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On the road to Philadelphia, the joy of being indexed, and publication cloning: reflections of a past Editor-in-Chief

Marek NARKIEWICZ

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The *Geological Quarterly* has come a long way since the first issue was published in 1957 under the Polish title *Kwartalnik Geologiczny*. From a local bulletin publishing studies of the Polish Geological Institute it has became an international journal, indexed since 2003 by the Institute for Scientific Information. The impact factor for 2006 was 0.846, a considerable increase (IF2005 — 0.325) representing upgrading in the "Geology"category to 22nd position among 36 journals ranked. Despite the growing significance of regional geoscientific journals, the *Geological Quarterly* will face new challenges in coming years due to competition from other periodicals, including those from Central and Eastern Europe. The global tendency of limiting the paper issues of journals in favour of electronic versions will enforce changes in editing and distribution. Better rankings of the journal lead to a growing submission rate, associated with increased risk of dealing with manuscripts including duplicated material.

Marek Narkiewicz, Polish Geological Institute, Rakowiecka 4, PL-00-975 Warszawa, Poland, e-mail: marek.narkiewicz@pgi.gov.pl

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My first contacts with *Kwartalnik Geologiczny* — the Polish-language predecessor of the *Geological Quarterly* — date back to 1978. As a young and unexperienced author I did not suspect that I would in future help edit the journal, particularly as it joined the ranks of international periodicals. In those years the *Kwartalnik* differed completely from the present *Geological Quarterly*. Crudely edited by modern standards it contained Polish-language papers almost exclusively by domestic authors, in a large part by employees of the Polish Geological Institute. These were mainly local and regional contributions to the geology of Poland, often by outstanding geologists such as Ryszard Dadlez (Editor in 1976–1997), Marian Książkiewicz, Władysław Pożaryski (Editor 1957–1959), Edward Rühle and Jerzy Znosko. A system of formal reviewing did not exist and editorial decisions were undertaken based on the personal judgment of an editor, sometimes assisted by his collaborators.

In 1992–1994, being already a member of the Editorial Board, I participated in discussions on the future of the journal. Directors of the Polish Geological Institute — the publisher — insisted on publishing exclusively in English. This seemed to me then over-optimistic, given that both authors and the subject matter of the papers were almost 100% Polish, with no prospects of change in this situation in the near future. Should the Polish geological community use English for its internal communication? The answer was positive for the Publisher but negative for me, which resulted in our divorce.

The re-union happened in 1998 when I accepted the invitation of the new editor-in-chief, Leszek Marks, who asked me to become his deputy. The reason for this apparent inconsistency was a total change in policy of the Polish Geological Institute. The new tasks defined for the editors included first and foremost reshaping the *Geological Quarterly* into a modern international journal. The principal aim was to join the "Philadelphia list", i.e. to become indexed in the databases of the Institute for Scientific Information in Philadephia. It was a time in Poland when the ISI indexing became recognized and publishing in "Philadelphia journals" started to be desirable to (mainly young) Polish scientists. The new editorial tasks appeared to pose a real challenge given that in Poland and in most Central European countries there were no indexed geological periodicals in those days (the only exception being the *Geologica Carpathica* published in Slovakia).

SAILING TO PHILADELPHIA: 1998–2002

From 1991 the *Kwartalnik Geologiczny* appeared under a bilingual title with some papers published in English. Volume **38** (1994) was the first to contain excusively English texts. Starting from 1997 the new larger format was adopted while the technical quality of the text and illustrations greatly improved. In the second issue of the volume colour illustrations appeared for the first time in the journal's history. The language of publications remarkably improved owing to collaboration with Jan Zalasiewicz (University of Leicester) who has edited the English texts for grammar and form.

Nevertheless the most important and deepest changes were connected with promoting new international character of the journal. The process started in 1998 with the appointment of recognized scientists from several foreign, mostly European, academic and governmental institutions to the Board of Consulting Editors and to the Editorial Advisory Board. This was accompanied by wider access to foreign authors, mainly to those from neighbouring countries. The major step towards raising the scientific quality of the publications was the introduction of obligatory peer-reviewing involving reviewers from abroad. Since 1998 tables of contents and article abstracts of successive issues have appeared on the journal's website along with the printed version. Since 2003 all papers are freely accessible as pdf files on the Internet.

