[Letter to the Editor]

by Michael Schreiber* - Institute of Physics, Technische Universität Chemnitz, D-09107 Chemnitz, Germany
email: schreiber@physik.tu-chemnitz.de - DOI: 10.1051/epn/2013503

Can comments cause citations?

Yes, they can!

Commented EPL papers attract more citations than the average number of citations to EPL publications.

Should an author of a publication be worried or thankful, when the Editorial Office sends him a Comment for consideration? [1] The usual initial reaction is probably concern, because such a Comment normally contains criticism of the original paper. On the other hand it means that the author of the Comment has seriously examined the paper and found it worth the effort to prepare a Comment. Moreover, a published Comment increases the visibility of the original publication and draws the attention of other colleagues to the paper. This means that Comments can be expected to enhance the impact of a publication and result in additional citations. Moreover, a Comment and the subsequent Reply by the author of the commented paper are likely to provoke a scientific dispute which would further enhance the citation count. Nowadays citation counts are often taken as a measure of scientific achievements and considered for allocating research resources and in academic appointment processes. Although these practices are questionable, it is a matter of fact that they are widespread in use. Thus it is interesting to investigate, whether Comments indeed lead to higher citation counts.

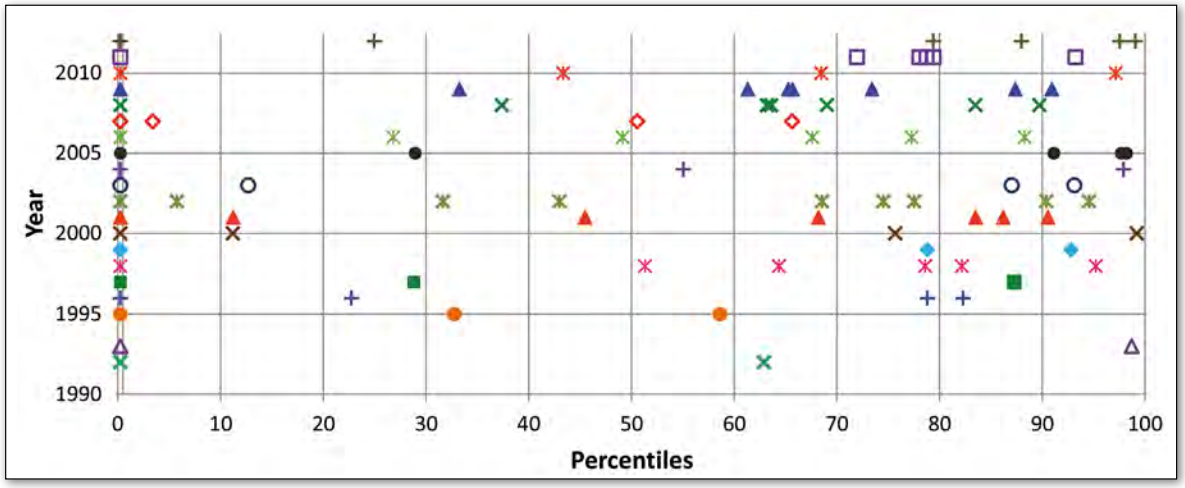
Recently Radicchi [1] has analyzed the citation statistics of commented papers in 13 journals published by the American Physical Society. He found that commented papers have high scientific impact in terms of citation frequencies. I have done a similar analysis for the flagship journal of the European Physical Society, *i.e. EPL* (formerly *Europhysics Letters*). The results are unequivocal: Most commented papers are highly cited. This is visualized in Figure 1 where the symbols appear dominantly on the right hand side.

In scientometrics or bibliometrics it has become a standard procedure to compare the citation count of a paper with the citation frequencies of an appropriate reference set. For the present purpose I have therefore downloaded the citation report comprising all *Europhysics Letters/EPL* papers from the ISI Web of Knowledge on 4 June 2013. This constitutes the references set. The data are analyzed separately for each year, because obviously older papers have had more time to receive citations and it is therefore dangerous to compare large publication windows. The papers in each year are sorted by (increasing) number of citations. The thus obtained rank is used to determine a percentage and thus to define a percentile that reflects the number of papers which have obtained less or equally many citations. In recent years there has been a controversy in bibliometrics how to treat tied papers, *i.e.* papers with the same number of citations in the dataset [2]. For the present purpose it is sufficient to average the ranks of the tied papers and utilize the corresponding percentile [3].

The citation frequency of the investigated commented paper is now compared with the reference dataset and ▸

* Former Editor in Chief of EPL

[Letter to the Editor]



▲ **FIG.1:** Position of commented papers according to the number of received citations in comparison with all papers published in Europhysics Letters/EPL in the respective year. (Early years are not plotted, because I found only one commented paper that was published before 1992. It was the most cited one in 1986.) Percentiles reflect the percentage of papers which have received less or equal numbers of citations than the paper in question. The left-most symbols do not represent papers, but are plotted to make it easy to attribute symbols and years.

thus attributed a percentile value which is presented in figure 1. It is obvious that most commented papers are found in the range of rather high percentiles, *i.e.* they are highly cited. To be precise, there are 2, 3, 5, 4, 4, and 4 papers in the first 6 deciles, respectively, and 13, 13, 11, 18 papers in the top 4 deciles. Altogether there are 77 Comments, so that one would expect 7.7 commented papers in each decile if their citation frequencies were evenly distributed. But this is clearly not the case in Figure 1. Radicchi [1] made a similar observation, namely that with nearly 10% the commented papers are overrepresented among the top-5% highly cited papers in most of the 13 investigated journals. In figure 1 one can find even more than 10%, namely 13% (10 out of 77) in the top-5% region. It may be worthwhile to note that I have excluded the references from the Comment and Reply to the commented paper from its citation count in order to avoid a possible bias. Thus a zero citation count is possible but occurs only once in 2007, although the symbol in Figure 1 is not found at the zero percentile, but rather at 3%, because this is the average rank of all uncited papers in that year.

One could also compare the average citation frequency of the commented papers with that of all papers in each year. However, due to the strongly skewed citation distribution (many uncited or lowly cited papers versus a long tail of few highly cited papers) it is dangerous to utilize averages and therefore the above employed procedure of comparing percentiles is much more justified.

In contrast to the observation by Radicchi [1], namely that the proportion of commented papers has drastically decreased in recent years for all 13 investigated APS journals, this is not the case for Europhysics Letters/EPL. Since 1998 there have been on average 4.5 commented papers per year with minima of 2 in 1999 and 2004 and maxima with 8 in 2002 and 7 in 2009. Due to the somewhat increasing number of papers per year the proportion of commented papers has somewhat decreased, but the effect is certainly not as drastic as observed in the APS journals.

In conclusion, as an author you should be grateful if you receive a Comment, because this means that your paper is rather likely a candidate to become highly cited. This is the reason why I answered the title question whether Comments can cause citations with a clear "Yes". But in fact it is not so obvious. As already mentioned, the Comment already means a distinction, because who would comment on an uninteresting or mediocre paper? But of course Europhysics Letters/EPL does not publish uninteresting or mediocre manuscripts anyhow. ■

References

[1] F. Radicchi, *Scientific Reports* **2**, 815 (2012).

[2] L. Bornmann, L. Leydesdorff, and R. Mutz, *J. Inform.* **7**, 158 (2013).

[3] M. Schreiber, *J. Am. Soc. Inf. Sci. Techn.* **63**, 2062 (2012).