

诚信的危机：学术出版的现状

Integrity Under Attack: The State of Scholarly Publishing

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尊敬的编委们，

如果这篇文章能够翻译成中文并且在中国出版发行，我将非常高兴。我正在计划取得国际同行的共同支持一起来应对这些问题，因此，中国同行的支持十分重要。

我已经收到好几次要求将此文翻译成不同文字的请求。事实上，该文已经被翻译成好几种语言了。美国工业与应用数学学会及我本人都乐意授权给各国同行翻译此文。当然，我们希望翻译者（1）注明该文的原始出处；（2）附上原文的链接（可以在我的个人主页里找到）；（3）附上作者的简介。

非常感谢您的协助！

Doug Arnold

美国工业与应用数学学会主席

Dear Editors:

I would be very pleased if the article were published in Chinese and disseminated in China. I am working on a plan for international action on some of these issues, and support by colleagues in China would be very valuable.

I have already gotten similar requests, and there are already translations into several languages. SIAM and I give permission with only the obvious minimal requirements, namely that you (i) State the source of the original article; (ii) Include a link to the original, which is posted at my website; (iii) Include a biographical note about the author.

Thanks, and best regards,

Doug Arnold,

President of SIAM

科技期刊的出版无疑非常重要，因为他们是传播和获得科研成果最重要的方法，也是与我们的健康、安全和发展息息相关的企业的重要组成部份。通常，大学、研究基金机构以及其它组织都将出版物作为衡量科学研究成效和影响的主要依据。此外，出版物不但在招聘、升职以及加薪等事宜中起决定性的作用，而且对一个学系，研究机构、甚至一个国家的科研排名也至关重要。正是由于出版物能带来如此多的利益，所以有些人在这方面有一些不道德的、违反学术规范的、或是明显的欺骗行为，也是意料之中的。然而，当我认真地调查这个问题时，我还是对调查结果感到十分震惊。在这个专栏里，我会举几个发生在应用数学领域里的作者或杂志的严重不当行为的例子。**我所得出的结论是：我们不应该过分依赖一些常用的文献计量学指标，比如杂志的影响因子或作者的被引用次数，来进行**

Scientific journals are surely important. They provide the most effective means for disseminating and archiving scientific results, and so are a key part of an enterprise on which our health, security, and prosperity ultimately depend. Publications are used by universities, funding agencies, and others as a primary measure of research productivity and impact. They play a decisive role in hiring, promotion, and salary decisions, and in the ranking of departments, institutions, even nations. With big rewards tied to publication, it is not surprising that some people engage in unethical behavior, abuse, and downright fraud. Still, when I started to look at the issues more closely, I was appalled by what I found. In this column, I give a few troubling examples of misconduct by authors and by journals in applied mathematics. One

排名或者判断。因为这些指标无论是在理论上，还是在实际中，都很容易被造假。

毫无疑问，美国工业与应用数学学会（SIAM）认为学术出版十分重要，而且我们也一直致力于保证它的出版物的声誉，以及防范其发表的成果遭到剽窃。一直以来，我们也在想办法在这方面做得更好。因此，我恳请“工业与应用数学学会”的会员们一起来做好这件事。比如，如果你们发现了我们的期刊上有任何问题，请联系我；你觉得这些问题正在恶化吗？“工业与应用数学学会”应该在这方面做更多的事情吗？我们应该对自己的出版物和作者加强监管吗？

我们经常能发现学术作者的不当行为。这一类不当行为里，最常见的就是逐字逐句抄袭了，而更“高明”的做法则是那些诸如把其它文章的主要想法偷偷搬来复制文章的行为。然而，“工业与应用数学学会”认为事情的严重性远不止此，更严重得多的是由于受到一些显然的利益驱动，一些出版社和编委也利用学术杂志进行不当的行为。比如**有些杂志看似十分规范，因为表面上它们也有专家评审程序。然而这些专家评审程序却十分草率，甚至一点也不严格。还有些杂志为了提高诸如影响因子等文献计量指标，故意增加自己的引用次数。**

