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EDITORIAL

■ Latest Board Member Elections – A Report

In order to ensure continuous renewal of ISSI's governing body, a partial board member election is launched in every second year. In accordance with this principle, in November 2008 the ISSI board initiated to vote about 3 board member positions fallen vacant as a consequence of voluntary resignation. All ISSI members in good standing were entitled to take part in the nominating and voting procedures and were informed about the details accordingly. Both the nomination and the voting took place online, directly on the ISSI website. After logging in to the "members only" area of the ISSI website voters could submit their nominations (and later, in the second and third round, their votes) anonimously.

In the first turn each ISSI member had the opportunity to nominate 3 potential board members. The first (nominating) turn ended up with 38 candidates, of which 30 accepted the nomination. (1 nominee refused it, 6 nominees did not reply at all and 1 nominee replied after the deadline of declaration of intent.)

The call for the actual voting was announced in mid-December 2008. Once again, ISSI members were offered to vote for three nominees out of those 30 candidates who had accepted their nominations after the first round. After counting the votes it turned out that while the first two positions could unambiguously be determined on the basis of the votes (Peter Ingwersen: 8,08% and Aparna Basu: 7,07% of all votes), a very tight outcome caused a tie in case of the third board member position: Sujit Bhattacharya, Grant Lewison and Henk Moed received 6.06% of all the votes, each.

This unforeseen situation forced the ISSI board to call on all the ISSI members to cast a vote for the third time in January. Members were asked to select only one of the 3 nominees in question. In the end Sujit Bhattacharya received 21.1%, Grant Lewison received 42,1% and Henk Moed received 36,8% of all the votes of the third round.

That is, on 01 February 2009 the latest partial board member election was closed with the following end-result: the Society's renewed board consists of Judit Bar-Ilan, Aparna Basu, Wolfgang Glänzel, Peter Ingwersen, Grant Lewison, Martin Meyer, Olle Persson and Ronald Rousseau.

Balázs Schlemmer *election assistant*

CONTENTS

EDITORIAL BOARD

CONFERENCE CALLS

The Swedish Research Council announces the 14th Nordic Workshop on Bibliometrics and Research Policy

29-30 September 2009,
Swedish Research Council, Stockholm, Sweden

Bibliometric researchers in the Nordic countries have arranged annual Nordic workshops on bibliometrics since 1996. The general idea of the workshop is to present recent bibliometric research in the Nordic countries and to create better linkages between bibliometric research groups and their PhD students. The workshop language is English and the workshop is open to participants from any nation. Starting from year 2007, the workshop is also open to participants who wish to take part without presenting.

Please update your calendars now and visit the workshop web site at http://vr.se/nwb2009/ for registration and submission of suggested presentations.

Further questions can be addressed to the workshop coordinators:

- Ulf Kronman, ulf.kronman@vr.se
- Sara Billfalk, sara.billfalk@vr.se

More information is available at the workshop website: http://vr.se/nwb2009/

Very welcome to the workshop!

Ulf Kronman

ASIST & ISSI Pre-Conference Symposium on Informetrics and Scientometrics

07 November 2009,
Hyatt Regency, Vancouver, BC, Canada

This ASIST Annual Meeting pre-conference, co-sponsored with the International Society for Scientometrics and Informetrics (ISSI), will provide a focused day for metrics researchers to present their recent projects and to discuss issues of interest in the field.

■ Scope

Proposals addressing any topic of relevance to bibliometrics, scientometrics, webometrics, cybermetrics and allied areas are encouraged. Examples of topics include, but are not limited to: informetric laws, aspects of inequality or concentration and diffusion, growth and obsolescence, citation theory, linking theory, indicators, open access and electronic publishing, evaluation techniques for scientific output, visualization and mapping of science, and applications for information system content, use and management (e.g., information retrieval, libraries).

■ Submission Process

Full papers of up to 12 single-spaced pages are sought and are to include a title, name(s) of the author(s), and an informative abstract of up to 300 words. Papers are to be submitted electronically to the symposium submission system at:
http://www.softconf.com/asis/MetricsPreCon/
and should follow the formatting guidelines used for ASIST Annual Meeting submissions (www.asis.org/Conferences/editorial_guidelines.html). Submissions will be double blind-refereed. Priority

will be given to papers that represent completed or ongoing research. Submissions by students are encouraged. Proposals will be evaluated based on relevance to the field, originality, significance, organization, and clarity.

Accepted papers will be made electronically available to attendees of the symposium. Authors of accepted papers are expected to be in attendance to present their work during the symposium. High ranking papers will be invited for submission to a special issue of the Journal of Informetrics.

■ Important Dates

Deadline for paper submissions - April 15, 2009
Acceptance decisions - May 29, 2009
Final papers due - August 15, 2009

■ Note

ASIST member registration rates for the ASIST Annual Meeting will also apply to ISSI members.

■ For further details, please contact:

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For more information about the ASIST Annual Meeting, see
http://www.asis.org/Conferences/AM09/am09cfp.html

Additional information about the symposium is available at: http://www.sois.uwm.edu/MetricsPreCon

THE WEB OF KNOWLEDGE VERSUS GOOGLE SCHOLAR: PRESENCE OF NON-WESTERN COUNTRIES

THE STIMULATE 8 GROUP
VRIJE UNIVERSITEIT BRUSSEL (VUB)
BRUSSELS, BELGIUM

The STIMULATE 8 Group consists of: Anne Sylvia ACHOM (Uganda), Helen Hagos BERHE (Ethiopia), Sangeeta Namdev DHAMDHERE (India), Alicia ESGUERRA (The Philippines), Nguyen Thi Ngoc HOAN (Vietnam), John KIYAGA (Uganda), Sheldon Miti MAPONGA (Zimbabwe), Yohannis MARTÍ-LAHERA (Cuba), Kelefa Tende MWANTIMWA (Tanzania), Marlon G. OMPOC (The Philippines), A.I.M. Jakaria RAHMAN (Bangladesh), Ronald ROUSSEAU (Belgium), Bahiru Shifaw YIMER (Ethiopia).

■ Abstract

This investigation illustrates differences between data available in professional databases such as the Web of Knowledge and data that are freely available on the Internet via Google Scholar. Our findings seem to indicate that, in general, non-Western countries are better represented in the Web of Science than in Google Scholar. Results moreover illustrate one aspect of the digital divide between Western countries and other ones, in particular developing countries.

Keywords: digital divide; Web of Knowledge; Google Scholar; ideal world of science; topic searches

1. Introduction

STIMULATE stands for *Scientific and Technological Information Management in Universities and Libraries: an Active Training Environment*. It is an international training programme in information management, supported by the Flemish Interuniversity Council (VLIR), aiming at young scientists and professionals from developing countries. The programme has a dual purpose: it intends to develop the personal professional skills of the participants, and the participants are actively encouraged to transfer their newly acquired knowledge and skills to their colleagues and other stakeholders in their home country (Nieuwenhuysen & Vanouplines, 1997; Nieuwenhuysen, 2003; Stimulate 6 Group, 2007).

One of the higher level STIMULATE courses introduces students to the use of the World Wide Web and to bibliographic databases such as Thomson/Reuters's Web of Knowledge as tools for library management and research evaluation (Stimulate 6 Group, 2007). This article is the result of the 'active training part' of this particular course. It illustrates differences between data available in professional databases such as the Web of Science and data that are freely available on the Internet via Google Scholar. In general non-Western countries are better represented in the Web of Science than in Google Scholar.

2. An ideal world of science

In an ideal world scientists publish their results in peer reviewed journals or conference proceedings and put a preprint version in a local, e.g. university, repository. The whole world of science is interconnected via the Internet.

An ideal publication-citation database covers all peer-reviewed journals and conference proceedings in the world.

An ideal search engine covers the whole Internet and clusters results such that each cluster refers to one item. More precisely: a cluster brings duplicate items in mirror sites together; preprint versions in an institutional repository and the published version on a publisher's website; etc..

In this ideal world the number of existing scientific publications, e.g. per country, as found in the ideal database is equal to the number of publications, e.g. per country, as found by the ideal search engine.

3. Aim

It would be a fine research project to study all differences between reality and the ideal world of science, and how this difference has changed over the years. Our investigation does not go that far, but has two rather modest aims: first, to draw attention to the existing gap between reality and the ideal (although some aspects, such as the underrepresentation of Third World countries, are well known), and second to investigate one aspect of this gap. Practically, for some topics, we compare the ranking of the top-10 countries in the Web of Science (in short: WoS) with the ranking of these same ten countries based on the number of retrieved items (on this same topic) in Google Scholar. It is clear that in an ideal world these rankings must be the same. This study must be considered a pilot study for a larger and more thorough investigation.

4. Method

Each member of the STIMULATE 8 team chose a topic, preferably related to the country or the region he or she originated from. This topic was then represented by a word or phrase and with this word or phrase a topic search was performed in the Web of Science (December 2008). The five available databases were used: Science Citation Index Expanded (data available from 1955 on), Social Science Citation Index (data since 1956), Arts & Humanities Citation Index (data since 1975), Conference Proceedings Citation Index – Science (data since 1990) and Conference Proceedings Citation Index – Social Science & Humanities (data since 1990).