This organisational revolution led to a change in the affiliations of authors contributing to the journal. During 1997–1998 PGI employees formed a majority of contributions, while in 1999–2002 they composed one-third on average, and in the latest volumes they constituted only 10 to 20%. At the same time the proportion of foreign authors increased to 20–30% which justified the adoption in 2000, of the purely English title of the journal: the *Geological Quarterly*. Formal application for including the journal into the ISI indexing system started in 1998, and since July, 2001 the Institute for Scientific Research has been conducting systematic evaluation of the papers.

GEOLOGICAL QUARTERLY INDEXED: 2003–2007

It was a matter of a pure coincidence that the start of my 5-years tenure as the editor-in-chief correlated with the Thompson ISI decision to include the *Geological Quarterly* into the list of journals indexed in the *Science Citation Index Expanded* and in *Current Contents.* Becoming part of the elite of international journals was a turning point and a milestone in the journal's history. The immediate result of this development was increased interest shown by both authors and readers, reflected in a growing influx of submitted manuscripts and raised citation indices. The first official impact factor, IF2005, was 0.325, a modest result that gave us 32nd position out of 36 journals included in the "Geology" category. Last year the IF2006 jumped to 0.846 and the *Geological Quarterly* advanced to 22nd position on the list. As a consequence the journal is included into the third group of indexed journals together with such renowned titles as *Facies*, *GFF* or *Cretaceous Research*.

A considerable increase in submissions forced the editors to become more assertive, hence the growing number of rejected manuscripts: about 30 against 158 published in the years 2003–2007. The main reasons for rejection so far are inconsistency with the thematic scope of the journal and the local significance of submitted papers. A considerable part of all the papers published (45) had a foreign lead author. Taking into account the total number of authors the proportion of those from outside Poland is even larger, attaining nearly half. Of lead authors from abroad, the majority comes from Central and Eastern Europe (34), the highest representation being of Lithuanians (10), Estonians (8), Czechs (5) and Russians (4). Only five first authors were from non-European countries.

The international character of the journal was particularly emphasized in four thematic issues published in the last five years. These were: "Multidisciplinary event approaches to the Devonian stratigraphic record" (2004, no. 3, co-edited by Grzegorz Racki and Marek Narkiewicz), no. 2, vol. 49 "Stable isotope records of environmental change" (2005, no. 2; Ana-Voica Bojar, Stanisław Hałas and Sławomir Oszczepalski), "Interdisciplinary studies of the Late Pleistocene loesses in the key Kolodiiv site (East Carpathian Foreland)" (2007, no. 2; Maria Łanczont and Jerzy Nawrocki) and the present issue devoted to the conodont biostratigraphy of the Devonian (guest editor Pierre Bultynck).

In the last year, the authors, readers and editors of the *Geological Quarterly* celebrated the 50th anniversary of the journal, with publication of a special double-length issue (Narkiewicz and Ziegler, eds., 2006). The volume included reviews of results of modern regional geological and geophysical studies in Poland. The editors aimed to refer to the best traditions of outlining developments in Poland's regional geology as seen in both the former *Kwartalnik Geologiczny* and in its present English-titled successor. At the same time, references to the broader European context in the papers of the anniversary volume testify to the international scope of the journal.

THE FUTURE IS NOT WHAT IT USED TO BE

It may be difficult to imagine for younger colleagues, but until the mid-1970's when I was starting my scientific career, the personal computer was yet to be invented, the papers were still hand-written, using a typewriter at best, and drawings were made in ink on stuff called tracing paper. Photocopying was in its infancy in Poland, having been introduced with many obstacles placed on its use by a suspicious secret political police. Manuscript processing was thus painstaking and time-consuming process; communication with authors and with editors was slow as e-mail and even a fax-machine were still in the future. All these circumstances led to a somewhat happy-go-lucky attitude among authors. This was much in the spirit of recommendations by the Roman poet Horace, who advised authors to lock a completed manuscript in a chest for seven years and after that to read it and finally decide if it really deserves publishing. Of course nobody waited so long but even so haste was technically impossible.

