

VASILIJ VASILEVICH NALIMOV AND HENRY SMALL WIN THE
1987 DEREK JOHN DE SOLLA PRICE AWARD

The Editorial and Advisory Board and The Publishers of *Scientometrics* have awarded Professor Vasilij Vasilevich *Nalimov* (Moscow State University, USSR) and Dr. Henry *Small* (Institute for Scientific Information, Philadelphia, USA) the 1987 Derek John de Solla Price Award for their distinguished contributions to the field of scientometrics.



Dr. Loet *Leydesdorff* (left) presents the Price Award to Dr. Henry *Small* at the awarding ceremony held at the EASST-workshop on "The Relations between Qualitative Theory and Scientometric Methods in S&T-studies", Amsterdam, December 10-11, 1987.

The photo on the awarding of Professor *Nalimov* and a citation on his scientific achievements will be published in the next issue of our journal.

COMMENTS ON HENRY SMALL, RECIPIENT OF THE 1987 DEREK DE SOLLA PRICE AWARD

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In the early seventies, Henry *Small* introduced co-citation analysis as an instrument for science studies, in particular for studying the structure, and, as a function of time, the 'dynamics' of science. It was, around 1973 and 1974, the birth of what we call 'bibliometric modeling', defined as a detailed representation of the structure of international science at the research front, based on the number of times two documents have been cited together in the same referencing publications.

The phenomenon of co-citation yields a degree of partnership between two cited papers. Different paper-partners can be associated with further paper-partners, clusters arise, and, on their turn, clusters eventually link together into superclusters.

The pioneering element of *Small's* work therefore lies in the possibility to determine the structure of science, year-by-year, independent of old or previously constructed disciplinary categories. In fact, the scientists themselves generate the structure as a direct derivate of one of their major activities: writing publications.

For Henry *Small* the main interest was to picture or to 'map' the development of scientific fields, and, eventually, of science as a whole. But *Small's* colleague and co-pioneer, who should be mentioned without any doubt when speaking about co-citation analysis, Belver *Griffith*, predicted already at the very beginning that science policy would have great interest in these maps.

It took, however, about a decade before the first science policy-related organization commissioned a co-citation analysis. And although many foreigners in early times (e.g., Heinrich *Heine*) observed that in the Netherlands everything happens always fifty years later on, this is certainly not true for science studies and related work, because it was the Netherlands Advisory Council for Science Policy asking for this first policy-oriented co-citation analysis.

Since then, it is quite clear that Henry *Small* did not only produce a research tool for science studies, but also, let us be frank, a commercial tool for science policy.

This is not the place to discuss the methodological and technical advantages and/or shortcomings of co-citation analysis. And also not the place to discuss the, in my opinion, serious problems arising by the fact that the technique has become commercial. It is clear that Henry *Small's* child of brain survived its childhood diseases

and, if you like it or not, . . . became a *yuppie*. Schoolmaster of Science Studies David *Edge* warned us, already many years ago, when he told us 'why he is not a co-citationist'. But now his warning has got an extra weight, since attempts are made to base science policy decisions on co-citation analysis.

But I promised not to discuss these problems here. Very recently, several nice publications on the use of co-citation analysis appeared and important work on that subject is currently going on. So, the problem is now brought under the flood-light, and that is precisely what should be done. In the meantime, Henry *Small* is continuing basic research on co-citation analysis. I know Henry as a quiet man, who doesn't like to make much fuss. I think he would agree with a typical Dutch saying: "please don't get excited, you are already crazy enough". I am sure that he has his own thoughts about commercializing co-citation techniques and the limits of such an enterprise.

Therefore, I think, Henry *Small* still is primarily what he always has been: an information scientist. In one of his more recent articles, about the synthesis of specialty narratives from co-citation clusters, this attitude is clearly visible. Here in fact the idea of a 'mini-review' of scientific specialties is discussed. Or, to put it in another way, is it possible to use sets of citing and cited documents in order to construct an artificial state-of-the-art or review of the subfield under study. This would mean, that thought-processes involved in reviewing a field can be modeled by a guided-tour through a co-citation network. I think this idea to construct a synthetic review, possibly of science as a whole, is a major cognitive endeavour, or must I say, adventure.

So Henry *Small* is an information scientist. But, is he a scientometrician too? Of course, but you have to be very careful with the title scientometrician. There is a number of people who think that scientometricians are a quasi-religious group of maniacs, and even within the science studies community many people has their own feelings about 'number crunchers'. You have to be careful these days with labels, therefore, quantitative studies of science sounds better.

I must admit, however, that I like data too, and that I performed some countings. Henry's complete oeuvre is cited several hundred times in journals covered by the *Science Citation Index* and the *Social Science Citation Index* in the period 1973–1987. His work can be found as a reference in published work in a variety of scientific journals. Among others we find, of course, *Social Studies of Science*, *Research Policy*, *Library & Information Science*, *Scientometrics*, *Journal of Documentation*, *Journal of the American Society for Information Science*, *Current Contents*, but also the *American Sociological Review*, *Annals of the Association of American Geographers*, *Environment & Planning*, *Philosophy of the Social Sciences*, *Psychological*

Reports, Multivariate Behavioral Research, Physics Today, Annals of Internal Medicine, and Geoscience Canada.

Thus, the referencing packet of journals is much wider than the packet of journals in which Henry *Small's* publications appear and, at least in my opinion, this is a nice indicator of the wide-spread influence of *Small's* scientific oeuvre.

Five years ago, Howard *White* and Belver *Griffith* performed an author co-citation analysis in the field of science, technology and society. Henry *Small* was, of course, included as an author in the study. Author co-citation analysis means the counting of the times any two authors are cited together, irrespective of the particular documents they have been published. It is, in fact, the process of *oeuvre* co-citation, rather than pairs of individual documents. In that study, we find Henry *Small* 'clustered' with, among others, Daryl *Chubin*, Jonathan and Stephan *Cole*, Belver *Griffith*, Daniel *Sullivan*, Mike *Moravcsik* and Nick *Mullins*. Today, we find strong author co-citation relations of Henry *Small*, with, in proper ranking, Eugene *Garfield*, Derek de Solla *Price*, Belver *Griffith*, Jonathan *Cole*, Mike *Moravcsik*, Daryl *Chubin*, Francis *Narin*, Stephen *Cole*, Nick *Mullins*, Daniel *Sullivan*, Leo *Hargens*, Susan *Cozzens*.

Without any doubt, Henry *Small* had and has a very important impact on the quantitative studies of science. His scientific interest and scholarship are characterized precisely by the title of this EASST-Workshop: 'The Relations between Qualitative Theory and Scientometric Methods in Science and Technology Studies'. In this field Henry *Small* still remains one of the pioneers. Therefore, Henry *Small's* receipt of the 1987 Derek de Solla Price Award is well-deserved.