The essential part of our investigation consisted of using the "Analyze" option in order to obtain a ranking of countries that published (read: whose addresses occurred in the address line) about this topic. The ranked list was saved, and after some cleaning the top-10 countries (or more in case of ties) were kept. Cleaning means that we added the results for Germany, Federal Republic of Germany and the Democrat Republic of Germany, leading to a result for the two German countries together; and we obtained a representative number for the United Kingdom, based on the results for England, Scotland, Wales and North Ireland. Note that by performing searches on topics related to developing countries we tried (and also succeeded) to have a reasonable group of developing countries among the top-10 most active countries.

Next a search in Google Scholar aiming at retrieving the same topic (using the same query, or a slightly adapted one) was performed for each of the ten countries. For example: the query Kiliman* in WoS became

(Kilimanjaro OR Kilimandjaro) AND site:tz

when we wanted scientific articles available on a Tanzanian website dealing with the topic Kilimanjaro. This search was repeated a total of ten times, once for each top-10 country (according to the WoS ranking). Results and details are shown in the next section and in the full article (Stimulate 8 Group, 2009). No cleaning for duplicates was performed.

5. Data and some results

The following queries were performed in the WoS (Table 1). In case of differences the Google Scholar query is shown between square brackets. The total number of retrieved documents (in the WoS) are also shown.

Table 1

Query	# docs retrieved
(Rwanda* OR Ruanda*) AND genocide [(Rwanda OR Rwandan OR Ruanda OR Ruandan) AND genocide]	333
Pollution AND India	1,448
Zambezi	411
(Vietnam OR "viet nam") AND bay* [(Vietnam OR "viet nam") AND (bay OR bays)]	104
Kiliman* [Kilimanjaro OR Kilimandjaro]	365
Pinatubo	1,359
Policosanol	213
Coffee AND arabica	1,257
Diarrhoeal	1,468
Ebola	1,340
Malaria	38,824
Elephant* [elephant OR elephants]	8,133
Stevia OR steviol	535
(endod AND (pestic* OR mollusc*)) OR ("phytolacca dodecandra") [(endod AND (pesticide OR molluscicidal)) OR (phytolacca dodecandra)]	111

Some comments: although the AND-operator is unnecessary in Google and Google Scholar we used it anyway, as it made queries logically clear. The terms (pesticide OR molluscicidal) were added to the query 'endod' as it turned out that Endod is also proper name. The term elephant* retrieved besides articles related to the well-known large herbivorous animal with a long trunk, also quite some articles dealing with the elephant seal. However, we saw no reason to eliminate them. We kept the British term "diarrhoeal" as in this way a country such as Bangladesh entered the top 10. Results for the query on the Rwandan genocide and on endod are not used for further analysis as the first one included only two non-Western countries (so-called region B countries, see Section 6) and the second one did not retrieve enough results in Google Scholar.

The complete results for each query, including details for each top-10 country, are given in the full paper, available on the E-LIS e-print server (Stimulate 8 Group, 2009).

6. Findings

For simplicity we divided the world into two regions. Part A includes the Western industrialized countries, namely the USA, Canada, Australia, New Zealand and all European Countries (except Russia). All other countries are grouped together in region B.

Our main finding is that in the majority of cases (9 out of 12; two queries are not considered by lack of relevant data) B countries occupy a position which is farther away from the top position in Google Scholar than in the Web of Science. If Japan and South Africa had been placed in group A then the difference would have been even larger.

We note that our findings are based on a small sample and cannot be considered to give statistical evidence. Yet, based on this case study, there is no reason to think that the Internet offers a fairer representation of non-Western countries' science than the Web of Science.

We are fully aware of the fact that 'site'-searches in Google Scholar are not the same as searches for address fields in a bibliographic database. Yet, by concentrating on country sites we eliminate websites from publishers (all .com sites) and large international organizations (.org or .net sites). In this way, a country's scientific output, as it is made public by the country itself, is compared to another country's scientific output. In theory, and probably also in practice, it is possible that some Western countries, e.g. the former colonial powers, specialize in databases on topics related to their former colonies. In this way articles written by scientists working in developing countries may end up in Western databases (available, e.g. on a *.fr* or *.uk* site). Clearly, investigating this might be a worthwhile project: are such databases a service to developing countries (giving them visibility) or do they prevent developing countries from designing their own databases and repositories?

7. Conclusion

It is sometimes thought that the Web of Science offers a Western view on science (Gibbs, 1995; Garfield, 1997; Kieling & Gonçalves, 2007), while the Internet is considered to be an equal playground, or at least a huge opportunity for equal treatment (Chan & Kirsop, 2001). Certainly, the Web of Science is largely based

on Western journals and conference proceedings, yet a moment's reflection reveals that, for reasons of technological infrastructure the Internet is certainly not an equal playground (Oyelaran-Oyeyinka & Lal, 2005) and search engines show large biases against languages other than English (Aguillo et al., 2006). Note, however, that language bias does not play a role in our investigation as all queries are performed in English and target scientific articles included in the WoS.

Web presence inequality is confirmed by our investigation: with few exceptions (South Africa and Japan) the Web of Science as reflected by addresses, favours B countries' science more than the Internet, as covered by Google Scholar and measured using country codes (this is a huge caveat!). As such our article studies one aspect of the digital divide (Yu, 2006).

Leaving aside possible bias in the way Google Scholar views the Web (Vaughan & Thelwall, 2004), it seems that B countries, and especially the developing countries among this group, should do more to publicize scientific achievements of their scientists. Following others, e.g. (Chan & Kirsop, 2001), it is this group's opinion that all forms of Open Access can be a big step forward in this direction.

Finally, we hope that colleagues will take up the challenge and expand our preliminary findings. Based on our suggestions it should not be difficult to draw a plan for a research project mapping and explaining observed inequalities between Western countries (our region A), other industrialized countries (such as Japan, South Africa and China), and developing countries, in particular the Least Developed ones (LDCs).

Acknowledgement

The members of the STIMULATE 8 Group express their sincere thanks to Professor Paul Nieuwenhuysen (VUB, Brussels) and the VLIR (Flemish Interuniversity Council) who made this multinational collaboration possible. They thank Raf Guns (Univ. Antwerp) and Wolfgang Glänzel (K.U.Leuven) for useful suggestions leading to a considerable improvement of the original version.

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RESEARCH ON PATENT-BIBLIOMETRIC ANALYSIS IN NSLC (NATIONAL SCIENCE LIBRARY OF CHINESE ACADEMY OF SCIENCES)

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The task of NSLC (National Science Library of Chinese Academy of Sciences) is to provide information services and knowledge services for all Science & Technology decision-making leaders, managers, scientist, researchers, and graduate students of CAS (Chinese Academy of Science). NSLC is composed of the Main Library located in Beijing, three legal branches respectively located in Lanzhou, Chengdu and Wuhan, and some special branch libraries based on some institutions of CAS.

The scientometric research in NSLC mainly focuses on carrying out applied researches on disciplinary or technological development trends and scientific evaluation of research institutes by bibliometrics methods. The bibliometric study of NSLC on journal papers was developed in the early 1990s, represented by the Chinese Science Citation Database (CSCD for short) created and established by the Main Library, which is known as China's SCI. CSCD has already established reasonable influence at home and abroad. The four libraries also used international databases such as SCI, CA (Chemical Abstracts), BA (Biological Abstracts) and EI (Engineering Index) for carrying out scientific-development evaluations by bibliometrics methods respectively in national, institutional and disciplinary levels as well as study on development trends in various subject areas. For example, Jin Bihui of the Main Library had made a number of bibliometric analysis in the fields of technology development evaluation and periodical evaluation. In recent years, the research made by Jin emphasized on H-index and other scientific evaluating indicators. In 2007, Jin, in collaboration with other researchers in the Main Library proposed R-index and AR-index (The R- and AR-indices: complementing the h-index, Chinese Science Bulletin, 2007, 52 (6): 855-863).

Comparatively speaking, the study of patent-bibliometric was carried out late, around 2002. As the first researchers, through statistical analysis, the staffs in Chengdu Branch Library wrote a report "Development Trend of World Chemical Technology" part of which focused on patent-bibliometric study. In 2004 they contributed another report "Development Trend of

Electronic Communication Technology", which focused on the method of patent-bibliometric. This report was for the conference on "Construction of Strategically High Technology and Patent Innovative Information Platform"; research achievements thereof were published in the Science Times (December 7th, 2004, the 3rd edition).

The two reports were instrumental for the Chengdu Branch Library to focus more actively on patent-bibliometric. Since 2005, with the grant of the Finance Planning Bureau of CAS, Chengdu Branch Library has been taking on the research and writing work of annual report of Patent Analysis of CAS, and so far, three annual reports 2005, 2006 and 2007 have been completed. These reports revealed the patent's application and authorized situations for more than one hundred research institutes of CAS mainly from the quantitative angle, and expounded the trends and key points of technological innovation and the market layout of the patents from the quantitative angle by analysis and evaluation. Furthermore, funded by other organzations, Chengdu Branch Library also finished a number of patent-bibliometric projects on some fields, such as biomedicine and information technology, etc. Meanwhile, it also carried out researches on the development of China's regional innovative technology and the development of regional innovative technology in western China from the point of research output, and has published more than 30 related papers.