Another typical feature of those times, particularly in countries behind the Iron Curtain such as Poland, was a total lack of

any "objective" system of evaluation of scientists, based on publications. Equally unknown was the notion of a research grant which can be obtained after submitting, for example, one's publication list. The communist state was not especially demanding in that respect: it gave everyone his or her bowl of rice without requiring much effort in return. The main driving force for publishing was the authors' ambition and pressure from the scientific community. At the same time it was not that important where one published, in fact, people had no idea about indexed or "Philadelphia" international journals. It naturally added some lustre to an author if he or she somehow managed to publish in a western journal, but this was in any case a rare event.

The present and future of scientific publications is now being determined by several global trends that are perhaps, by contrast, even more striking in our part of Europe. The wide implementation of computer technologies and of the Internet has greatly increased the speed and technical ease of creating any kind of presentation, publishing and distributing it. At the same time the quantity of publications is becoming ever more important in evaluating scientists and in deciding which grant proposals to finance. This is taking place in paralell with an increasing number and degree of specialization of scientific journals, both local and international.

These trends and changes over the last 30 years (and since the 1990's in countries like Poland) have had many positive consequences as regards scientific publications. Computer technology has enhanced the technical quality of text and illustrations, while manuscript preparation has become less time-consuming, giving the author more time for creativity. Communication among authors and between authors and editorial offices has become easier and simpler thanks to the Internet. For the same reasons the prospects of prompt and thorough reviewing are much better while the distribution of a publication is quicker and more efficient. Competition between journals is healthy and has many advantages for authors and readers as well as for the journals themselves. Less apparent, in my opinion, are the advantages of monitoring scientific research and evaluating grant proposals based on quantitative parameters that are sometimes uncritically applied. But also in this case, the advantage — at least in theory — lies in the pressure on reporting research results to the scientific community, something that was not always evident in the past.

The general change of environment of scientific research has nevertheless also some deleterious side-effects, involving changes in scientists' attitudes. These changes pose a challenge also to the editors of scientific journals. A new meaning can be now attributed to the long recognised phenomenon of publication inflation (London, 1968). Inflation pressure is exerted both on authors and on journals by "objective" (quantitative) evaluation systems based on publications. Inspired by the motto "publish or perish", authors develop individual survival strategies, which sometimes leads to ethically dubious or suspect practices.

We are all aware that the problem of exiguous contributions is probably as old as the science itself. All readers, not to mention editors and reviewers, know examples of manuscripts which publish new but completely insignificant results. Such redundancy in publications is, however, often unintentional, and is commonly rooted in poorly designed or trivial research projects. Trivial results are relatively easy to identify by a competent reviewer and editor. Sometimes an apparent insignificance of in reality valuable new data may be the result of poor presentation or of insufficient discussion against a broader context. One may then advise an author to discuss results in greater depth in order to draw out farther-reaching implications.

What one is commonly dealing with, however, is a qualitatively different phenomenon which may be defined as the cloning or duplicating of often significant publications, with the intention to raise one's competitiveness within parent institutions and in the market of science funding. The user-friendly copy-and-paste technique is at hand and it is easy to create an apparently new paper from fragments of older text(s) and using slightly modified published figures. This is not better than creative accounting in business, as it creates the illusion of increased value in order to make undeserved profits.

The problem has been quantitatively investigated in the recent survey of bad behaviour in the scientific community, funded by the National (US) Institute of Health (Martinson *et al*., 2005). The results of the poll demonstrate that *ca*. 5% of surveyed scientists from a large representative group admitted "publishing the same data or results in two or more publications". The intentions or motives were not investigated (we can imagine that duplication may sometimes result from, for example, an author's wish to widen the circle of potential readers). On the other hand, the authors cited admit that the results of the poll may for various reasons underestimate the real scale of duplicate publications. The problem has been identified as important in the community of editors of scientific periodicals, and interestingly particularly among medical journals. There is an extensive literature on this issue, analysing in detail causes and effects and suggesting ways to eliminate or at least minimize such dubious practices (see e.g. Johnson, 2006, and references therein).

