

## Discussion

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### Lack of standardization in informetric research: Reply

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*Rousseau's* (2002) comment on our contribution on power laws of research output in economics in this journal (*Sutter and Kocher, 2001*) is intended to promote a standardized way to handle data in scientometric and bibliometric research. He provides some interesting additional evidence for Lotka's law and Zipf's law for our data and some new facets like fitting a Mandelbrot curve. As a bottom line, however, *Rousseau* himself concedes that the basic conclusions of our paper would have been similar. One might also say that the basic conclusions remain the same. So what should we learn from *Rousseau's* comment?

It is correct that some details look different when seen from the perspective of *Rousseau's* comment. The most notable case is due to his correction of a mistake in our original paper. In the chapter on Zipf's law we erroneously claimed to present data on scores based on current affiliation entries. Actually, the according results and figure relied on PhD-entries (papers of authors educated at a given institution). We apologize for the possible confusion we created by this mistake. Note however that both scores are highly correlated and the resulting distributions look very much alike. The results that *Rousseau* provides in his comment on those data, which we actually intended to present, confirms that the difference between the two scores is rather small and conclusions remain unchanged.

However, *Rousseau* argues forcefully that we might have found a better fit to our data, even though we never claimed that our fitting exercise yields the best results and that no other, better-fitting distributions exist. Note that our data stem from a research project on the development of the institutional concentration of authors in eminent economic journals (*Kocher and Sutter, 2001; Sutter et al., 2002*), and we simply considered it to be of interest to test the fit for two well-known distributions in

bibliometrics. To the best of our knowledge, similar results as ours have not been provided for economics before, and, thus, our results might be of interest also for researchers in bibliometrics.

We would also like to add that contributions on Lotka's law and Zipf's law might not only be interesting from a scientometric or bibliometric perspective, but also from a field perspective, in our case from the viewpoint of economics and/or economists.\* *Rousseau* probably agrees that different fields build different traditions or different ways of presentation,\*\* which may make interdisciplinary research interesting and fruitful.

Besides these details on distributions and fits, *Rousseau* wants to promote, in general, more standardization in informetric research. Of course, this seems to be a good idea, but we only partially subscribe to the point of view exposed by *Rousseau*. His argument that the lack of standardized procedures in scientometrics and bibliometrics is a hindrance for scientific progress may easily be reversed. A standardized way of approaching some questions might also rule out the possibility of innovative new findings by applying non-standardized methods to a given set of data or might not be conducive to scientific variety in general. To refer to a paper from the field of bibliometrics, *Pao's* (1986) contribution has proven that it is interesting to compare different approaches and/or different data bases and try to find regularities and explanations for deviations.

Referring to the field of economics, *Hodgson and Rothman* (1999), have argued that publication patterns in leading economics journals might reflect a counterproductive (from the point of view of scientific progress) 'institutional oligopoly', meaning that a few leading institutions determine the main methods for conducting research and publishing it in leading journals. Standardization might well lead to a 'methodological oligopoly'.

Of course, in an ideal world proposals concerning the procedure of estimating different distributional laws might be very helpful. The world is however not ideal, and many sources of biases exist. One may think of such important questions like journal selection, or equivalently of adequate proxies of research output, years covered or

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\* Power laws have recently attracted quite some attention even in core economics journals. *Uruza* (2000) proposes a simple and efficient test for Zipf's law. The idea of a general Brownian motion as an explanation for the observation of power laws is put forward in *Reed* (2001). *Gabaix* (1999) has explained Zipf's law for cities by using a procedure based on Gibrat's law. Interestingly, *Rousseau* does not cite *Gabaix* (1999), but a working paper from 2000 for the same idea.

\*\* We do not understand the criticism concerning our way of presenting the figure for Zipf's law with the independent variable on the vertical axis. This is the usual way it is done in economics. See, for instance, also *Gabaix* (1999), who displays Zipf's law ranks on the ordinate.

truncations in the data. Why not accepting different approaches, as long as they are methodologically sound and well documented in the according article? However, we fully agree with *Rousseau* that non-parametric estimations might be a possible and promising avenue for progress within scientometrics or bibliometrics.

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