For further study on patent-bibliometric, Chengdu Branch Library applied for the Fund of Studying Abroad for Senior Visiting Scholars from the Chinese Academy of Sciences in 2006, sent a researcher to SPRU of SUSSEX University, England and later sent another two researchers to Cornell University and Indiana University of America respectively for further study. Since 2005, researchers of Chengdu Branch Library have been publishing theory and applied research papers relating to measure analyzing on patents. Researchers of Chengdu Branch Library also made presentations in this area at the ISSI 2005 and 2007 Conferences. Mr. Fang Shu made presentation at the 2005 ISSI conference on Power-law Fractal: The Law of Technological Innovation Output Statistics and at the 2007 ISSI conference on Research and Application of Patent Map Analysis. Profiles of CAS technological capabilities-A Comparison of Patent Application of the Chinese Academy of Sciences with other national level institutions was presented by Ms. Yang Zhiping in ISSI 2007, Study on Indicator System for Core Patent Documents Evaluation presented by Ms. Zhang Lan in ISSI 2009, A Comparative Study on the Biotechnology Patents of CAS, China by Mr. Chen Yunwei, etc.

In addition, the Chengdu Branch Library also took charge of establishing the net of intellectual property of CAS (http://www.casip.ac.cn/) which has now operational. The website comprises functional modules such as intellectual property database of CAS, Science & Technology achievement information release, business requirement release, online patent analysis system of CAS, intellectual property integrated information system, and intellectual property training system, etc. At present, the Chengdu Branch Library is using the methods of scientometric and the information technology to make online retrieval and the visual online statistical analysis system of patents through the Internet.

Since 2006, the other libraries of NSLC have been paying attention to the patent-bibliometric research, but on different fields. The Main library emphasizes on carrying out researches on nanotechnology, agriculture and optoelectronic technologies, the Lanzhou Branch Library focuses on resources and environment, the Chengdu Branch Library stresses on biological technology and information technology, and the Wuhan Branch Library lays emphasis on energy technology. With a rapid development of scientific research and innovation of CAS in recent years, the demand for technology innovation and the protection awareness for intellectual property increased significantly; for different needs of the customers, each library carried out measure for analyzing and evaluation of patents on scientific metrology, providing scientific information for decision-making and key layout's regulation, for an overall grasp of related patents and technology innovation of related research institutes.

The analyzing tool on patents used by the researchers in each library was Thomson Data Analyzer (TDA), and later changed to AUREKA,

according to the requirements of research and analysis, which enhanced the visual analysis tools and means of patent information. Meanwhile, some free analysis net-tools and data processing software programmed by the researchers themselves were also used in the analysis. In addition, each library has began to focus on training and absorbing researchers on patent study, besides sending some personnel as government researchers to study abroad, they also strengthened the training at home. The master's tutors and the doctorial tutors in each library also began to emphasize on training their own students, and at least five of the graduate theses are on patent-bibliometric research. Presently, a research layout and team is formed initially, which makes the Main Library and the Chengdu Branch as the main body, assisting with Lanzhou Branch Library and Wuhan Branch Library.

NSLC is now in its start level in patent-bibliometric research, therefore, a wide communication and cooperation is warmly expected in the construction of patent index, the analysis method of patent, and the development of analysis tools of patents, etc.

OPEN ACCESS TO RESEARCH LITERATURE IN INDIA: CONTEMPORARY SCENARIO

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1. Introduction

Open Access to knowledge is an international movement having wider participation of research communities in disseminating ones' research outputs and public-funded research results through open access channels. Open access to information is necessarily based upon principle of digital forms of scholarly communication, where research literature is mainly made available through web portals.

Electronic journals, both subscription-based and open access (OA) coexist in developed countries, giving wider choices to the researchers to publish and disseminate their research results. Paid electronic journals reach a limited number of subscribers, whereas open access journals can in principle reach wider number of researchers. On the other hand, most prestigious journals or high impact journals in all major disciplines are still available in fee-based channels.

Inspite of paid subscription, journals from developed countries have dedicated clientele. The situation is somewhat different in developing countries. Journals published in developing countries have relatively low visibility as they have relatively weaker worldwide marketing channels. The situation improves to some extent when the journals establish collaboration with some internationally renowned publishers. Open access removes this barrier of lesser visibility of journals. The print-only Indian journals have limited circulation mostly within the national boundary, thus, they are less visible

globally. Whereas, journals available in open access channels have greater potential of international visibility. OA journals also have greater chance of getting wider coverage by journal indexing and harvesting services as well as getting high rate of citations and receiving high quality papers/manuscripts.

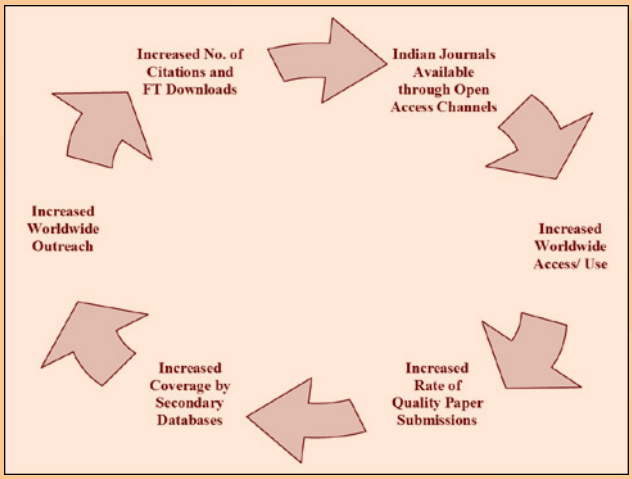

Figure 1 Increased Outreach and Visibility of Indian OA Journals

Figure 1 show how an open access journal can step into the bracket of highly visible journals with superior quality in content. OA can also make transition of a national journal into an international one, provided the journal publisher puts special efforts in quality control, timeliness and indexing by secondary databases. So, embracing open access channels is becoming compulsion to journals published from developing countries.

Indian journal publishers, particularly scientific journal publishers, are seriously considering or firmly stepping into the open access channels. There is also national level consensus at different level of policymaking bodies promoting open access mandates for public-funded research literature. The National Knowledge Commission (NKC), a policy advisory body to Government of India, recommended open access to research literature resulted from the public-funded research [2, 3]. Several institutions such as national S&T academies and R&D apex bodies in India such as Indian Academy of Sciences (IAS), Indian National Science Academy (INSA), Council of Scientific and Industrial Research (CSIR) and Indian Council for Medical Research (ICMR) have started building up open access channels by establishing OA journal gateways and institutional repositories.

2. Open Access Channels for Indian Periodicals

2.1 Open Access Journal Gateways

Indian open access journals are made available through OA journal gateways where an OA journal gateway is dedicated for archiving all OA journals of the same publisher. Table 1 provides an indicative list of open access journal gateways for Indian scholarly journals. This Table indicates that Medknow Publications is major OA journal publisher in India having eighty journal titles on its credit. This is followed by medIND OA journal gateway, which hosts forty Indian biomedical periodicals. Public-funded S&T institutions such as Indian Academy of Sciences (IAS), Indian National Science Academy (INSA), National Institute of Science Communication and Information Resources (NISCAIR), Defence Science Information and Documentation Centre (DESIDOC), etc. have established their own OA journal gateways, where most of their peer-reviewed journals are placed for worldwide

Name of OA Gateway	Implementing Agency	URL	No. of Journals
Medknow Publications	Medknow Publications and Media Pvt. Ltd.	http://www.medknow.com/journals.asp	80
medIND	Bibliographic Informatics Division, National Informatics Centre, New Delhi	http://medind.nic.in/	40
NISCAIR Online Periodicals Repository	NISCAIR, CSIR, New Delhi	http://nopr.niscair.res.in/; http://www.niscair.res.in/sciencecommunication/ResearchJournals/rejour/rejour1.htm	16
OpenMED@NIC	Bibliographic Informatics Division, National Informatics Centre, New Delhi	http://openmed.nic.in	13
IAS OA Journals	Indian Academy of Sciences, Bangalore	http://www.ias.ac.in/pubs/journals/	11
IndianJournals.com	Divan Enterprises, New Delhi	http://indianjournals.com/	10
KRE Journals Online	Kamla-Raj Enterprises, New Delhi	http://www.krepublishers.com/KRE-New-J/	10
eJournals@INSA	Indian National Science Academy, New Delhi	http://www.insa.ac.in/	4
DRDO Publications	DESIDOC, New Delhi	http://publications.drdo.gov.in/ojs/index.php/	2
ISIK OA Journals	Indian Statistical Institute, Kolkata	http://sankhya.isical.ac.in/	2
IIAP Repository	Indian Institute of Astrophysics, Bangalore	http://prints.iiap.res.in	1

Table 1 Open Access Gateways for Primary Journals in India

dissemination. This Table also indicates that private-sector enterprises such as Medknow Publications, Kamla-Raj Enterprises and Divan Enterprises have established OA journal gateways for different Indian journals.

