

Alexander L. Gungov, *Patient Safety: The Relevance of Logic in Medical Care*, Studies in Medical Philosophy, no. 5. Stuttgart: *ibidem*-Verlag, 2018, 136 pp., € 24.90, ISBN 978-3-8382-1213-5

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The philosophy of medicine is a burgeoning subfield of the philosophy of science. As one definition goes, philosophy of medicine “seeks to explore fundamental issues in theory, research, and practice within the health sciences, particularly metaphysical and epistemological topics.”⁹⁴ If we accept this definition, then Alexander L. Gungov’s book titled *Patient Safety: The Relevance of Logic in Medical Care* not only falls squarely within this field, but also makes much-needed contributions to its practical as well as its epistemological and metaphysical aspects. In addition, it also tries to put the clinical practice in a wider context, always keeping in mind how patient safety can be better safeguarded. This context is made explicit in the introduction, where Gungov proposes a third approach to the practice of medicine, beyond evidence-based medicine and the patient-centered approach that are the two well-known ways of care, namely a person-centered approach.⁹⁵ In this contextual approach, he is clearly influenced by the hermeneutical philosophy of Hans-Georg Gadamer. However, the core theme of the book is “the relevance of logic to patient safety and to medical care in general,”⁹⁶ where logic is to be understood in the continental and pragmatic philosophical sense.

The structure of the book reflects the will of the writer not only to provide a philosophical perspective of medical practice but also offer a

⁹⁴ Reiss, Julian and Rachel A. Ankeny, "Philosophy of Medicine," *The Stanford Encyclopedia of Philosophy* (Summer 2016 Edition), Edward N. Zalta (ed.), (last accessed on October 3, 2020) URL = <<https://plato.stanford.edu/archives/sum2016/entries/medicine/>>.

⁹⁵ Alexander L. Gungov, *Patient Safety: The Relevance of Logic in Medical Care* (Stuttgart: *ibidem*-Verlag, 2018), 10.

⁹⁶ *Ibid*, 11.

kind of logical textbook for practicing clinicians to help them avoid logical errors and thus further enhance patient safety. The first part is concerned with the concepts of etiology and pathogenesis. Etiology can be associated with John Stuart Mill's inductive logical method. This type of thinking is primarily concerned with the correlation of events and is thus deemed inadequate since "[i]nductive methods...lead only to probable but not necessary conclusions."⁹⁷ In order to reach closer to pathogenesis, in Giambattista Vico's sense of the term, we need to use the rules of *modus ponens* and *modus tollens* and reach the pathognomonic⁹⁸ cause of a disease. The Vichian approach is based on the *verum-factum* principle — which states that to be able to grasp the truth of something you need to be able to reconstruct it⁹⁹ — and incorporates three levels of causation. Mill's inductive logic is allocated to the first level, whereas Vico's pathogenesis lies on the third, with the intermediate level being that of context.¹⁰⁰ The aim of pathogenesis is not only to fully reconstruct a disease, rather than simply indicate its etiology, but also to provide a better care plan for each patient. For that to happen, Gungov suggests that pairing the Vichian principle with the speculative thinking of Hegel is the best way forward.¹⁰¹

In the second part of the book, Gungov offers an alternative way of diagnosing a patient that is neither deductive nor inductive, but rather abductive. Based on the American pragmatist and logician Charles Sanders Peirce, abductive logic “refers to the reconstruction of the cause from the effect,”¹⁰² resonating with the *verum-factum* principle. In deductive logic a clinician would go from the universal, the nosological unit, to the individual, the specific patient, through particular cases, and in inductive logic he would follow the exact opposite route. However, in abductive reasoning, the clinician starts from the individual and through the universal draws conclusions about the particular.¹⁰³ Gungov goes on to examine the methods that clinicians use, pointing out their respective

⁹⁷ Ibid, 28.

⁹⁸ Ibid, 38.

⁹⁹ Ibid, 21.

¹⁰⁰ Ibid, 47.

¹⁰¹ Ibid, 52.

¹⁰² Ibid, 58.

¹⁰³ Ibid, 61.

shortcomings before moving to the question of the affirmative inference that is critical in clinical practice. The main characteristic of that inference is that it proceeds backward, from the effect towards the cause. One other characteristic of clinical reasoning, when engaged in the task of diagnosing, is the presence of heuristics. Both these features are best accommodated within the framework of abduction and not the hypothetico-deductive method.¹⁰⁴ Abduction, in its synthesis with speculative thinking as conceived by Gungov, has three characteristics: coherence, teleology (exemplified by homeostasis), and continuity.¹⁰⁵ The levels of individual, universal and particular are combined through abductive reasoning and thus form the concept of a disease in the Hegelian sense, which is not just a logical notion but also has ontological and epistemological implications. Hegelian dialectics are in play here and they form a kind of hermeneutical circle where the direction is not only from the universal to the particular and individual, but also vice versa.¹⁰⁶ Another advantage of abductive inference is that it involves a dual truth criterion, based not only on coherence but also on correspondence.

In the third part, Gungov is concerned with the specific errors that occur during the act of diagnosis, providing a useful guide for clinicians and logicians alike. Of course, not all errors in clinical practice are related to logical fallacies, and Gungov provides possible categorizations and definitions of error at the beginning of the chapter, before concentrating on the fundamental and more informal logical hindrances in diagnostics. Finally, he directs his attention to cognitive errors, which clinicians are liable to make when they are biased towards a specific diagnosis and are not able to grasp the whole picture. This part is more practical and succeeds in showing that diagnosis is a method of interpreting a given situation and not just of discovering facts.¹⁰⁷

For Gungov, clinical medicine is an ideographic and not a nomological science in the sense that “it is interested in linking general rules with individual cases ... Clinical medicine follows the heuristics of abductive reasoning guided by the principles of coherence, continuity, and teleology and the dual criterion of truthfulness drawing upon coher-

¹⁰⁴ Ibid, 77.

¹⁰⁵ Ibid, 85.

¹⁰⁶ Ibid, 88.

¹⁰⁷ Ibid, 121.

ence and correspondence.”¹⁰⁸ His book, *Patient Safety: The Relevance of Logic in Medical Care*, succeeds in elucidating a much-needed logical approach to clinical practice, one which is bound to help both clinicians and patients to achieve a greater degree of safety. He also succeeds in providing a fruitful synthesis of philosophical ideas — Vichian, Hegelian, and pragmatist — in relation to the practical sphere of clinical diagnosis. It also raises very important philosophical issues for the science of medicine that are worth attending for anyone with an interest in this specific field or the philosophy of science in general.

¹⁰⁸ Ibid, 124.