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VOLUME 4 (2000): ISSUE 1. CORRESPONDENCE

Rejoinder

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We welcome the thoughtful comments of Mark Newman and Eric Archambault providing alternative approaches to the difficult problem a fitting a power law. They, moreover, offer interesting suggestions for further research.

We would like to make one comment on Archambault's correspondence. It has been shown (e.g. by Bookstein (1990), Egghe (1990) and R. Rousseau (1988,1990)) that the so-called bibliometric or informetric laws are equivalent, under some reasonable mathematical conditions. These imply that, usually, Lotka's law is not (strictly) equivalent to Zipf's, but to the Mandelbrot version of the rank-frequency form. This comes down to shifting ranks by one unit. Yet, in the economical as well as the physical literature, Zipf's law and Zipf plots are often used in a 'power law' context (Redner, 1998; Urzúa, 2000). So, we wonder why bibliometricians should be stricter than others. Anyway, the bibliometric community seems to be split up in 'believers' (in these equivalences) and 'non-believers'. According to his correspondence Archambault is an extreme non-believer, as he even claims that Lotka's law only fits Lotka's data. We leave this statement to him and just say that we do not agree at all.

This brings us to Sylvan Katz' comment and the clear conflict between his expectations and these of the authors, the reviewers and the editor. Katz requires that software documentation includes all information concerning theory, methods, limitations and user interface. In particular, his interpretation of 'including' means 'to be immediately at hand when using the program'. We are sure that he knows software where this is the case, but we are equally convinced that this is not the case for most software. We would just like to point that our Cybermetrics publication contains all the information Katz would like to see: an explanation of how to use the program, with a worked-out example and references to the (mainstream!) literature where the mathematics can be checked. The fact that it is a maximum likelihood approach and the main references are repeated under the info button (for those who did not take the time to carefully read the article).

Thanks to the work of Pao (1985), Nicholls (1987) and Rousseau (1993), finding maximum likelihood estimators for Lotka's law has been reduced to a simple table look-up. Our program is just meant as a service to the informetric community so that even this simple step is not necessary anymore.

Finally, we are at a loss why Katz acts as if he does not know the meaning of the word 'distribution' (in a statistical context). A discrete statistical distribution is characterized by the fact that all probabilities add to one. For Lotka's law (defined on an infinite interval, hence without specified maximum

production) this implies that it contains only one free parameter.

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