Apart from OA journal gateways, institutional repositories or subject repositories can also systematically archive journal contents of some specific journals [1]. For example, OpenMED@NIC, a subject repository maintained by the National Informatics Centre, provides access to eleven Indian journals. Similarly, IIAP Repository, an institutional repository of Indian Institute of Astrophysics, provides access to one Indian journal.

OA Journal Gateways in India, listed in Table 1, are briefly described below:

- *Medknow Publications OA gateway* provides full-text access to eighty peer-reviewed biomedical journals published by Medknow Publications in collaboration with different learned societies and institutions in India and abroad. These journals are OAI-PMH-compliant[1]. Apart from current volumes of Medknow journals, archive of back volumes is also available through each journal's homepage. These journals are widely indexed by secondary databases, search engines, OA directories and metadata harvesting services, giving wider visibility to the journal titles. Medknow also provides solutions to the scientific societies and scholarly institutions through Journal-on-Web – a web-based manuscript submission and peer review system that handles pre-publication and post-publication processes for journal issues.
- *medIND@NIC* provides full-text access to forty biomedical journals published by different scientific societies and institutions in India. This service is provided by Indian MEDLARS Centre at the National Informatics Centre (NIC), in collaboration with Indian Council of Medical Research. This is a subsidiary service of INDMED@NIC, an online bibliographic database of articles published in over seventy biomedical journals in India.
- *NISCAIR Online Periodicals Repository (NOPR)* presently provides full-text access to three journals published by NISCAIR, namely, Indian Journal of Biochemistry and Biophysics (IJBB), Indian Journal of Chemistry Section A (IJC-A) and Indian Journal of Traditional Knowledge (IJTK). Full-text content of thirteen more journals published by NISCAIR will be made available in due course of time. This gateway is developed using DSpace open source software. This initiative is supported by CSIR.
- *OA Gateway of IAS* provides full-text access to eleven peer-reviewed journals published by the Indian Academy of Sciences (IAS), a renowned scientific academy funded by the Government of India. IAS has already archived all articles of major journals from the volume one. From 2007 onwards, ten IAS-published journals are also available through SpringerLink (Springer), a subscription-based gateway of electronic journals.
- *OpenMED@NIC* is an open access archive for medical and allied sciences, maintained by Bibliographic Informatics Division of NIC. Here authors and editors can self-archive their scientific and technical documents. Full-text articles of thirteen Indian biomedical periodicals are systematically archived in this subject repository. This gateway is developed using EPrints open source software. This gateway is OAI-PHM-compliant.
- *IndianJournals.com* provides single-window access to multidisciplinary Indian journals published by different scholarly societies and institutions. It provides free access to seven peer-reviewed OA journals and three OA periodicals. It also maintains archive of back volumes. These open access scholarly journals mainly belong to the science, technology and medicine (STM) areas. This common journal gateway is freely accessible if the users register their names in the website. In addition to OA journals, this gateway also provides access to subscription-based journal content.
- *KRE Journals Online* is the open access journal gateway for journals published by Kamla-Raj Enterprises in Delhi in collaboration with different scholarly societies and institutions. Presently KRE publishes ten (seven existing and three new additions) OA peer-reviewed journals mainly in the areas of social sciences. These journals are OAI-PHM-compliant.
- *eJournals@INSA* is the open access journal gateway for Indian National Science Academy (INSA)-published journals. This portal provides access

[1] Open Archives Initiative-Protocol for Metadata Harvesting (OAI-PMH)-compliant journal systems expose metadata information to harvesters.

to current and back volumes full-text literature of four peer-reviewed INSA journals, namely, Indian Journal of Pure and Applied Mathematics (IJPAM), Indian Journal of History of Science (IJHS), and Proceedings of the Indian National Science Academy - Part A and Part B. INSA has archived all articles of these journals from the first volume. For getting access to full-text resources in this gateway, user registration is required. This project was one of the pioneering open access initiatives in India, supporting the concept of free access to scientific literature.

- *DRDO Publications Gateway* provides full-text access to two peer-reviewed journals published by DESIDOC, namely, DESIDOC Journal of Library and Information Technology (DJLIT) and Defence Science Journal (DSJ). This gateway is developed using Open Journal Systems (OJS) open source software. These journals are OAI-PHM-compliant.
- *ISIK OA Journal Gateway* provides full-text access to two high-quality journals published by Indian Statistical Institute Kolkata, namely, Sankhya - the Indian Journal of Statistics, Series A and Series B. These journals are OAI-PHM-compliant.
- *IIAP Repository* is an institutional repository of Indian Institute of Astrophysics (IIAP), Bangalore. Full-text articles of Bulletin of the Astronomical Society of India are systematically archived in this institutional repository. This gateway is developed using DSpace open source software. This gateway is OAI-PHM-compliant.

2.2 Coverage of Indian Open Access Journals by Secondary Gateways and OA Journal Aggregator

Online secondary database services are very useful referral tools to the researchers across the world to locate scholarly literature published in wide array of open access journals. There are also secondary gateways that provide referral service to the end-users and re-direct their queries to the appropriate journal gateways. Table 2 provides an indicative list of secondary gateways referring Indian open access journals. The most important ones are described below:

Name of OA Gateway	Implementing Agency	URL	Coverage (No. of Journals)
Directory of Open Access Journals (DOAJ)	Lund University Libraries, Sweden	http://www.doaj.org/	3928
Open J-Gate	Informatics India Limited, Bangalore, India	http://www.openj-gate.com/	4793
Bioline International	Bioline International; Reference Center on Environmental Information, CRIA, Brazil	http://www.bioline.org.br/journals	58

Table 2 Secondary Open Access Gateways Providing Access to Select Primary Journals from India

- *Directory of Open Access Journals (DOAJ)*, maintained by Lund University Libraries in Sweden, provides a directory service to the users of open access journals. DOAJ is considered as a most comprehensive directory for peer-reviewed open access journals published worldwide. DOAJ aims to cover all subjects and languages. As on 17th March 2009, out of 3928 journals in listed in the directory 1403 journals are searchable at article level. This content indexing service is known as DOAJ Content.

As DOAJ has worldwide coverage, it refers to several journals published from the South Asian countries as well. Table 3 provides distribution pattern of South Asian journals in DOAJ, based on number of journals listed in this service. This Table shows that India has maximum contribution followed by Pakistan. Out of 163 journals listed in DOAJ, 90 journals are searchable at article level, i.e., covered in DOAJ Content service. Figure 2 illustrates distribution pattern of

Name of Country	No. of Journals Listed	No. of Journals covered in DOAJ Content
India	109	63
Pakistan	43	23
Bangladesh	5	1
Nepal	5	2
Bhutan	1	1
Other Countries	3765	1313
Total	**3928**	**1403**

Table 3 Country-wise OA Journal Distribution in DOAJ amongst South Asian Countries

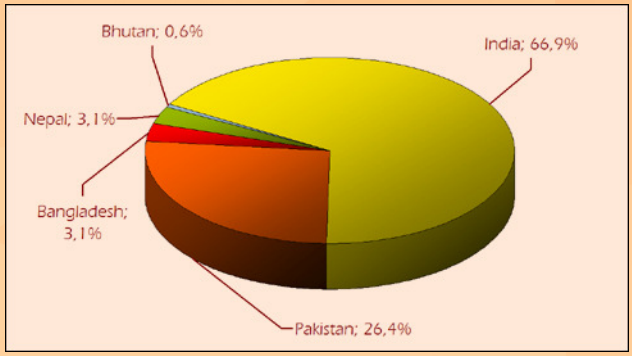

Figure 2 DOAJ Journal Distribution amongst South Asian Countries

DOAJ-listed journals amongst South Asian countries. It further shows that India contributes 66.9% out of total 163 South Asian journals, followed by Pakistan (26.4%). Unfortunately, three South Asian countries, i.e., Sri Lanka, Maldives and Afghanistan are not included in DOAJ. Probably these countries do not produce peer-reviewed journals having qualifying features as defined by DOAJ.

- *Open J-Gate*, a metadata harvesting service of Informatics India Limited, is a searchable portal for papers/articles published in open-access journals. It covers open access peer-reviewed journals as well as professional and industry journals. It provides access to 4793 open access journals and million plus records of articles. Out of 4793 OA periodicals covered here, 2607 are peer-reviewed journals and rest are professional and industry journals. Although this service has worldwide coverage, mainly open access journals published in English language are indexed in this online database. This is the first corporate initiative in India to promote and support open access initiatives. The bibliographic database is maintained in a well-index database, having the metadata information of each article, abstract and full-text links to each article. It has Quick Search, Advanced Search, and Browse by journal options. In this service, full-text links are regularly validated.

  Open J-Gate maintains seven main subject categories, such as: Agricultural and Biological Sciences, Arts and Humanities, Basic Sciences, Biomedical Sciences, Engineering and Technology, Library and Information Sciences, and Social and Management Sciences.
- *Bioline International* is an international aggregator of open access journals that provides a free participatory common platform for journals published from developing countries. Presently it covers fifty-eight peer-reviewed open access journals from sixteen developing countries in the broad subjects of public health, international development, tropical medicine, food and nutritional security and biodiversity. As indicated in Table 4, OA journals archived in this gateway are drawn from sixteen developing countries. Most of these countries are located in global South. India is the highest contributor, i.e., 24.1%, in terms of number of journals archived from the country of origin as depicted in Figure 3. The Indian journals archived in this gateway are mainly from a single OA publisher named Medknow Publications.

