Journal of Informetrics xxx (2017) xxx–xxx

Contents lists available at ScienceDirect

Journal of Informetrics

journal homepage: www.elsevier.com/locate/joi

Towards a multi-paradigmatic, value free informetrics: A reply to Paul Wouters' book review "The failure of a paradigm"

1. Preamble

In this contribution I present my comments on the most important statements in Paul Wouters' review "The failure of a paradigm" (Wouters, 2018) of my book "Applied Evaluative Informetrics" (Moed, 2017), statements that seem often based on a mismatch between the book's intentions and Wouters' expectations, but, fortunately, some of which properly mark essential differences in view between his and my own thinking. I focus on the three key aspects expressed in the book's title, namely that its subject is informetrics; that it deals with its application in research assessment; and that it gives special attention to its evaluative dimension. This contribution ends with notes on the way forward and concluding remarks. But I start with a few comments about the book's intended audience

2. The book's intended audience

The book is directed towards a broad academic audience, not merely to the research community in the field of bibliometrics, informetrics, quantitative science studies, or social studies of science. I have deliberately chosen to provide broadness and background, and to leave out technical details. This is not so much a matter of taste or style, but the consequence of the notion that it is a matter of social responsibility that specialists in the field seek to explain to the "outside world" in an understandable manner what they are doing and talking about in their professional life. My monograph aims to give such an explanation.

My reference group consists of the users of indicators for which I have conducted bibliometric studies, including policy officials and peer committee members; academic librarians who have to reply to questions about bibliometric methods by their customers and superiors; employees from the information industry, especially from academic publishers (indeed, I worked for four years with the scientific information company Elsevier). Last but not least, I also took into account my experiences in discussions with numerous other persons, academic or otherwise, in universities, but also at parties and on the sports field, about technicalities, pros and cons, potential and limits of informetric indicators as tools in research assessment.

Paul Wouters is disappointed that the book does not present more details on a series of complex issues. Given the composition of my reference group and intended reading audience I have decided to be selective in my overview of the activities and achievements concerning such issues. The book is for the greater part based on about 10 full research articles published by myself and co-authors during 2014–2017, all cited in the book's introduction chapter and in its reference list. There is a huge literature on these issues. More detailed information can be found in the specialist journals in our field, and also in a new Handbook on Science and Technology Indicators (Glanzel et al., 2018) that I am currently co-editing with three distinguished colleagues, in which competent authors give detailed accounts of some 40 topics in the field, and that will be published in the course of 2018.

3. The informetric dimension

The book focuses on the role of informetrics in research assessment. The use of the term informetrics rather than bibliometrics in the book's title marks an important development not only in the field of quantitative science studies, but virtually in all domains of science and scholarship, and in society at large, namely the computerization or digitalization of information and communication. The book aims to adopt a broad perspective on this development as well. It does not only show how new developments in ICT and computational techniques facilitate the creation of new databases, indicators and assessment methodologies. It also aims to show how these developments fit into trends in society as a whole. After all, there is desktop bibliometrics, but, for instance, also desktop medicine, and desktop notary, etc. The broadness and pervasiveness of these developments ask for a more general view on their meaning and potential, a view that reaches far beyond that of quantitative

https://doi.org/10.1016/j.joi.2018.03.003
1751-1577/

research assessment. I believe that a presentation of the main lines of the creative thinking of Michael Nielsen is an excellent way to illustrate what such a view could look like.

The book is based on the firm belief that debates about the pros and cons, potential and consequences of informetric artefacts and methodologies, must be based on a sound knowledge of their informetric 'substance'. As further discussed below, a key objective of the book is to show how technical, informetric indicator concepts are influenced by non-informetric, possibly political, values. This can be properly and convincingly achieved only by technically de-composing an informetric construct into its main components, and pointing towards the 'part' – or 'connection' between parts – in which these values actually assert their influence, so that it becomes clear to an outsider that they really do matter. The chapter comparing five university ranking systems, for example, provides along these lines a clear illustration of how technical indicator normalizations affect the position of universities in a ranking.