最近发生了一启事关“工业与应用数学学会”期刊的抄袭事件。该事件同时涉及学术作者和杂志的不当行为。2008年在“工业与应用数学学会”的一个杂志上发表的一篇文章，其作者于文章正式发表之前在互联网上公开了文章的预印本。可是有人逐字抄袭了这个预印本，只改了一下文章题目和作者名，于同一年在《国际统计和系统期刊》（《International Journal of Statistics and Systems》）发表了。“工业与应用数学学会”的出版商、负责出版的副主席、执行主任以及我本人对此事进行了为期六个月的全面调查。随着调查的进行，我们发现该事件越来越严重。我们决定把整个调查结果公诸于世。读者可以在互联网上找到有关细节（见【1】）。

对于此事，我们还得出一些更糟糕的结论。我们把这些涉及抄袭行为的作者的一些文章找来仔细阅读，结果发

conclusion I draw is that common bibliometrics -- such as the impact factor for journals and citation counts for authors -- are easily manipulated not only in theory, but also in practice, and that their use in ranking and judging should be curtailed.

SIAM places great value on scholarly publishing, of course, and we are taking strong actions to ensure the integrity of our own publications and to protect our authors from theft of their work. But we are still struggling to decide just what actions we should take. So I invite the thoughts of members of the SIAM community. If you have witnessed troubling incidents in journal publication, let me know. Do you think such incidents are on the rise? Should SIAM be doing more? Should we look beyond our own publications and authors?

Author misconduct -- most obviously verbatim plagiarism, but also more subtle appropriation of ideas and duplicate publication -- has always been with us. At SIAM, however, our impression is that the problem is becoming far more common. Perhaps even more disturbing is journal misconduct, carried out by publishers and editors, often with an evident profit motive. One example is a sloppy or sham peer review process designed to produce the impression of a serious scholarly journal without the substance. Another is the deliberate manipulation of citation statistics in order to raise the impact factor or other journal bibliometrics.

A recent case involving SIAM brings in both author and journal misconduct. A paper published in a SIAM journal in 2008 was plagiarized essentially verbatim from a preprint version posted by the authors on the web. A copied version of the paper appeared in the International Journal of Statistics and Systems in the same year with different title and authors. SIAM's publisher, vice president for publications, executive director, and I undertook a full investigation, which required nearly six months. The case got messier and more disturbing week

现他们的抄袭行为远不止前面提到的这篇文章。他们至少有四篇发表在四个不同杂志上的文章是逐字抄袭他人的论文。这样的结果不得不让我们怀疑他们的其它文章也可能是抄袭的。刊登上述这篇抄袭论文的杂志是由印度研究出版社（Research India Publications）出版的。这个出版社同时出版大概50种杂志，其中大部份都与应用数学相关。然而，当我们就此抄袭事件与他们联系时，该出版社却没有给我们回应。我们与该杂志主页上列出的主编联系，可连这位主编都无法联系上该出版社！当这位主编知道了这件抄袭事件后，他随即向出版社提出了辞职。然而迄今为止，他仍然没有收到出版社的任何回复。在这个杂志的主页上，我们仍然可以看到他的名字以及很多知名的数学家的名字。

