

Don't be misled by citation figures! (16)

Self-Citations Stink ... but Rarely

This time we're not going to fob you off with a fictional story about the many particularly "elegant" ways in which Professor Windigmann or Postdoc Slime were able to collect as many citations as possible. No, today we are going to highlight a popular prejudice, which claims that many researchers artificially refurbish their citation accounts by excessively quoting their own preceding papers.

The assumption that such behaviour might be rather widespread was apparently confirmed by a Norwegian study which appeared in February 2003 in *Scientometrics*. In an extremely meticulous manner, Dag Aksnes, the sole author, had sifted through the reference lists of 47,000 scientific papers written by his fellow countrymen between 1981 and 1996. At first glance, his results were alarming: one-fifth of all citations were self-references. Leaders were chemistry and astrophysics with 31% self-citations, followed by molecular biology (26%), the geosciences (21%), the neurosciences (18%) and clinical medicine (17%). Even worse, however, when Aksnes restricted his analysis to those cited papers only to those that had appeared during the three years prior to the citing publication, he found an astonishing overall self-citation rate of 36%.

So why "prejudice"? First of all, Aksnes' study simultaneously implies that self-citations don't really make much of a difference. For all disciplines, he found that, in particular, articles appearing only sparsely in the reference lists of subsequent papers owe their few citations almost exclusively to the authors themselves.

But what does that mean? Papers attracting only a few quotations aren't necessarily bad. In fact, a small number of citations may rather indicate that only very few researchers work on the respective issue, at all. And this, in turn, might even increase the need to quote your own preceding preparatory work.

Furthermore – and this is already becoming transparent – Aksnes' study reveals nothing about how many of one's own publications are cited in subsequent articles for absolutely meaningful and justified reasons. He simply implies that self-citing as such is "sinful".

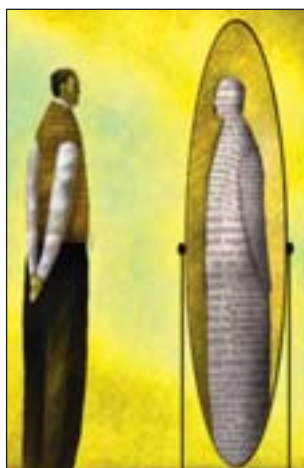
Very often, however, the opposite is true. It's simply in the nature of things that one's own preparatory work and results almost dictate subsequent experiments and projects. A fruitful project provides the group with a logical flow of consecutive results – often regardless of the work in other laboratories. Therefore, it's absolutely meaningful and justified that this group repeatedly cites its own published preparatory work. You can, of course, exaggerate this. However, a downright "contortion of citations" seems very unlikely.

Imagine, for example, Postdoc Paul purifies a protein and publishes it. After that, he isolates the corresponding gene using a probe derived from the amino acid sequence of the protein. Who is Paul to quote in this study? Nobody else but him has purified the protein. He *can only* cite his own paper. And he even *must* cite his own paper, since it is one of an author's obligations to indicate to the reader where more can be learned about the protein.

After that, Paul built an expression vector for the protein and performed some great analyses. Again, he quotes his purification paper – and rightly so! He also produced antibodies against the protein along the way, which he now uses to reveal where and when the protein occurs in the organism. In this study, Paul will certainly include the "old" purification paper in the reference list again. And there'll be nothing bad about it.

Aksnes, however, would probably condemn Paul as the epitome of "self-quoting sinners".

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