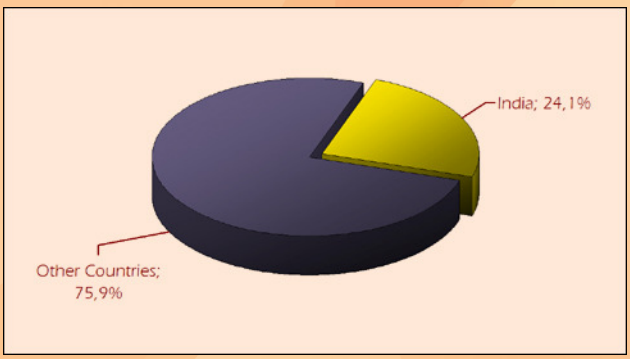

Figure 3 OA Journal Distribution in Bioline International - India vs. Other countries

Country	No. of Journals
India	14
Nigeria	11
Iran	7
Brazil	4
Uganda	4
Venezuela	4
Kenya	3
Chile	2
Tanzania	2
Others: Bangladesh, China, Colombia, Egypt, Ghana, Malaysia, Turkey (1 each)	7
Total	**58**

Table 4 Bioline International - Country-wise OA Journal Distribution

3. Sustainability Issues

Albeit some misconception of revenue loss in print-subscription, open access journals enhance their print-subscription base and overall revenue generation. Open Access journals also enjoy privilege of publishing advertisements in their print-version as well as in online portal that make them economically sustainable. Membership societies also can strengthen their membership subscription base while their OA journals are more visible to the professional or research community. Visible societies and institutions can even receive substantial grants and donations from inter-governmental agencies, government agencies, philanthropic trusts and foundations. This way OA journals as well as OA journal publishers can become self-sustainable. Figure 4 depicts a plausible revenue earning and self-sustainability model for open access journals published in India.

4. Conclusion

Pushing journals into open access channels may not solve the problem of low visibility unless the journal publishers adopt systematic marketing and promotional strategies. OA journals should be

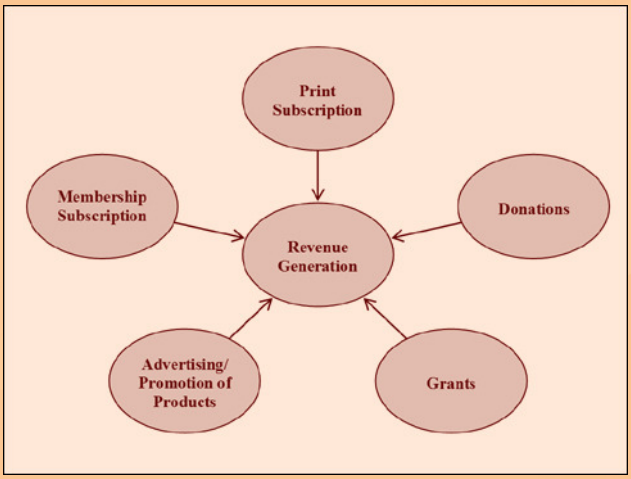

Figure 4 Revenue Generation Methods for OA Journals

widely indexed by metadata indexers and metadata harvesters, in addition to the secondary journal databases. Efforts should also be made to include or index these journals in directories of OA journals, including subject directories.

In this direction publishers like Medknow Publications and Indian Academy of Sciences have shown leadership in pushing Indian OA journals ahead of other developing countries, incorporating appropriate strategies for wider coverage by search engines, directories, metadata harvesters, and secondary databases.

5. Acknowledgement

Author is grateful to Prof. Sujit Bhattacharya of JNU, India for his encouragement and providing intellectual inputs in shaping up this article.

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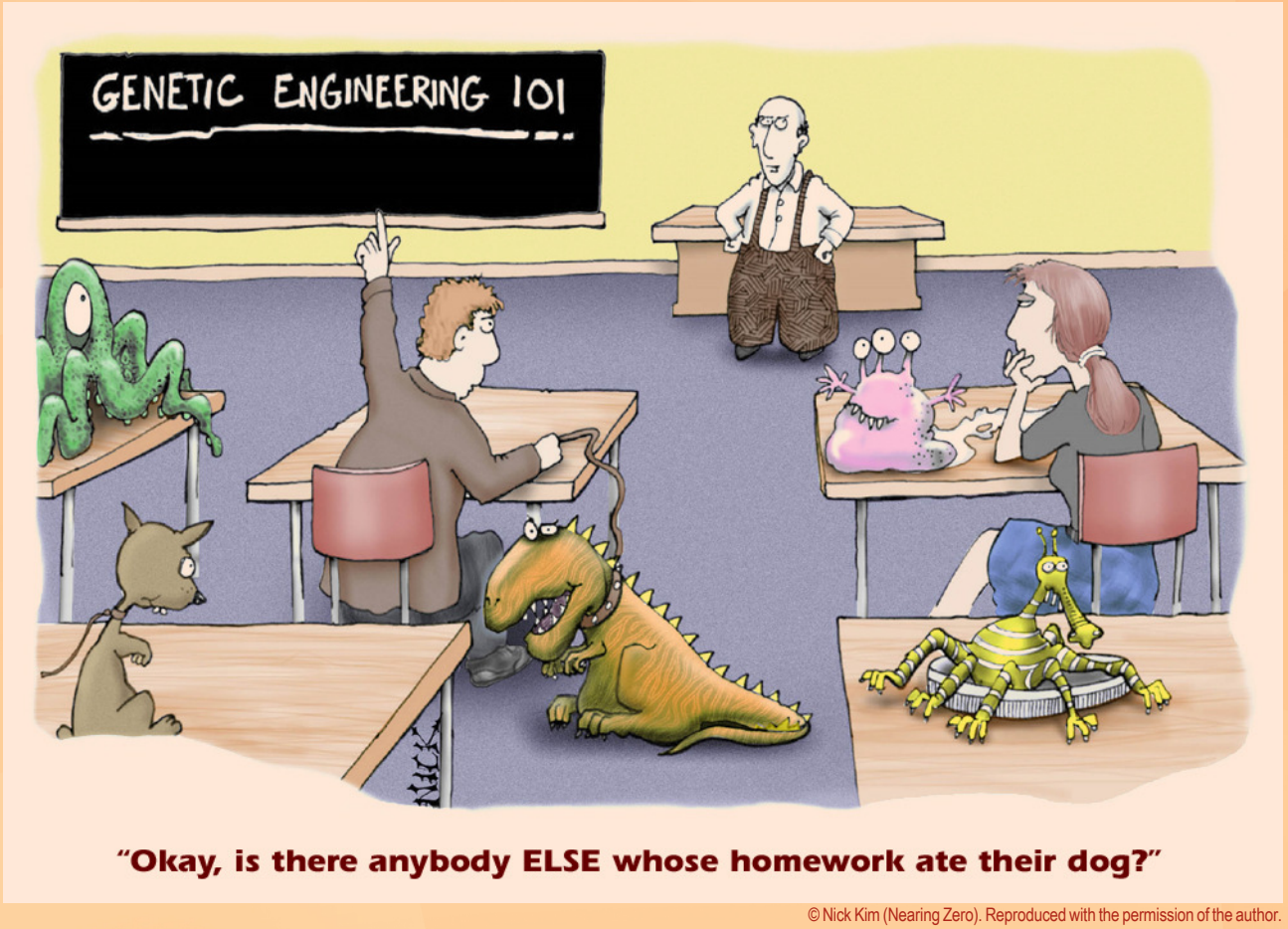
CARTOON



■ **Abstract:** We call for a theory that takes more articles into account than those belonging to the h-core.

The standard definition of the h-index (Hirsch, 2005) makes a sharp distinction between articles belonging to the h-core and all other publications. Borrowing the core-periphery terminology, we will refer to articles that do not belong to the core as peripheral articles, or articles belonging to the periphery. Using this terminology one may say that the h-index grows when peripheral articles enter the core.

In the extreme case that the peripheral article at rank $h+1$ has zero citations and all articles in the core have exactly h citations, $2h+1$ extra citations are needed to move from an h-index equal to h to an h-index equal to $h+1$. In this scenario it becomes more and more difficult to reach a higher h-index. However, this extreme case is not likely to happen in reality. Often the difference in number of citations between the article ranked h and that ranked $h+1$ is zero or one. It is then relatively easy to increase an h-index by one. In general, the smaller the difference in citations between the group of most-cited peripheral articles and the core, the higher the probability that the h-index (and the h-core) will increase.

This fact also explains why an h-index can increase although a scientist is not active anymore. It is stated as a disadvantage of the h-index that a scientist may rest on his laurels as his h-index will increase by itself. With some luck one of the peripheral articles may even turn out to be a sleeping beauty, and give a boost, if not to the h-index (the effect is only one unit), then certainly to the g-index. Although we mentioned this fact as a disadvantage (Liu & Rousseau, 2007), we do not believe this anymore. The h-index just reflects the influence of a scientist's oeuvre and as such it may happen that this influence increases even after the scientist stopped being active.

