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Thomas Sonar. *The History of the Priority Dispute between Newton and Leibniz*. *Mathematics in History and Culture*. xxvii + 549 pp., bibl., figs., index. Cham, Switzerland: Springer, 2018. \$79.95 (cloth), ISBN 9783319725611.

Thomas Sonar's (2018) work on the priority dispute between Newton and Leibniz provides a detailed and colorful account of an exciting chapter in the history of science. Today, it is widely agreed that Newton and Leibniz had equally good reasons to claim the calculus as their discovery. Newton invented his method first, but Leibniz developed his work independently and was the first to publish on it. In their own time, however, it was highly controversial whether Newton or Leibniz was the true inventor of the calculus, and whether, perhaps, one of them stole the idea from the other.

The History of the Priority Dispute between Newton and Leibniz analyzes the development, causes and implications of the conflict over the calculus. The book describes the various stages of the controversy, and sketches the broader scientific and political developments in early modern Europe. Sonar elaborately discusses the lives and works of the various players in the debate, and considers how they contributed to its escalation. The book pays special attention to the mathematical developments connected to the debate. Sonar discusses the influence of earlier mathematical discoveries, considers how Newton and Leibniz arrived at their inventions, and describes some of the contributions of their followers. Sonar also analyzes Bernard Nieuwentijt's and Berkeley's objections against the foundations of the calculus. The book's first chapter forms an introduction to differential and integral calculus.

Sonar's *The History of the Priority Dispute* brings together a great amount of good existing work on various topics, but it presents few historical findings and interpretations of its own. It remains unclear which research questions the book answers, or which theses it argues for. As a result, the elaborate discussions it offers often feel somewhat superfluous, even though they cover interesting material. It is difficult to see how the various details contribute to a larger point. Sonar writes in an informal, cheerful style and his enthusiasm for his topic is clearly visible throughout the book. However, his writings contain several uncared-for formulations that are distracting and confusing. Another issue is the book's neglect of basic conventions in citing and translating. Primary sources are regularly quoted with references to secondary sources only, and quotes of non-German sources are sometimes based on German translations. This latter point gets especially bewildering in Sonar's treatment of Berkeley.

The main contribution of *The History of the Priority Dispute* to the existing literature consists in its elaborate account of the mathematical developments leading up to the priority dispute. In this respect, the book certainly adds to for instance Alfred Rupert Hall's earlier *Philosophers at War. The Quarrel between Newton and Leibniz* (1980, Cambridge University Press). Sonar seeks to make his discussions of the mathematical side of the story accessible to readers without a technical background, and in as far as the book accomplishes this, it will definitely be of value to its readers. Unfortunately, I am not sure that the book does that well in this respect either. The book may form a helpful starting point for readers who are motivated to grasp the mathematics that Sonar discusses and who are willing to make an effort. However, I do not find the mathematical discussions particularly easy to follow. Some technical notions could be introduced with greater care, and the intuitions behind the presented results could often be presented more clearly. For instance, Sonar explains in detail how Pascal's so-called characteristic triangle allowed him to compute the definite integral of the sine function. If one fails to understand one of the steps in Sonar's technical exposition, however, it is difficult to

get even a rough grasp of Pascal's accomplishment. A brief summary of the basic idea behind Pascal's result would make the discussion more accessible. Similar issues can be raised for some of Sonar's other analyses, and I suspect that even the book's first introductory chapter is daunting to many of the readers it aims at.

Sonar's *The History of the Priority Dispute between Newton and Leibniz* provides a thorough overview of the history of the invention of the calculus. It draws attention to fascinating details, and non-experts with a serious interest in the topic may definitely enjoy reading it. The book also forms a helpful guide to other sources on the topic. However, the book has too many drawbacks to satisfy as a scholarly or introductory work.

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