



Colin Webster, *Tools and the Organism: Technology and the Body in Ancient Greek and Roman Medicine*, Chicago: University of Chicago Press, 2023, ISBN: 9780226828770, 320 pp.

Geoffrey Nathan¹

Accepted: 2 August 2024

© The Author(s), under exclusive licence to Springer Nature B.V. 2024

What is the relationship between theories of the body and the therapies and tools used to inspect and treat it? That in essence is the question Colin Webster seeks to answer in his monograph on Greek and Roman medicine, offering an innovative and nuanced understanding of how somatic conceptualizations were related to the methods of exploration and treatment. In doing so, he considers a number of important issues: broader cultural and intellectual influences on medicine, the rise and fall and rise again of anatomical investigation, and the invention of the concept of the body as an organism. To do so, he focuses thematically on structural, investigative and analogical uses of various technologies to question and understand human physicality. In all, he makes a strong case for an ongoing and consistent discourse between ideas about physicality and ancient technology, even as theories and conceptualizations of the body changed over time.

As a history, Webster follows a roughly chronological exploration of his topic. He begins with Hippocrates and the doctors of the Hippocratic Corpus, continues with fourth century philosophical theory—understandably devoting considerable time to a non-medical author, Aristotle—then to Hellenistic thought centering on Alexandrine doctors, and eventually to the Roman period with Galen.

His first chapter begins by exploring how the treatments of early medical practitioners helped to create an understanding of the body's interior and its working. Through repetition and comparison to various mechanisms, diet, drugs and early therapeutic technologies, the nature and function of our biological processes slowly became defined. Various treatments emerged and were favored in the fifth and fourth centuries BCE, reflecting and privileging different understandings of corporeality. To take one example, in the Hippocratic treatise, *Diseases of Women*, the technologies

✉ Geoffrey Nathan
gnathan@sdsu.edu

¹ University of New South Wales, Sydney, Australia & San Diego State University, San Diego, California, USA

and materials used in therapies for the uterus also served as models for understanding the nature of their bodies: wool, which absorbs and expels moisture (for the “treatment” of menstruation), also was used to explain why women’s bodies were “soft.”

Webster then proceeds in his second chapter to go over the same period, but wishes to highlight several theories of the body, as well as the complicated and slowly developing idea of organs having individual functions. He argues that the source of this concept arose from explorations of human respiration and blood flow. The development of the “organic” idea would emerge later, helped by technological analogies (notably the *clepsydra*—a water clock with multiple parts—to explain breathing). Plato would take these ideas and, although quite different from our conception of the body and its purpose, coined the term “organism” in his *Timaeus*.

The third chapter focuses on Aristotle’s teleology of corporeality. Here, Webster emphasizes the philosopher’s identification, categorization and organization of the biological as key in understanding that the body’s functions were to maintain life. Organs were understood, to use a modern idiom, in terms of form following function. Respiration, arterial throbbing (pulsation) and the moving of blood throughout the body were some of the more prominent operative examples. But perhaps more important was Aristotle’s methodology, which relied on observation of the body’s parts—albeit at the most basic macroscopic level—and used technological analogies to explain them. He thought the heart produced blood, its pumping actions also acting as a boiler to heat it. Paradoxically, his investigations resulted in a theoretical understanding not so much of individual organs themselves, but rather the body’s physiology as a singular organism.

The fourth chapter moves onto the Hellenistic age, Webster focusing on the continued interest in anatomical investigation by doctors of the fourth through second centuries BCE. An important sidenote apart from the substance of this chapter: it was unclear how he defined this period. Depending on discipline, geographical region and of course specific topic, Hellenistic can mean different things. This reviewer inferred that the founding of Alexandria as a center of research and learning indicated its beginning, although its end seems far fuzzier. At the very least, this might have been made clearer, especially since the fifth chapter continues to cover a time traditionally considered part of this period.