很多人都觉得《混沌、孤立子和分形》杂志（《Chaos, Solitons and Fractals》），以下简称《混沌》杂志）这本由爱思唯尔（Elsevier）出版的应用数学杂志，就一直存在编委和杂志的不当行为。根据2008年《自然》上的一篇文章（见【2】）所说，该杂志仅十二月份这一期的36篇文章里，就有5篇是由该杂志的主编Mohamed El Naschie所写。而本年度到目前为止，他在这个杂志上已经发表了近60篇论文。事实上，在Web of Science收录的由这位主编撰写的400篇论文里，有307篇是发表在他自己主编的这个杂志上。主编在自己负责的杂志上如此频繁地刊登论文，不得不让人怀疑这本SCI期刊根本就没有执行标准的同行专家审稿程序。而且，这样的行为也大大地提高了该杂志的影响因子。（Thomson Reuters 是根据“C除以A”这个公式来计算一个杂志在某年的影响因子的，其中A是该杂志在之前两年里发表的论文总数，而分子C是指该杂志两年的论文被它的数据库收录的并且在该年度发表的论文所引用的次数）。这位主编在他自己的这本期刊上发表的论文总共引用了4922篇论文，其中大概有2000次引文是来自他自己的这本期刊上的论文，这其中大部份还是他本人的论文。2007年，在Thomson Reuters所列的“数学及跨学科应用”这一类别的杂志排名里，《混沌》杂志在65种SCI期刊中排名第二。

另一个影响因子高得令人咂舌的杂志是2000年创刊的，由设在以色列的弗罗伊德出版社（Freund Publishing

by week. I decided that our final report on it should be made fully public; it is available on the web, where you can read the details (www.siam.org/journals/plagiary).

Meanwhile, here are some of the sad conclusions. Based on the papers that we reviewed, we determined that the suspect authors had committed plagiarism in this and various other cases. At least four articles published under their names in four different journals are essentially verbatim copies of the articles of other authors, and we have reason to believe that there are other cases as well. The journal publisher, Research India Publications, publishes nearly 50 journals, many related to applied mathematics, but did not respond to our inquiries about the plagiarized article. We contacted the editor-in-chief listed on the journal web page, but he himself has been unable to contact the journal! After learning about this incident from us, he submitted his resignation to the journal but has received no response from the publisher; his name, along with those of numerous other distinguished mathematicians, remains on the journal website.

Rumors of editor and journal misconduct have dominated the highly publicized case of the applied math journal Chaos, Solitons and Fractals (CSF), published by Elsevier. As reported in a 2008 article in Nature (Nature, vol. 456, 27 November 2008, page 432), "Five of the 36 papers in the December issue of Chaos, Solitons and Fractals alone were written by its editor-in-chief, Mohamed El Naschie. And the year to date has seen nearly 60 papers written by him appear in the journal." In fact, of the 400 papers by El Naschie indexed in Web of Science, 307 were published in CSF while he was editor-in-chief. This extremely high rate of self-publication by the editor-in-chief led to charges that normal standards of peer-review were not upheld at CSF; it has also had a large effect on the journal's impact factor. (Thomson Reuters calculates the impact factor of a journal in a given year as C/A , where A is the number of articles published in the journal in the preceding two years,



SIAM Review是工业与应用数学学会最重要的期刊,这个学会是国际上最大的应用数学团体,成立于1951年;拥有一万多名会员,总部设在美国费城。

《混沌》杂志的编委,而《混沌》杂志的主编El Naschie也是《非线性》杂志的两个执行主编之一。这两位作者都在自己以及对方的杂志上发表了大量的论文,并且经常互相引用。

《非线性》杂志之所以有这么高的影响因子,还有另外一个原因。比如Journal of Physics: Conference Series (JPCS)是由物理学学会(IOP)出版的会议论文集。会议主办方需要向出版社支付出版费才可以出版其论文集,而出版社宣称他们要求会议主办方在JPCS这本期刊上刊登的所有论文都要通过专家评审程序。然而,不论是JPCS这本期刊上最后的会议论文集,还是其互联网主页,都没有列出编委会名单,甚至没有列出如何判断一个学术会议质量的基本标准。尽管如此, Thomson Reuters在计算影响因子的时候,仍然会将JPCS的引用计入有效次数。2008年, JPCS一共出版了49卷,其中有一卷是收录由《非线性》杂志的主编J.-H. He在他所工作的上海东华大学举办的一个学术会议的会议论文集。这一期会议论文集收录的221篇论文里,有366篇参考文献是在《非线性》杂志上发表的论文,并且有353篇参考文献是J.-H. He本人的论文。这么做的结果是,即使刊登在《非线性》杂志上的论文在2008年一次都没有被其它任何论文引用过,“工业与应用数学学会”