In h-index studies one almost exclusively focuses on the core. Yet, it is the periphery that determines if the h-core has the potential to increase or not. Ignoring the periphery, and especially the most-cited articles in the periphery, means that no real study of the dynamics of the growth of the h-core can be performed.

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PERIPHERAL ARTICLES

We must admit that on a small scale the periphery has already been taken into account, namely in the definition of the rational h-index (Ruane & Toll, 2008). This definition takes the most-cited article in the periphery into account, but no other peripheral articles. Recall that if a scientist's h-index is h and he needs (at least) n new citations in order to increase his h-index by one, then this scientist's rational h-index, denoted as h_{rat}, is defined as

$$h_{rat} = h + 1 - \frac{n}{2h+1}$$

The relation between the rational h-index and the real one (another approach that takes the periphery somewhat into account) has been studied in (Guns & Rousseau, 2009).

Recently Chinese colleagues have been concerned by the possibility of manipulating the h-index. Indeed, if in order to reach a higher h-index one particular article needs just a few more citations one may cite this target article oneself or ask friends (or students) to do this. In this way it is relatively easy to get a higher h-index. Some call this behaviour a form of fraud.

Yet, we do not consider this behaviour a great source of concern and this for several reasons. First, it seems quite impossible to increase one's

h-index in this way by more than one or two. Second, it takes time to get published, so the result of the manipulation is only visible after quite some time (when it is perhaps not necessary anymore). Third, it is very difficult to cite an article that has no or little relation with the article in which the citation occurs. Peer review will quickly catch this type of manipulation. Finally, if all players know the 'rules of the game' – including the role of cumulative advantage – they all 'play' with equal chances.

In a more general context we would like to stress that citing is a way of promoting science: it draws attention to those articles (and their authors) deserving attention. We think that promoting scientific communication is part of the duties of any information scientist.

In conclusion we would like to call for an h-type theory that takes peripheral articles more into account than has been done thus far. This will give a more accurate picture of a scientist's influence or impact on others. Such a more accurate picture would, moreover, enhance research evaluation results. When there is not a sharp distinction anymore between the core (the articles that 'count') and the peripheral one (those that do not 'count'), the influence of possible manipulation decreases even more. A theory that takes the periphery into account puts more emphasis on academic potential than a theory that draws a sharp distinction between core and periphery.

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Note (by Ronald Rousseau)

It happens that our colleague Leo Egghe has just proposed a theory as called for by Yuxian Liu. In his latest preprint "Characteristic scores and scales based on h-type indices", work based on an idea by Glänzel and Schubert (1988) and revived recently in an h-index context by Glänzel (2008), Egghe considers additional marks (besides the first one, which is the h-index) in a publication list.

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INTRODUCING THE DEREK DE SOLLA PRICE AWARDEES OF 2009

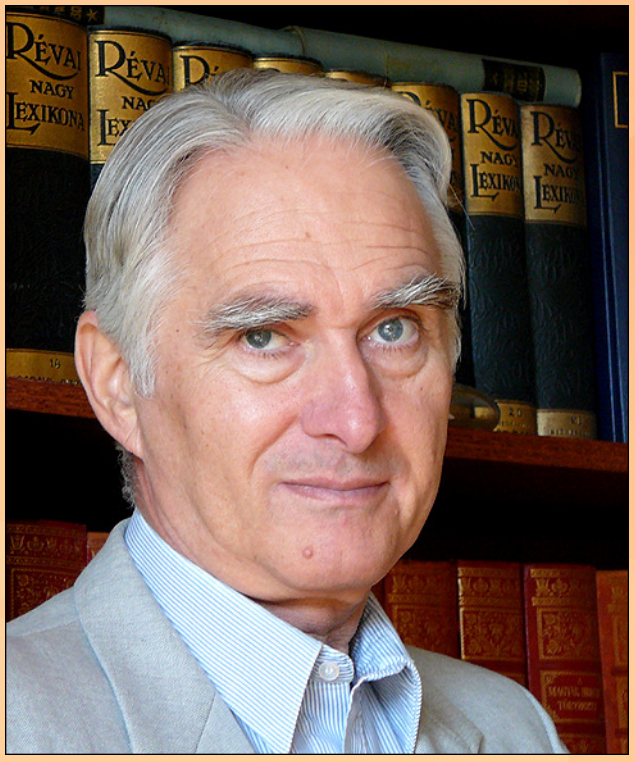
– interviews by Balázs Schlemmer –

The awarding ceremony of the Derek de Solla Price Memorial Medal has become an essential part of the programme of ISSI conferences since the foundation of the Society in 1993. The Price Medal was conceived and launched by Tibor Braun, founder and Editor-in-Chief of the international journal Scientometrics, and is periodically awarded by the journal to scientists with outstanding contributions to the fields of quantitative studies of science. This year's medallists are PÉTER VINKLER (HAS Chemical Research Center, Budapest, Hungary) and MICHEL ZITT (INRA SAE2, Nantes, France; OST, Paris, France). In accordance with the tradition, the awardees are going to receive their Medals during the ISSI 2009 conference in Rio de Janeiro, Brazil. Congratulations to the award-winners!

PÉTER VINKLER

■ **I know that you have graduated in chemistry, moreover you have been working for the Chemical Research Institute (former Central Research Institute of Chemistry) of the Hungarian Academy of Sciences. What are your main research topics in chemistry?**

After graduating from secondary school (in spite of excellent results attained) my admission to the university was rejected because of political reasons. I was planning to be a school teacher of literature and German language. Instead, I had to start my career doing hard manual work (shoveling coal) at the Hungarian Railway Co.. Later, I started studies at the School of Physical Education to be trained as a fencing coach. (In the meantime, I was placed second in two subsequent years at the National High School Championship.) A year later I gained admission to the faculty of chemistry of the University of Szeged. I obtained my degree in 1966, and started research work at the Chemical Research Center (formerly: Central Research Institute for Chemistry) of the Hungarian Academy of Sciences. I dealt with structural investigations of organic compounds (primarily thioamides and thiosemicarbazides) by infrared spectroscopy. I got my PhD in spectroscopy in 1974. I obtained a scholarship of DAAD, and worked a year at the University of Hamburg. The results attained on sulfur chemistry were published in three papers. I established highly valuable relationships with the colleagues in the "Arbeitskreis" of Professor W. Walter.



In 1987 I was nominated Head of Department of Bioactive Complexes. In the early nineties my team succeeded in developing an iron-pectine complex, which could be successfully applied in the therapy of anemia. The pectine obtained from apple can form a chelate complex with iron and thus the compound developed represented the first natural iron complex on the pharmaceutical market in Hungary. The product has no undesirable side effects, therefore it may be recommended even for the treatment of pregnant women. The drug (FERROCOMP) contains also other metals (zinc, manganese, copper, cobalt) and vitamins (vitamin C, folic acid) needed for the absorption and utilization of iron in the human body.

■ How did you drift from chemistry to scientometrics?

In 1979 I was asked by the Directory Board of the Institute to find appropriate scientometric methods for the assessment of publications of our research departments. The aim of the project was to obtain scores which could be applied for distributing among the departments grants for fundamental research.

I began to study the relevant scientometric literature (I primarily surveyed books written by Price, Garfield, Merton, Nalimov and Mulchenko; the report of Narin; the book edited by Elkana, Lederberg, Merton, Thackray and Zuckerman; and some papers of Martin and Irvine and Braun, Schubert and Glänzel.) Shortly it turned out that a reasonable publication assessment should take into account three main indicators:

- number of publications (primarily journal papers),
- publication strategy of the researchers (i.e., "eminence" of journals where they are publishing),
- impact of the individual publications (i.e., citations obtained).

After discussing with the researchers about the possible assessment methods, I realized that suggesting a scoring system with financial consequences involved great responsibilities. Nevertheless, I was fascinated by the fantastic potential of scientometrics. I actually "fell in love" with scientometrics. With the years passing by, the passion has somewhat subsided, as usual, but we will remain faithful to each other for a life time.

The assessment method I recommended, was readily accepted both by the Directory Board and researchers as well. Application of the method soon resulted in a significantly better publication strategy, and contributed to keeping a reasonable balance between fundamental and applied (contract) research activity of the departments.

In 2002, I was the first scientist in Hungary who was awarded the title – Doctor of the Hungarian Academy – in scientometrics. I am still active as scientific secretary of the Research Center, which job involves many administrative duties. I am also head of our Central Library.

In 2001 the Academy established the Scientific Publication Data Base of the Hungarian Academy of Sciences. The organization in my charge maintains a bibliometric data base covering all scientific and popular publications (and citations) of the 3200 scientists active in the institutes of the Academy and research teams maintained by the Academy at universities, from 1992 on. The data bank offers excellent possibilities for performing complex publication assessments across different fields both in natural and social sciences.

■ Do you still remember what were the main findings of your first professional publications? What was your first publication, actually?

