The Human Body in the Age of Catastrophe: Brittleness, Integration, Science, and the Great War, by Stefanos Geroulanos and Todd Meyers

By Linda Maynard
Twitter: @DrLindaMaynard

By Linda Maynard (/author/linda-maynard)
Twitter: @DrLindaMaynard (http://www.twitter.com/DrLindaMaynard)

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Casualties of war: this study shows ‘that shell shock was conceived on the functional model of wound shock’, countering the centrality of psychological trauma
Four days after the end of the First World War, leading surgeons and pathologists convened in the base port of Boulogne for a conference organised by the British Expeditionary Force. At the heart of the ensuing debates was the question of the most appropriate treatment for “wound shock”, a little-understood disorder, and one over-shadowed in the popular imagination by shell shock. Once wounded, the soldier-patient’s body appeared at war with itself, with apparently minor injuries often proving fatal. Although surgical shock was a known condition before the war, the scale of casualties facilitated a clinical turn in medical practice. Shock became an epistemic enabler for an emerging generation of researchers; the soldier’s body the basis for a rearrangement of medical thinking.

At the heart of Stefanos Geroulanos and Todd Meyers’ richly innovative study is the question posed by one of their key protagonists, the American physiologist Walter Cannon. His consideration of the fragile complexities of the self-regulating organism led him to wonder, “Why don’t we die daily?” Structured in three parts, the book assiduously traces the development of a new way of conceptualising the human body through a study of whole-body conditions such as wound shock and brain injuries. Still a relatively young discipline in 1914, physiology had already staked ambitious claims for the field. Leading practitioners produced a logic based around integration and disintegration. The intellectual rigour underpinning their work meant that it reached beyond the confines of medical discourse to influence political, legal, economic and social thought in the post-war decades. As such, this book presents a novel stance on the First World War as a catalyst for societal change.
The first section is grounded in the laboratory of the battlefield. Mass casualties on the Western Front provided practitioners with unprecedented access to patients, reducing an overreliance on animal experimentation. The range of borderline cases defying existing diagnostic categories troubled physicians. In response, the case study was mobilised as a narrative, analytical, administrative and interpretive device. Such case histories proliferated in part as a means of capturing diverse responses to injury from a generic patient pool – soldiers were male, mostly white, relatively young and comparatively fit.

Each case represented an individual, but also formed the heart of aggregated knowledge banks facilitating comparisons and categorisations. Consequently the case study, as Geroulanos and Meyers convincingly argue, became a vital technology, one that was utilised in different ways by a diverse range of practitioners – such as the psychologist W. H. R. Rivers, the...
French surgeon and pain expert René Leriche, and the German neurologist Kurt Goldstein. The inherent plasticity of its form provided experts with a tool to guide them through the no-man's-land of disorders generated by mechanised warfare on an unprecedented scale.

Wound shock affected patients in profoundly individualised ways. A disproportionate number of shock deaths from femur wounds prompted the establishment of the London Shock Committee. Physiologists developed a canonical understanding not only of symptoms of shock but also of the cardiovascular, respiratory and emotional responses to injury. Despite their efforts, no sovereign remedy was found. The most effective treatment was the Thomas traction splint, together with a system of blankets folded over and under the wounded soldier. This single measure, stabilising body heat and blood pressure, contributed to a dramatic decline in fatalities. As this study evidences, the real value of physiological work on wound shock was not practical but a conceptual appreciation of the brittleness of the integrated body.

In the second section, the authors painstakingly dissect the conceptualisation of integration in the works of neurological, psychiatric and ethnographic researchers. Guiding us deftly through the complexities of the literature, they create a compelling narrative of scientific endeavour. Careful analysis of published writings highlights the building blocks, linkages and divergences in the thought processes of their selected protagonists.

The horrific mutilations rendered by wartime brain injuries provided fertile ground for research. Neurologists Henry Head and Goldstein engaged critically with Charles Sherrington’s 1906 text, *The Integrative Action of the Nervous System*, establishing the foundations of neurological and physiological understandings of integration. Working in parallel, they developed a new understanding of the brain-injured organism as a unit on the verge of breakdown. Although their
understandings of individuality diverged, at the core of both conceptualisations was a logic binding integration with disintegration, specifically how the injured body strives to restore itself to wholeness.

