

**Review of: Stefanos Geroulanos and Todd Meyers, *The Human Body in the Age of Catastrophe: Brittleness, Integration, Science, and the Great War* (Chicago and London: Chicago University Press 2018).**

David Freis  
Institute for the Ethics, History, and Theory of Medicine  
University of Münster  
david.freis@uni-muenster.de

In the wake of the First World War's centenary, there is anything but a lack of new books on the topic. Yet, Stefanos Geroulanos and Todd Meyers's *The Human Body in the Age of Catastrophe* stands out of the crowd. Like many others, it is a study about the mass casualties of the first industrialised war, but the authors do not tell yet another story of battlefield medicine, gory surgery, shell shock, or prosthetics. And, different from what the title might seem to suggest, they do not look at the most gruesome injuries. Central to the book is the phenomenon of wound shock, a condition where even seemingly minor injuries could lead to the irreversible collapse of bodily functions and the death of the wounded body. The question how this might be explained and averted, and the question why some of the wounded would die while others would survive similar or worse injuries, became the topic of extensive research and debate in wartime medicine.

Placing wound shock at the centre of a medical history of the First World War puts the notion of shock outside of the history of psychiatry and shell shock, which has dominated the discourse to the present day. Instead, the focus here is on physiology, a laboratory-based discipline situated between clinical medicine and foundational research in biology, which up to now has received little attention in the context of wartime medicine. At its core, the book is an intellectual history of physiology in the first third of the twentieth century. Reading physiologists as philosophers, the authors propose a bold argument: that the First World War ushered in a new view of the human body as an integrated whole, a complex organism that could be remarkably resilient, but profoundly vulnerable and fragile as well. This idea, they claim, did not remain limited to wartime medicine, but offered a new paradigm for thinking about complex systems such as the economy and society, with lasting influence throughout the twentieth century. Retracing the shifts in physiologists' understanding of the organisation of the human body, the book bridges perspectives from intellectual history with medical history, the history of science and the history of biology, while branching out into other fields such as psychoanalysis, sociology, and economics, and touching on topics from voodoo to cybernetics and personalised medicine.

Due mostly to this thematic range, this is a challenging book to summarise. Geroulanos and Meyers organise their account into three parts, with ten chapters in all. The first part outlines the history of physiology prior to the war, and introduces the protagonists of the study, all of them leading researchers in physiology and neurology. It is the second chapter that is most directly focused on wartime medicine, exploring the emergence of wound shock as a medical problem with the onset of the war, the medical response, and the fierce debates about shock that took place between 1916 and 1919. Wound shock was the original shell shock, the authors argue, and pointedly criticise a historiography writing through the lens of psychiatry (and psychoanalysis) for imposing an artificial distinction between body and mind, and between somatic and psychic trauma (71f). A short coda makes an important contribution to the debate by taking a closer look at the historical language, and the ambiguous uses of the notion of 'shock'. In the third chapter, the authors examine case studies as a genre of medical writing to illustrate one of their main and

recurring arguments: that physiologists' changing views on the integration and brittleness of the human organism and the variety of the wounds and how injured bodies reacted led to an increased importance of casuistic knowledge and to a new concept of individuality that saw each patient in her or his uniqueness, but still left no real place for patient voices.

The second part reconstructs the ideas of a number of prominent medical thinkers through a close reading of their books, lectures, and unpublished correspondence from the turn of the century to the 1930s. In the fourth chapter, these are the British neurologists Henry Head and Charles Sherrington, and their German colleague Kurt Goldstein. Following up on themes from the first part, Geroulanos and Meyers shift the focus to brain injuries, whose incidence unsurprisingly soared for the duration of the war and show how these researchers used them to explore philosophical questions of integration and individuality. The American physiologist Walter Bradford Cannon, known today for introducing the concepts of homeostasis and the fight-or-flight response, is the protagonist of the fifth chapter, in which the authors trace his shift from studies about the digestive system to research on the human body as a 'hormonal and emotional whole, and later, to a homeostatic self' (139). They then come back to Goldstein and Cannon, as well as the British physiologists Henry Dale and John Haldane, to explore further how these researchers reframed the body as a complex, integrated whole constantly threatened from the inside and outside. In the seventh chapter, the perspective widens as the authors turn their attention to the post-war writings of Sigmund Freud and the British anthropologist and neurologist W.H.R. Rivers, as they discuss the direct and indirect influences of wartime physiology on psychoanalytic thinking and the emergence of the contentious idea of the death drive.

The third and final part is about how 'physiological integrationism spread its politico-economical wings' (255). Throughout the post-war period, thinkers from other disciplines appropriated physiologists' concepts of bodily integration and systemic crisis. Jurists and sociologists recognised the body physiological in the body politic as post-war societies seemed threatened by collective shock and disintegration. The crash of 1929 again exposed a fragility of national and global economies that could be framed in terms of self-regulation, integration, and functional disorder. And physiological ideas found their way into other fields as well: Cannon's article about magically-inflicted 'voodoo death' influenced anthropologists as well as psycho-somatic medicine, while his concept of homeostasis was lifted out of its medical context in Norbert Wiener's cybernetics in the second half of the 1940s. The ninth chapter returns to medicine, discussing how physiologists' concept of homeostasis led to a renewed interest in the self-healing of the body, and how their medical individualism gave rise to a neo-Hippocratic understanding of the role of the physician and the doctor-patient-relationship. The book concludes with a brief tenth chapter, in which the authors reiterate some of their main claims.

Geroulanos and Meyers skilfully trace the evolution of physiological ideas in the first third of the twentieth century by closely following debates among leading medical researchers. They add to intellectual history a new and intriguing perspective on the human body as a frail and complex organism and explore the influence of medical concepts on political and economic thinking. At the same time, this is also a significant contribution to medical history, reading medical writings as a form of philosophical and political thought. However, at its core, the book is an intellectual history of physiology in a relatively traditional sense: the authors are mostly interested in changes in idea, explored by following the written thought of a selection of major (and, as usual, male) thinkers. This, in my view, is the book's most evident limitation: its approach remains largely

intertextual. The focus is on medical thinkers, as opposed to medical practitioners. There is little place here for the messy world of every-day medical practice, and although this is a book with the discovery of medical individualism as its central motif, patient voices are virtually absent. This directly affects the book's ability to answer its main question: how did the war actually lead to the conceptual shifts in physiology, if not just as a source of cases to research? Another issue is that, while the complexity and nuance of the account is impressive and I enjoyed the authors' attempt to follow their topic to unexpected places, the same properties also make it easy for the reader to get lost. The last two full chapters, eight and nine, in particular, overspill with fascinating connections and ideas to the point of feeling a little cluttered. One reason is the lack of a strict chronological structure, as many chapters as well as individual paragraphs span four decades or more, covering the period between the turn of the century and the late 1930s. Occasionally, a more explicit contextualisation might have been useful – the narrative moves easily between the English-speaking and the German-speaking world, but differences in context and experiences are often left unaddressed. The same is also true for politics. While the authors rightly and convincingly argue that physiological concepts were inherently political, we only learn about the political views and involvements of some protagonists in the final part of the book.

Yet, these caveats notwithstanding, this is an outstanding book and clearly one of the most important contributions to the history of medicine in the first half of the twentieth century to appear in recent years. It is highly original, densely written, and driven by a bold and engaging argument. Geroulanos and Meyers break genuinely new ground at the intersection of intellectual and medical history, and there is reason to look forward to future research that it will inspire.