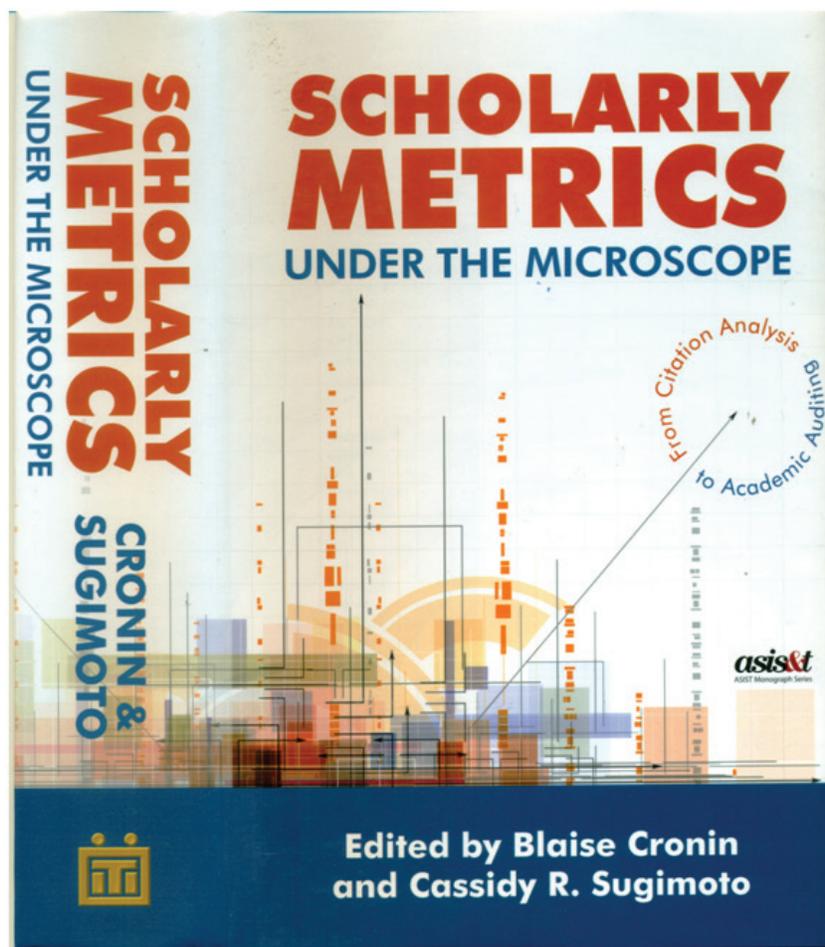


Book Review: Understanding the Development of Scholarly Metrics in a Networked Society

Scholarly Metrics under the Microscope: From Citation Analysis to Academic Auditing, edited by Blaise Cronin and Cassidy R Sugimoto. Information Today Inc., Medford, New Jersey, USA, 2015, 963 pages, £130.00 (Hardback), ISBN: 9781784718046.



This book is a collection of 55 citation classics published between 1955 and 2013 written by the well-known scholars in bibliometrics, scientometrics, science policy, research evaluation, and research communications. The editors of this volume, Blaise Cronin and Cassidy R Sugimoto took a great effort to prepare this collection. Then they curated the contents in six parts, namely, (I) Concepts and Theories, (II) Validity issues, (III) Data Sources, (IV) Indicators, (V) Science Policy, and (VI) Systematic Effects, giving a lyrical title for each essay introducing a part. The editors here introduce each part equally eloquently while organizing the chapters. In addition

to an insightful introductory text for each part, the editors offer an analytical introduction to the book and a future analysis in the epilogue. The editors of the book feel that the fast-expanding field of scholarly metrics requires a relook, particularly in light of the theoretical, conceptual, methodological and ethical dimensions. They further propose that “by assembling a representative cross-section of the literature critiquing evaluative bibliometrics we may be able to raise awareness of the approach’s limitations and also encourage greater procedural caution among relevant constituencies” (p. 4). Thus, the book gets unveiled to identify the authoritative papers in evaluative

bibliometrics, and subsequently to enjoy the microscopic view for each milestone in the timeline of scholarly metrics.