Advances were rarely linear, even if their creators professed that they were. Geroulanos and Meyers carefully unpick shifts in Cannon's methodological and intellectual priorities throughout his paradigm-shifting articles and treatises. Initially focusing on the mechanics of the digestive system, Cannon broadened his approach to consider emotional and hormonal influences, culminating in his presentation of the body as an integrated system in his “crowning work”, The Wisdom of the Body (1932), which consolidated his central concept of homeostasis, the devices by which human organisms control their own stability. This leads on to one of the book’s most fascinating chapters, which looks at the major, sometimes acrimonious, debates within physiology in the lead-up to a fully fledged homeostatic theory.

Running across the first two sections of the book is the influence of physiological understandings of bodily disintegration on psychoanalytical work about shell shock. Examining shell shock through the perspective of psychic trauma presents an unhelpful conceptual frame based on a physical-mental dichotomy. By demonstrating that shell shock was conceived on the functional model of wound shock, this study provides a valuable counterweight to the centrality of psychological trauma in representations of the war. The new physiology was in turn highly influential on Sigmund Freud. In the absence of contextual evidence, close readings of drafts of Beyond the Pleasure Principle (1919) show Freud's efforts to recalibrate his drive theory in response to the threat posed by medical-physiological understandings of integration, in particular the psychiatry of Rivers.

The authors' forensic examination of the refinement and reformulation of core concepts lays the groundwork for the
book’s final section where they make the persuasive argument that this coterie of clinician-physiologists should also be lauded as intellectuals, engaging and inspiring thinkers across disciplines. Bodily metaphors of integration, collapse and crisis became embedded in politico-economic, legal and internationalist rhetoric. Direct lines of influence can be drawn between physiological integration and developments in other fields. Norbert Weiner and Claude Lévi-Strauss both drew on Cannon's postulation of a social homeostasis. The emergence of a concept of the symbolic in philosophy and anthropology, embedded in the works of Ernst Cassier, Marcel Mauss and Lévi-Strauss, was explicitly based on the neurological theories of Goldstein and Head. These examples demonstrate the resonance of this web of concepts on political and social thought.

At the passing of the centenary, Geroulanos and Meyers present an imaginative case for the First World War’s transformative effect on popular and scientific understandings of the human body. Their careful exposition of the spiralling development of the concept of physiological integration in the fields of anthropology, cybernetics and philosophy makes a highly original contribution to 20th-century intellectual history and will provide a fertile springboard for future research.

Linda Maynard is a historian currently researching brotherly love in the First World War.

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The authors


Throughout his career, says Geroulanos, one of his central concerns has been “how we understand ‘the human’ – how definitions of humanity have prioritised or excluded particular ways of life, how they play a role in everyday and even physical concerns”. In their new book, he and Todd Meyers have explored “the way doctors and physiologists cared about the human body – how they changed their understanding of it quite radically by having to square wartime injuries with ideas that might or might not ‘work’.”

Todd Meyers, director of the Center for Society, Health, and Medicine at NYU Shanghai, grew up in Indiana and Belgium before studying painting at the School of the Art Institute of Chicago (https://www.timeshighereducation.com/world-university-rankings/school-art-institute-chicago) and volunteering for the Peace Corps in Papua New Guinea. While doing graduate studies in anthropology at Johns Hopkins, he “also spent considerable time at the Institute of the History of Medicine” and developed an interest in “palliative care, adolescence, opioid addiction and clinical treatment settings”. Most of his later projects have addressed “the tension between

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the experience of illness or injury and categories developed and assigned by medicine”.

Asked about the relevance of their research to current debates, Meyers points to the question of “the status of the injured soldier both at war and returning to civilian life...the expectations of healing and reintegration into society are still sorely out of step with the realities of harm and the resources needed to make return possible”.

Matthew Reisz

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