From my perspective of editor of a geological journal (and also as a reader of numerous geoscience publications), I see the problem of duplicate papers as one of the most important and difficult issues facing us. Publishing such papers has deleterious consequences for a journal. It lowers its scientific quality, destroys the confidence and interest of readers, this being then expressed in decreased citation indices and rankings. This in turn can trigger a negative feedback resulting in less valuable manuscripts being submitted. On the other hand, the fact that redundant papers do pass through the editorial sieve places into question the simple numerical method of evaluation of scientific achievements, namely that uncritically based on a list of publications. Therefore, the old question returns: should we count publications or rather "weight" them ? And what kind of scale should we use ?

Redundancy of publications has different faces. In my editorial practice I have yet to encounter a case of pure self-plagiarism, i.e. one-to-one (or close) cloning of a paper published earlier or at the same time. In the history of the Polish science we know of such an example when the distinguished 19th century geologist Ludwik Zejszner published the same papers nearly at the same time in two or even three journals. However, this was at a time when Poland did not exist, being partitioned between Russia, Prussia and Austria, and only in the latter was it allowed to publish in the mother tongue. One cannot assume that Zejszner was motivated by ill-will to multiplicate his achievements. Rather, he strove to reach the widest possible readership

in the once-Polish area, and he did it by publishing the same texts in Berlin (in German), in Kraków (in Polish), and in St. Petersburg (in Russian).

I guess that today there are other motives behind the repetition of papers, and duplication itself may have different forms and extents. Based on my editorial experience three main types of authors strategies in that respect may be distinguished, in decreasing order of frequency:

1. **Partial self-plagiarism**. Only a part of a previous publication (text and/or illustrations) is submitted without proper reference to the original work. The degree of auto-plagiarism may be various — from a single figure to important chapters and a large part of the conclusions. In less serious cases it would suffice to refer to previous work without inclusion of extensive parts of it.

2. **Salami slicing**. A large report — e.g. results of a major research project and/or thesis — is cut into smaller pieces which are published separately. For example, a large geochemical project including the survey of different compounds is sliced into fragments representing distinct geochemical categories or sub-regions of study. In rare cases this may be justified, but usually it is more reasonable and important to analyse and discuss all the results comprehensively as the project itself is usually an integral entity. Moreover, cutting into small pieces usually leads to repetition because it is often necessary to duplicate, for example, information common to all portions of results, such as the regional background or previous results.

3. **Protracted dosing**. Such an approach is commonly related to a more general strategy of designing a research by planning several stages that involve the same methods and aims while changing merely analogous geological objects, e.g. a geochemical or biotic study of successive lakes or the sedimentology of successive sections of the same stratigraphic unit. Such an approach gives an author the possibility of publishing the results sequentially, as in a soap opera, where each new part does not contribute much that is new and merely duplicates previous results.

The difference between creative accounting and "creative" publishing is that in science (at least from the Polish perspective) it does not seem really possible to become bankrupt as a result of such behaviour. So how can scientific journals effectively deal with the problem of repetitive publications? The idealistic approach is to appeal to authors to behave properly. It should be stressed that apart from the doubtful honesty of such practices in misleading both editors and authors, they also have potentially harmful consequences for the authors themselves. The latter waste their time in an intellectually arid activity which, moreover, will be sooner or later noticed, if not by reviewers or editors then by readers. Consequently, the author's reputation will suffer from this kind of "creativity".

Of course much responsibility rests on journal editors who should reject duplicate papers or, when the repetitiveness is less significant, to insist that authors delete it. There is a spectrum of possible sanctions proposed by Johnson (2006) against variably dishonest authors, including informing the parent institutions, professional organizations and funding/granting agencies.

There is no doubt that in future the editors of the *Geological Quarterly* will experience an inflow of many valuable manuscripts but the same time they will encounter the problem of redundant publications. In fact the issue will be even more important the higher the status in rankings the journal will attain, becoming thereby a more attractive place for publication. Inevitable changes in techniques of editing, publishing and distribution will lead to abandonment of the paper form of submitted manuscripts and of reviews and, in the more distant future, also of the paper issues of a journal, all being replaced by electronic versions. This will lead to an increased number of submissions thereby increasing also the risk of redundant publications, including duplicate ones. This risk, however, must be faced if the journal is to develop. The future is promising, but it does not promise complete happiness...

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