4. The book's applied character

The book deals with the *application* of informetric techniques in research assessment. If it deserves the qualification scientific, it is *applied* science, but one that is fully aware of the need of a theoretical foundation of assessment methods and practices. The book does not give a comprehensive research agenda in the field of social studies of science. Nor does it aim to continue the technical debates on informetric issues taking place in the specialist journals in our field.

It aims to create a certain distance from – or reflection upon – current assessment practices, not only by discussing their limitations and pitfalls, but also by showing that assessment methods could be *different* from what they are now. The book's message is: *current* practices are *not* necessarily the most appropriate way to use informetric/bibliometric indicators. Alternative approaches are at least thinkable *and* technically feasible. In this way the book seeks to create openness towards the future, and to make a further step in disclosing the potential of the informetric method.

An author who claims that informetrics itself does not evaluate, and that actual assessments should be guided by an essentially extra-informetric, evaluative framework, should be cautious when expressing his view on what such a framework should look like, because there is a real danger that this would direct the attention too strongly towards his personal views rather than to the claim of the need of such a framework as such. This is why the various proposals that I make in the book are presented as 'possible applications'. I give as it were the desirability or social value of these applications a *hypothetical* status, show how they could be shaped and organized.

5. Facts and values

For many years I have been actively involved in debates about bibliometric indicators, during which I more and more realized that in seemingly technical debates, political or policy considerations influenced the functional form of indicators. I included an entire chapter (Chapter 7) to illustrate this by means of a series of concrete examples, and I want to invite all colleagues in the field – and of course all interested outsiders – to read it. It also shows how indicator concepts mirror the political context in which they are developed. This is an important observation, because it makes us aware and warns us that indicator development is not only influenced by the interests of the information industry – we experience this directly almost on a daily basis –, but also, at a distinct level, by the interests and preferences of the developers themselves: they are not merely producers, but at the same time also potential or actual objects of research assessment based on their indicators.

In the book I do *not* adopt a constructivist viewpoint, and, hence I do *not* argue that my observations prove that indicator concepts and, as a result, numerous assessment processes all over the world, are being *determined* by the personal experiences, and political and business strategies of a group of indicator developers in informetric academic institutes or companies. Yet, I believe my observations bear relevance not only to the wider research community, but also to practitioners in our field, as they represent an incentive to *reflect* upon our informetric activities. And this is precisely what I aim to do in my book.

My position is that evaluative informetrics, i.e., the use of informetric techniques in the assessment of research, does itself not evaluate, and I defend the notion of a value free informetrics – but also a value free social studies of science – in the following sense. First I state what it does *not* mean. Value free science does *not* mean that it cannot study values as object of research; Robert Merton's studies of the norms of science are a point in case. It does *not* mean that there are no values underlying theoretical concepts; social science using concepts the formation of which is fully independent of societal or cultural values is hardly thinkable; for instance, there would be no economical science. It does *not* mean that the application of research findings in technology and in society at large is value free; on the contrary, bibliometric indicators are used to achieve political or managerial goals. Value free does certainly *not* mean that the scientific practice is not guided by a series of methodological values or rules. It does *not* mean that investigators are as it were robots who can completely switch off their value perceptions and historicity. It acknowledges that in social sciences investigators are not the type of external observers they are in the natural sciences.

What then *do* I mean with a value free informetrics? The book states: "Evaluation criteria and policy objectives are not informetrically demonstrable values. Informetric research may study such values empirically, but cannot provide a theoretical foundation of the validity of the quality criteria or the appropriateness of policy objectives. Informetricians should in their informetric work maintain a neutral position towards these values (p. 20)". "The methodological requirement of a value free informetrics does not mean that informetricians are not 'allowed' to have these views, nor that they are not

Please cite this article in press as: Moed, H.F. Towards a multi-paradigmatic, value free informetrics: A reply to Paul Wouters' book review "The failure of a paradigm". *Journal of Informetrics* (2017), https://doi.org/10.1016/j.joi.2018.03.003