My first scientific publication on the optical rotary dispersion of some morphine and codeine derivatives appeared in 1967. My first paper on scientometrics was published in 1984 in Hungarian language on the assessment methods of research results applied in the Central Research Institute for Chemistry. These results were also published in English in the Research Policy in 1986. This paper became one of my most frequently referenced papers. I would mention here that before submitting my first scientometric paper I decided, if it is rejected, I will never try to publish a scientometric paper again. One of my reviewers was an excellent expert in science policy and also an excellent teacher. I am very grateful to him, and learned a lot from his study (3 full pages!) on my paper, which has been accepted after major revision.

■ What do you consider your most important publication? (Not necessarily the one with the highest citation impact, but the one, which is your personal favourite just because of the complexity and/or beauty of the research.)

In my opinion, defining phenomena, relations and laws, as well as classifying items of the study is inevitable in any scientific discipline. Trying to find common and special characteristics of the scientometric indicators was a great challenge to me. The

reviews (Scientometrics, 1988, 2001) dealing with these problems were acknowledged by several citations. In my forthcoming book (Woodhead Publishing Ltd., Cambridge / Chandos Publ., Oxford) entitled *The Evaluation of Research by Scientometric Indicators,* I tried to give a standard description (definition, calculation formula, unit) and also practical examples showing the possible applications of scientometric indicators.

Several of my journal papers (e.g., Scientometrics, 1986, 1998, 2002, 2006) describe different publication evaluation methods applied for institutes or laboratories working in different fields. In 1986 the Relative Subfield Citedness (*RW*) index was introduced, which was the first relative index applying the mean citation rate of papers in a field as reference standard. Later, I succeeded in proving that the *RW* index can be calculated by relating the percentage share of a team or journal (country, institute, etc.) in citations within the total (i.e., world, field, etc.) to the percentage share of the corresponding organization in publications (Specific Impact Contribution Index, SIC). I have verified that the ratio of SIC indexes of two journals is equal to the ratio of their Garfield (Impact) Factor (JASIST, 2004). In this way, the right interpretation of the impact factor of journals, may be revealed. According to this new interpretation the impact factor should be regarded as characteristic to the contribution of the whole journal to the total impact of the field, and should not be considered as the mean citation rate of papers.

One of the main paradigms of scientometrics is that the *citation* may be regarded as *unity of the scientific impact*. Both the Garfield (Impact) Factor, Publication Strategy (PS), Relative Publication Strategy (RPS), Relative Citation Rate (RCR) and Relative Subfield Citedness (*RW*) indices apply citations. Therefore, I wished to reveal the reliability of the application of citations. I have worked out the *Reference Threshold Model* (Scientometrics, 1987, 1998). The Model shows the frequency and relative strength of the motives of authors for referencing. I arrived at the conclusion that the professional reasons represent the strongest and most frequent motivations.

On Saturdays, cleaning the carpets in the house is my job. This activity always gives me a good opportunity to think about scientometrics. On a nice bright morning it suddenly downed on me that there should be some relationship between relative indicators. I grabbed a pen and began drawing formulas. In a few minutes it turned out that: $RW = RCR \cdot RPS$, i.e., the Relative Subfield Citedness is equal to the product of Relative Citation Rate and Relative Publication Strategy. I think, this was the first time a clear relationship between relative scientometric indicators has been established (Scientometrics, 2003).

Some years ago I was asked by Prof. W.E. McGrath to publish a paper on fundamental aspects of scientometrics without sophisticated indicators. I have tried, and elaborated the Scientometric Model of the Institutionalization of Scientific Information (ISIS Model). I am extremely sorry but, the paper (Library Trends, 2002) remained unnoticed. Nevertheless, I consider this paper to be one of my most important publications. The core of the study is that higher number of references and longer terms of influence may be accepted as proofs for higher grades of institutionalization (i.e., incorporation). The paper follows the possible development of scientific information published through evaluation and modification processes toward a cognitive consensus of distinguished authors of the corresponding scientific field. The Model assumes sets of information with a short or long term impact, and information which is integrated into basic scientific knowledge or common knowledge. It describes the information and knowledge systems of science as a global network of interdependent clusters changing dynamically in content and size. The relative and absolute development of the knowledge systems seems to be slower than the increase in the number of publications. I am very proud of this complex model although the paper raised no particular interest.

■ Have you ever had a very surprising research result which was completely against your preliminary expectations?

I often try to build up reasonable, relatively simple, numerical models for revealing relationships in scientometrics. I made a model of the publication development in different fields (Scientometrics, 2002). Contrary to my expectations, I had to realize that the Chance for Citedness (CC, i.e., mean citation rate of papers in the field) is *stable* if the yearly number of publications is constant, and what is more, the CC *decreases* at a standard

increasing rate of publications (e.g., yearly number of papers: 100, 110, 120, 130). At an accelerating increase of publications (e.g., percentage growing field), the CC-index is, however permanently growing.

■ Let's take a closer look at the scientist behind science: how do your colleagues characterize you? And how do you refine the picture?

Obtaining information about yourself through colleagues seldom occurs but, at a nice birth-day party, after some glasses of good wine, we may obtain relevant information. According to my colleagues I am a diplomatic, hard working, helpful and reasonable fellow who is sometimes a bit over-anxious or even nervous. I think the description may be right. Nevertheless, I would add that I am curious, I am always looking for the reasons, and I appreciate traditional human values. I regard creative work as one of the most important human activities, and I believe that the relationship of man to man and man to the universe should be governed by true love and honesty.

■ Rumour has it that beside chemistry and scientometrics you also liked to sing. Better yet, you would like to learn to play a musical instrument if you were not afraid of the reaction of your family members… Tell us more about it, please: what kind of singing was it and what instrument would it be?

As far as singing is concerned, well, I was a member in the choir already in the school. Later, I entered the Choir of Music Fans of Szeged. I had the opportunity to sing also in the choir of the Szeged Opera house, for several years. One of the most moving experiences in my life was to sing: "Dies irae, dies illa…" (G. Verdi, Requiem) and "Freude schöner Götterfunken…" (L. van Beethoven, 9th Symphony).

I had only three piano lessons. When my piano-teacher wanted me to play something with the right hand differently from that I made with the left hand, I interrupted my studies. I am very sorry for that even now. The only consolation for me is that my granddaughter plays the piano beautifully.

■ Any other hobby or leisure-time activity?

I like science fictions. But, only those books and films where scientific and technical achievements can be reasonably extrapolated from the present knowledge (e.g., A.C. Clark, "2001: A Space Odyssey"). In the eighties one of my scientometric papers was rejected. I felt myself deeply offended. I began to write a book, a science fiction. The book was published in 1989 under the title: "3728, Revolt on the Green Planet". The central problem of the book is that the thirst for power is spreading among people like an epidemic. At the same time the potential of human brain is decreasing. Mankind could be saved only through putting all its knowledge and even the human brain into a super computer. The human body is lost, but the mind is still alive.

My hobby is collecting minerals and rocks. I am always delighted by watching the different shape and color of minerals built up from chemically identical components.

My wife (Judit) and I are working in our garden on the Danube-curve from spring till winter.

In winter I go skiing with my family, with my adorable grandchildren, Zsófia (10) and Balázs (6).

■ 5 books, 5 CDs and 5 movies you would take to a desert island...

I like dramas, primarily "The Tragedy of Man" (Imre Madách) of which conclusion is said by Lord: "Man, I have spoken: strive on, trust, have faith!" Hungarian literature is very rich. I like to read poems, primarily by Dezső Kosztolányi, Gyula Juhász, and Árpád Tóth. I would take with me also the famous book of W. Durant: "The Story of Philosophy". But, if I actually had to live on a desert island, I had better to survey "Robinson Crusoe" (D. Defoe).

I am very fond of museums. I am interested in historical and painting exhibitions. I especially like paintings of Renoir, Monet and Vermeer. (By the way, my daughter Zsuzsanna, makes interesting modern mosaic works.)

Sitting in a comfortable armchair, free of daily concerns, I often enjoy evening concerts, listening to the requiem of Verdi, Mozart or Schumann, organ music of Bach, Pachelbel and Liszt.

The films ("Margaret of the night" (C. Antant-Lara); "Ashes and diamonds" (A. Wajda); "Szindbad" (Z. Huszárik); "Bicentennial man" (C. Columbus) are my favorite movies, perhaps because they express my desire for an ideal life.

■ Could you mention a few of your most memorable conference (or other job-related) stories?

Each scientometric meeting is memorable for me, one conference for the discussions, another for the excellent meal and wines or for excursions and visits to museums. But, all conferences are memorable for me for the nice colleagues in the scientometric community.

■ What was the most embarrassing situation during your professional career? And the funniest?
Scientometrics is regarded by non scientometricians (perhaps by scientists, who are not too active and not too successful) as football, where everybody regards him- or herself as an expert and, of course, even better than any coach or professional player. A scientometrician is a professional like a physicist, economist, or a politician, who need professional education. But, scientometric articles are often authored by non-professional or quasi-professional persons. Therefore, it frequently happens that new authors reveal already existing indicators. Although, there is nobody and nothing without precedings. It might once be revealed that an "impactus factor" had been first mentioned and, moreover, calculated by Aristotle in 320 B.C. (JASIST, 1999).

