Introduction

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BIBLIOMETRICS IS, simply put, the study and measurement of the publication patterns of all forms of written communication and their authors. Though the word is of recent coinage,[1] the practice goes back at least to the 1920s.[2]

There has been a great increase in the number of publications in bibliometrics over the past two decades. This increase has not been accompanied by critical analyses of the field and of the direction of bibliometrics in general. The purpose of this issue of *Library Trends* is to provide analyses of the major concepts of bibliometrics and to indicate its present and future directions. An effort has been made to make the articles in this issue understandable to persons new to the topic without depriving those readers already initiated into the mysteries of bibliometrics of new insights and a measure of controversy. The authors of these articles are knowledgeable in their topics, but, with a few exceptions, are not usually associated with bibliometrics. These authors were chosen to bring some new names and, it is hoped, new ideas to the literature.

In a general introduction to bibliometrics, Daniel O'Connor and Henry Voos argue that because bibliometrics has largely been used only to describe bibliographic phenomena, and is not yet able to explain or predict these phenomena, it is merely a method, not a theory. They state that if bibliometrics is to attain the status of a theory, to be able to predict and explain, and, thus, to become more useful, researchers must concentrate on the causal factors underlying bibliographic phenomena.

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The next four articles deal with the three major "laws" of bibliometrics—Lotka's law, Bradford's law, and Zipf's law—and with attempts to unify these individual laws under one general distribution. William Potter provides a bibliographic history of Lotka's law and its application. M. Carl Drott examines Bradford's law and concludes that more work is needed in exploring the underlying causes behind Bradford's observations. Ronald E. Wyllys provides a discussion of the origins of Zipf's law, with some interesting observations on the character and context of Zipf himself. John J. Hubert examines efforts to join the laws of Lotka, Bradford and Zipf into one unified, general model. While he finds these attempts statistically sound, Hubert faults them for being too simple, usually with only one dependent variable, and points to research that attempts to account for more variables and which may provide more accurate, predictive and useful models.

Citation analysis is perhaps the most written-about topic in bibliometrics. Linda C. Smith provides an extensive review of the literature and discusses the practical applications of citation analysis.

The rate at which literature becomes obsolete is of interest to both the information scientist studying the evolution of disciplines and to practicing librarians concerned with collection management. D. Kaye Gapen and Sigrid P. Milner have prepared a detailed review of research in obsolescence.

There has been exponential growth in the number of publications and it is widely believed that knowledge is also growing, though not at the same rate as publications. Jean Tague, Jamshid Beheshti and Lorna Rees-Potter discuss the relationship between the growth of literature and the growth of knowledge.

Throughout the articles in this issue, there is a recurring theme which, in essence, says that the traditional bibliometric models and distributions are too simple to reflect reality accurately. To be useful, bibliometrics must be able to explain and predict phenomena, not just to describe them. To do this, more complex models are needed. The problem is that bibliometrics is already thought too difficult and out of the reach of most librarians and information scientists. One possible solution is to incorporate bibliometrics into library and information science curricula. Alvin M. Schrader discusses how a course on bibliometrics might be taught and provides a sample syllabus.

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References

1. Pritchard, Alan. "Statistical Bibliography or Bibliometrics?" *Journal of Documentation* 24 (Dec. 1969):348-49.

2. Hulme, E. Wyndham. *Statistical Bibliography in Relation to the Growth of Modern Civilization*. London: 1923.

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