to accident, most began with the imagination. Only after imagining could observation, experimentation, and reason be used. "Physical investigation, more than anything besides", Brodie explained in an essay, "helps teach us the actual value and right use of the imagination—that wondrous faculty which...properly controlled by experience and reflection, becomes the noblest attribute of man, the source of poetic genius, the instrument of discovery in science". In 1901, *The Lancet* urged students beginning medical school to consider the part imagination played in medicine: "There are many branches of the complex science of medicine in which a mental quality is needed which is often considered to be antagonistic to accuracy. This quality is 'imagination.'" In 1912, *The Lancet* returned to the topic in an essay on "Imagination in Medical Research": "[I]ndeed it is manifest that imagination, as the parent of hypotheses explanatory of observed phenomena", the essay concluded, "is the ultimate source of all useful knowledge of the facts of life". The next year a medical professor at Columbia University in the USA wrote: "the history of medical discovery is a long chain of imaginative experiences whose links have been welded and fixed by passing through the fiery ordeal of appeal to experimental tests. And could we but set forth, in fitting language, the true story of these mental experiences, with all their vicissitudes of hope and despair, success and failure, we should certainly dispel for all time the wide-spread notion that medical research is a dry painful task, to which only an unimaginative mind can turn with satisfaction".

How did physicians develop this medical imagination in this period? One answer was education. Before the 20th century, medical students were often encouraged to pursue subjects like Latin, Greek, and philosophy to prepare them for medicine. According to one famous story, a student asked 17th-century physician Thomas Sydenham what to read to pursue a medical career. "Read *Don Quixote*", Sydenham replied, "It is a very good book. I read it still." That student, Richard Blackmore, went on to become a



Oil paint, canvas, Philadelphia, PA, USA, gift of Mrs Julia B Henry, 1959. 160/Courtesy of Winterthur Museum, Winterthur, DE, USA

Portrait, Dr Benjamin Rush (1783–86) by Charles Willson Peale

physician and poet. For many like Sydenham the medical imagination was closely related to literature. Two centuries later, US medical professor Christian Herter traced Hermann von Helmholtz and Louis Pasteur's medical achievements to their early devotion to art and literature. The Cambridge physiology professor Michael Foster wrote in 1899: "the true man of science shows the creative power which makes him and the poets brothers".

Physicians also developed their imaginations through writing. It was commonplace for physicians, well versed in literature and the classics, to weave lines of verse from Homer, Virgil, Shakespeare, and Pope in their medical writings and to find scientific evidence in verse. US physicians Samuel George Morton, Robert Montgomery Bird, and Amariah Brigham all did so. Explaining his own use of poetry in medicine, Rush argued that poets viewed phenomena "with a microscopic eye, and hence many things arrest their attention, which escape the notice of physicians". Doctors also wrote poetry themselves. Physician-poets had been a longstanding feature of the medical landscape, including Erasmus Darwin, Edward Jenner, and John Keats in the UK. In 1900, Canadian physician-poet William Osler observed, "It is remarkable how many physicians write poetry...I have been told of a period in the history of the Royal College of Physicians of London when every elect (candidate), as they were called, had written verses." Such poetry was exacting and precise; rhyme, metre, and literary devices helped to order the imagination and developed good thinking. As Rush told his medical students: "exactly the same thing takes place in the act of judgment in selecting and combining related ideas and rejecting such as are not related, as takes place in selecting and combining words, in writing poetry and rhyme".

Throughout the 19th century—the century that gave birth to modern medicine—physicians continued to privilege imagination. Traditional histories of the century narrate how medical research evolved from philosophical work to laboratory medicine; nevertheless, doctors continued to rely on their humanistic training and imaginations. For example, French physiologist Claude Bernard, an early advocate of the blind experiment, was praised by Michael Foster in 1878 for "remain[ing] a poet to his death". According to Foster, the "picturesque and far-reaching phrase[s]" of Bernard's poetic imagination impacted and shaped medical knowledge in ways "equal almost in value to a discovery". Here, as elsewhere, imagination was not an older tool of understanding but a complement to observation and experience.

By the turn of the 20th century, however, this view was changing. As early as 1892, American Medical Association President Henry Marcy insisted that contemporary knowledge about tuberculosis was founded in "scientific demonstration" and not in "imaginary speculation". An angry letter sent to US physician Stuart Close in response

to his 1896 essay about the imagination in medicine epitomised this new resistance to medical imagination: "with knowledge, imagination is not required. Imagination can never guide to truth", Close's respondent scolded, "there is no further use for the imagination in medicine, but only facts!" This shifting perspective was accompanied by changes in medical education that emphasised scientific preparation—biology, chemistry, physics—and no longer a broader variety of disciplines, making it harder to talk seriously about a medical imagination.

Some physicians were especially vocal about imagination's value as this shift was taking place because they could see what was being lost. In 1911, physician and medical lexicographer Thomas Stedman argued in *New York's Medical Recorder: A Weekly Journal of Medicine and Surgery* that medical education had grown "too somatic, too one-sided" and that all modern scientific advances combined "do not equip [the doctor] for his work as does his own rightly used imagination". He further lamented emerging perspectives: "Few, if any, of our human faculties have been more generally maligned and vilified in the common estimation than that known to psychology as imagination." Many of his contemporaries misunderstood imagination as solely the domain of make-believe. For Stedman, this view was understandable but dangerous, as imagination was not fancy; a well-regulated imagination was, he argued, "mother of much of the world's real progress" and responsible for "every kind of scientific understanding".

Physicians continue to value imagination today, if with less precision than in the past. The contributions of physician writers like Oliver Sacks, Vincent Lam, and Rafael Campo are rightly celebrated. Doctors continue to talk about the role creativity has in medical treatment and discovery. Nevertheless, we have trouble talking about exactly what imagination contributes to medical thought, especially beyond the doctor-patient relationship. Here the past can help. Before the 20th century, doctors saw imagination as central to medical work, but they also believed it needed to be cultivated and disciplined to be useful. They studied literary works and rigorously exercised their own imaginations. Of course, there is no need to return to 18th and 19th-century practices, but the spirit of medical inquiry in those times can help us see new spaces for medical imagination. Medical humanities programmes are a good place to start, but it's time to move beyond the focus on the clinical encounter in such programmes and to begin attending to the nature and value of imagination for medicine more broadly. A renewed attention to the ways we foster and train imagination can illuminate promising avenues for medicine today.

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