I must admit that it is very embarrassing for me to read papers, e.g., on relative impact indicators (like RW or RPS or Relative Reference Strategy) which give no credit to the author who was first to describe these indexes. (Anyway, this information cannot be regarded as *incorporated* information, which needs no referencing any more, like "gravitation" or "periodic table".) If the essence of the indicator, relation, phenomenon, etc. has already been revealed and only the time factor, data base, etc. is changed, the relevant author should be referenced. Omitting relevant references only once may be a pardonable sin but, it is definitely unpardonable to omit them consistently.

At the end of the interview, I should mention that I am very anxious about the future of scientometrics. The number of new indicators is, namely, exponentially increasing. I am afraid that we will soon run out of Latin letters for labeling indexes (like A, b, c, d, e, f, g, h, etc. index). Therefore, I began applying the Greek alphabet (see, e.g., π-index). I have made statistical calculations and it turned out that we will have no problem till 2012 if the letters of the Hebrew, Arabic and Sanskrit alphabet are also used. But, what will happen after 2012? Should scientometricians stop publishing new indexes? Not at all, I realized that we may use thousands of Chinese characters. Yes, the future of scientometrics is guaranteed.

MICHEL ZITT

■ Little boys usually want to be truck drivers or famous soccer players. It is hardly conceivable that a child decides that he would deal with scientometrics when he grows up. How did it all begin then? In what major did you graduate and how did you get in contact with scientometrics? (And by the way, what did you, as a little boy, want to become?)

"Hardly conceivable" as you say, to such an extent that our children have always had some difficulties understanding and explaining what their parents are really doing, and now a grandson has revealed that behind this professional front my true occupation was, in fact, "inventing stories". Actually, my way to scientometrics was gradual. While preparing my first dissertation, on Delphi method - a strange arrangement of descriptive/predictive aims and normative processes - I gained interest in history and philosophy of science. At this period, academic debates between various schools of

thought, from Popper to Lakatos and Feyerabend, were flourishing. It was the first time I came across *Little Science, Big Science*, as part of the general background.

I really became interested in scientometrics when working on my thesis in economics devoted to invention processes, and attended a summer school (1985) held by the CSI-Mines team in Paris. This team (Latour, Callon, Courtial, Turner) was a pillar of the "strong program" in relativist sociology of science – now "actor-network theory" – a landmark in science studies. In line with their well-known radical positions, they acclimated in my country the culture of scientometrics, especially the lexical approaches assumed to be more appropriate for describing hot and controversial science, leaving citations to the cold "normal" science – this comparison is still present in our current works. In 1990, the minister H. Curien with the help of M. Callon, P. Papon and R. Barré created the *Observatoire des Sciences et des Techniques (OST, Paris)* in response to growing needs of French administration and public research organizations. I was called by R. Barré to join OST in 1991 on a part-time basis and during the first years I contributed to operationalize the database and to establish basic indicators from the state-of-the-art. It was a good training for applied scientometrics. That was the start of it.

Long before that, like many boys of the "Spoutnik generation", I was fascinated by science-fiction, astronautics and astronomy, enrolling friends in building (sort of) telescopes or manufacturing a board game called "*The conquest of space*" - only the board has survived. I certainly would have been happy to discover that I would later work in an "observatory"- although the kind of constellations/stars we observe at OST shine in a different way...

■ It is a well-known fact that you always publish together with your wife, Elise Bassecoulard. How did it come?

It was rather natural, we already worked in the same institution. At the time she was involved in food economics. As she committed herself to a master degree in operation research and management sciences, she was looking for an algorithmic application for her dissertation. I suggested that mapping of changes in lexical associations could be a good topic. She eventually dropped her previous specialty and we sort of co-founded our scientometric team in addition to the family team. I could not thank her enough for the happy collaboration in those two areas!

■ Do you still remember what the main findings of your first professional publications were? What was your first publication, actually?

My very first article, published in 1983 in a French journal of agricultural economics, was focused on an early biotech innovation, the "high-fructose-corn-syrup" based on enzymatic isomerization of corn glucose and a competitor to sugar. Later on, in my thesis, I studied it again as an interesting case of Schmookler's diachrony of economic signals and patenting. My first article in our field was about the dynamic mapping issue just mentioned, published in 1991 in *Scientometrics*.

■ What do you consider your most important publication? (Not necessarily the one with the highest citation impact, but the one, which is your personal favourite just because of the complexity and/or beauty of the research.).

Perhaps a couple of related papers on field normalization issues, "From cross-field to cross-scale effects of normalization" (with Elise and Suzy Ramanana) and "the audience factor" (with Henry Small) sketching an exploratory way for a source-based normalization, to compare both to usual ex post normalization and to renewed influence-based measures of impact. Both papers try to connect some structural features of the universe of publications with practical issues in designing indicators.

Besides, I have a particular affection for a black sheep, an almost uncited paper. We all know now about the concept of "sleeping beauty" coined by Tony Van Raan. In fairy tales, there is some circulation between beauties and beasts. I am afraid that this paper belongs to the category of "sleeping beasts"! Actually we were trying to connect referencing and citedness distributions in a stylized cocitation model, namely through the number of citing papers with at least X references to articles cited at least Y times. Nice "IPP" music! Other "at least-at least" forms were more successful (there are so many ways to fail to invent the h-index!). Well, it is not fair to say this connection we proposed between citing and cited sides was completely useless, at least one team (ours...) did reuse it at least once, in our work on hybrid delineation of fields!

■ **Have you ever had a very surprising research result which was completely against your preliminary expectations?**

Not recently, but this is probably not a good indication, it rather suggests that our hypotheses were too cautious! In a previous work with Yoshiko Okubo on collaboration linkages between big countries, we were rather surprised by the level of resilience of co-publication channels, shaped by history and culture more than geographical proximity.

■ **Let's take a closer look at the scientist behind science: how do your colleagues characterize you? And how do you refine the picture?**

Well I am not convinced that the subject is worth an inquiry. I am afraid they consider me as having some ideas, a minority of which useful, but a bit messy person and moreover definitely allergic to hierarchy. I think they also consider my sense of humour as sometimes interesting but strange. I try to be helpful when possible. I would not try to refine…

■ **What leisure-time activity do you like to do?**

Not very original I guess: arts in general, music, literature, poetry, painting being the only art I regularly practise. A moderate amount of travel, preferably with museums, is welcome too.

■ **5 books, 5 CDs and 5 movies you would take to a desert island...**

Just five? Even Bradford would have been more generous!

Books: Well if I take seriously the hypothesis of the desert island, I sacrifice, alas, my favourite authors with too short books (Borgès, Inoue, Kawabata, Conrad, Boulgakov, Marai I discovered recently), except Philippe Jaccottet's anthologies of French and European Poetry XX century and Hergé's diptych *The 7 Seven Crystal Balls/Prisoners of the Sun*. Main courses would be *The Alexandria Quartet*, *In Search of Lost Time*, *The Brothers Karamazov*. Lastly, a wild card: what economists call Robinsonades are supposed to be helpful on desert islands (?). I pick a fascinating one, Jules Verne's *Mysterious Island*. Unfortunately, it does not tell us how to feed CD and DVD players with solar energy!

CD: Bach: *Well-tempered clavier, Glenn Gould;* Beethoven: *Last quartets, Quartetto Italiano;* Brahms: *Intermezzi, Glenn Gould*. The imperfect recording conditions give to this CD the magic of the "radio days"; Schubert: *Winterreise, Goerne-Johnson;* Ravel: *Piano works, Samson François*. A few jazz titles would be necessary too, especially by Armstrong, Ellington and Monk.

Movies: After all these rather serious books and CDs, let us turn towards pure entertainment, so farewell to Renoir, Kurozawa, Fellini, Bergman, Wong Kar Wai, Kubrick…

B. Wilder: *Avanti;* G. Lautner: *Les tontons flingueurs, "Crooks in clover" (cult film in France, pieces of dialogues known by quite a lot of people);* M. Carné: *Drôle de drame (another cult film,* adapted from J. Storer Clouston's *His first offence*); A. Mackendrick: *Whisky Galore;* J. Demy: *The young girls of Rochefort*

■ **Could you mention a few of your most memorable conference (or other job-related) stories? What was the most embarrassing situation during your professional career? And the funniest?**

Embarrassing situations may stem from projects or work packages when you have to endorse problems or delays that do not depend on you. During conferences, questions difficult to understand for any reason, may also be embarrassing, but just for a while… A recent event, both funny and moving, was the retirement celebration of Elise within our lab, where colleagues had organized a fake international conference on bibliometrics and evaluated her "human impact factor" on the lab staff (including myself), with remarkable scientometric rhetoric!

Many conferences are memorable but I will just pick up a couple of ISSI events. In Chicago (1995) my presentation of the sleeping beast mentioned above had to take place just before the talk of a prominent scientist and Price medallist, V. Nalimov. Another medallist, J. Vlachy, was the chairman, and in this impressive context I was urged to speed up and I was probably quite unclear. A bit troublesome for the beginner I was, but I was spared some possibly embarrassing questions… The ISSI conference in Colima, Mexico, remains in my memory for its special neighbourhood with the puffing volcano, the warm atmosphere, perhaps enhanced by the general optimism at this particular period. Social events were especially lively, following C. Le Pair's recommendation: don't look, just participate!