Many of the essayists in this anthology are figured as one of the top leading scholars in the inter-disciplinary research area of bibliometrics, as one can see on the Google Scholar Profiles having label 'bibliometrics' or 'scientometrics.' Most of the chapters re-published in this anthology are single-authored, while the respective authors for the first time introducing their original ideas to the greater scientific audience. This can also be observed here that the authors were based in various institutions in the United States and Europe in various STM (science, technology, and medicine) disciplines, where measuring scientific productivity became a featured framework in academic life in the beginning of late twentieth century as research fundings were exponentially increasing year-by-year after the World War-II. As the subtitle of the book suggests, the book presents a collection of insightful essays published in the thematic areas of citation analysis, research evaluation, research indicators, and measuring scientific productivity in academic departments.

In the introduction of the book, titled "Introduction: The Drunk, the Keys, and the Streetlamp", Cronin and Sugimoto provide an overview of the themes, broader theoretical frameworks, and the evolution of scholarly metrics. The author also describes the genesis of bibliometric indicators in the last 60 years (1955-2015), more particularly, the citation-based indicators, research visibility, and very recent developments impacting individual scientists, research funders, universities and scientific societies. After the introduction, the book begins with the oldest essay included in this book written by Eugene Garfield (1955) that discusses the idea of having Citation indexes for science. Garfield introduces here how citation indexes would be formed and how literatures from published sources and cited references could be put together for knowing the growth of subject fields and impact of every scientific journal. Several historical facts and figures are given in the essay, which the readers can compare with the present day situations to become aware of the exponential growth of literature in every subject area. The citation indexes, developed by Garfield, had been capable of capturing the complexity in bibliographic control of literatures and the worthiness of citations in scholarly works.

Moving to theoretical and conceptual frameworks of old and new models of bibliometric indicators, part one derives different dimensions of the knowledge spillover, ranging from the citation behaviors, referencing as persuasion, shifting of citation theory to indicator theories,

bibliometrics of cyberspace or webometrics, to article level metrics or altmetrics. This section contains seven enlightening chapters. Chapter titled "The Need for a Theory of Citing", by Blaise Cronin (1981) provides a broad background of effectual citations. The essay begins with telling how citing is very important in scientific discovery (p.33): "Metaphorically speaking, citations are frozen footprints in the landscape of scholarly achievement; footprints which bear witness to the passage of ideas. From footprints it is possible to deduce direction; from the configuration and depth of the imprint it should be possible to construct a picture of those who have passed by, whilst the distribution and variety furnish clues as to whether the advance was orderly and purposive. So it is with citations in respect of the growth of human knowledge; they give substantive expression to the process of innovation, and, if properly marshalled, can provide the researcher a forensic tool of seductive power and versatility." The paper then discusses how citation behavior could lead to new indicators including science and technology indicators.

The scholars interested in knowing good, bad, manipulating and productive faces of citation databases and bibliometric indicators will find the essays in the third part of the book titled "Data Sources" very useful. The introducing chapter for this part titled "The Devil is in the Details", the editors find out that the selection of journals and books for citation databases are skewed as identified by the majority of essayists. In an essay "Lost Science in the Third World", staff writer of Scientific American, W Wayt Gibbs (1995) points out the Mathew Effect, i.e., the practice of biasedness at mainstream scientific journals while selecting papers from the scientists working in developing countries. Gibbs writes (p. 301), "Many Third World researchers – about half those interviewed for this article who were willing to comment on the subject – are convinced that the reviewers and editors of mainstream scientific journals are more likely to reject a paper from an under developed country than an article of equivalent quality from an industrial nation. More important, they say, even when their articles are published in prestigious journals, their Northern colleagues tend to ignore their work or to cite later papers by American or European scientists who have followed their footprints." The matters may not be the same in today's world because the economic prowess of the emerging nations particularly the BRICS nations (consist of Brazil, Russia, India, China and South Africa) is now a fact while the globalization of R&D activities is much happening. The chapters in third part reveal the limitations and biasedness of the publishing

world and citation databases that hindered true assessment of scientific productivity evenly across the world.

The book brings together much-admired pieces of literature to understand the dynamics of scholarly metrics and research evaluation metrics in today's world, situating with the newly adopted 'buzzwords' such as h-index, Eigenfactor score, altmetrics, and webometrics. The open access literature, freely available citation databases (e.g. GoogleScholar), online article-sharing services, and easy-to-derive altmetric score now have the greater impact on scholarship and production of knowledge. The book,

thus, helps in strategizing the public policies for research and development (R&D) activities in an institution, a country, or a funding agency. This book is recommended to scholars and practitioners engage in scientometric and science policy research, or in editorial decision making in the scientific societies.

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