This issue of chronology notwithstanding, Webster focuses on several doctors who continued anatomical investigation. Those working in Alexandria, a new center of learning, benefited from the many areas of intellectual pursuit in the Ptolemaic capital. Erasistratus and Herophilus in particular were able to construct new ideas concerning anatomy and function; essentially, they rejected older notions of the imbalances of humors as an explanation for illness, instead seeing health and function more mechanistically. This in turn privileged anatomical investigation in medical practice, as well as reinforcing the analogic dependency on tools and mechanisms (old and new) to explain the body’s workings.

Webster in the fifth chapter argues that the view of the body as an organism was subsequently rejected in the late Hellenistic/early Roman period, at least as it pertained to medical inquiry. New schools of thought, primarily Empirical and Methodist, raised serious doubts as to whether the anatomical approach was tenable, and Asclepiades of Bithynia in particular was more interested in movement in the body

than the function of its constituent parts. Still, the technology of the era continued to play an important comparative and investigative role, and the author suggests an important connection between the hydraulic systems of the Roman age and understanding human pathologies. For example, Erasistratus compared pneumatic devices and pumps that created pressure and movement in the aqueducts and other water structures to renal and vascular networks of the body.

The final chapter looks at the return of anatomical investigation in the late first and second centuries CE. Here, Rufus of Ephesus led the charge, but Webster understandably focuses on the prolix Galen, whose body of work was the most extensive in the ancient world. The doctor from Pergamum in particular saw the body designed as a perfect organism, with each part contributing to the function of the whole. His vivisection of animals (and human autopsies) displayed a vitalism that connected the concept of individual bodily function with tools and technologies used to elucidate that fact. Galen saw hands, for example, as a tool for tools, notably medical tools (and in a bit of “backwards thinking,” that humans were bipedal so as to make use of their hands). This relationship, he concludes, “highlight[ed] moments of recursion where the tools that he uses to articulate the body and enact its properties blend with the objects and behaviors they expose” (p. 271)—an observation which perhaps summarizes the entire thrust of Webster’s thesis.

In general, he makes a persuasive case. He demonstrates a persistent and continuous connection between the conceptualizations of the body and the technologies which helped elucidate its function and meaning. Despite the fact that there were sometimes radically different ways of looking at and understanding human physiology, the discourse between meaning and means remained consistent throughout the roughly seven centuries he covers.

There were two minor issues. The first is a concern about coverage. Webster understandably begins in the fifth century BCE and has chosen to finish his exploration at around 200 CE. Indeed, Galen’s massive corpus is a traditional place to end. But is it a logical one? As a late antique historian, this reviewer would have liked to have seen the discussion go a bit further. The work of the fourth century medical polymath, Oribasius, might have made a better stopping point, in part because he drew so heavily on often lost works of earlier doctors. Indeed, this physician of the emperor Julian is occasionally cited by Webster. Or perhaps Paul of Aegina, the seventh century Byzantine physician, who in many ways represents a summary of and an end to ancient medicine: he also saw the human body as an organic mechanism. If the goal is to look at this topic in Antiquity, there are at least another two to three more centuries that might have merited consideration.

The second issue is one of exposition. A minor distraction and occasional obstruction throughout the book is some of the language Webster employs. Sometimes, it qualities elucidate; at other times, they obfuscate. For example, when summarizing the impact on notions of the body through the use of medical equipment, he writes, “Although not totalizing in their force, these technological interfaces structure bodies around different sets of tools and create different notions of corporeality in the process” (p. 75). That certain words (e.g. epistemic and heuristic) seem to be used in different ways did not help. Admittedly, this is hardly a book for the general reader,

but such technocratic purple prose can at times distract and—ironically in the pursuit of clarity—confuse.

Taken as a whole, however, this is an original, engaging and thought-provoking monograph. Webster raises many questions, both about his specific topic and more basic epistemological questions about how knowledge was constructed in the past—and indeed how we do so today.

Publisher's Note Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.