House)出版的《非线性科学与数值仿真国际杂志》(《International Journal of Nonlinear Science and Numerical Simulation》,以下简称《非线性》杂志)。该杂志在过去的三年里一直是“应用数学”类影响因子最高的杂志。该杂志与前面提到的《混沌》杂志有着千丝万缕的联系。比如说,该杂志的创办人及主编J.-H. He同时也是

and C is the number of citations to those articles from articles indexed in the Thomson Reuters database and published in the given year.) El Naschie's papers in CSF make citations, about 2000 of which are to papers published in CSF, largely his own. In 2007, of the 65 journals in the Thomson Reuters category "Mathematics, Interdisciplinary Applications", CSF was ranked number 2.

Another journal whose high impact factor raises eyebrows is the International Journal of Nonlinear Science and Numerical Simulation (IJNSNS), founded in 2000 and published by Freund Publishing House. For the past three years, IJNSNS has had the highest impact factor in the category "Mathematics, Applied". There are a variety of connections between IJNSNS and CSF. For example, Ji-Huan He, the founder and editor-in-chief of IJNSNS, is an editor of CSF, and El Naschie is one of the two co-editors of IJNSNS; both publish copiously, not only in their own journals but also in each other's, and they cite each other frequently.

Let me describe another element that contributes to IJNSNS's high impact factor. The Institute of Physics (IOP) publishes Journal of Physics: Conference Series (JPCS). Conference organizers pay to have proceedings of their conferences published in JPCS, and, in the words of IOP, "JPCS asks Conference Organisers to handle the peer review of all papers." Neither the brochure nor the website for JPCS lists an editorial board, nor does either describe any process for judging the quality of the conferences. Nonetheless, Thomson Reuters counts citations from JPCS in calculating impact factors. One of the 49 volumes of JPCS in 2008 was the proceedings of a conference organized by IJNSNS editor-in-chief He at his home campus, Shanghai Donghua University. This one volume contained 221 papers, with 366 references to papers in IJNSNS and 353 references to He. To give you an idea of the effect of this, had IJNSNS not received a single citation in 2008 beyond the ones in this conference proceedings, it would still have been assigned a larger

旗下的15本杂志，也只有SIAM Review的影响因子会比它高。

另一个有关杂志不当行为的例子就让人啼笑皆非了。

《科学》杂志的“科技新闻”六月份在线出版的一篇题为“垃圾文章也能发表”的文章里，资深编委Janet Raloff（【见3】）描述了这样一个试验：康奈尔大学的研究生Philip Davis和其一个朋友用一个叫“SCIgen”的计算机程序随机产生了一个文档。这个文档的语法和词汇是从一篇计算机学科的学术论文中摘取的，但这些词汇却是胡乱堆砌在一起的，文档本身没有任何具体的意义。（这个文档的开头是“压缩对称性和编译器在过去的几年里吸引了大量未来主义者和生物学家的注意。然而，这一类解决方案的缺陷是DHT是富有感情的，大规模的，并且可扩展的”。四页之后，该文档以这样的语句结尾：“我们预期大量的未来主义者很快将会转而研究‘Trifling Thamyn’”。全是莫名其妙的话！）这个文档投给了由Bentham Science 出版社出版的《信息科学公开杂志》（《The Open Information Science Journal》）。该出版社总共出版200多种可以无权限阅读的科技杂志，而根据该出版社的主页显示，其中大部份的杂志都有很高的影响因子。上述这个文档的作者投稿时并没有署名，并且他们留下的工作单位是应用骨像学研究中心。注意作者用这样一个工作单位是另有含意的，因为这个工作单位的英文是Center for Research in Applied Phrenology，其缩写即CRAP，也就是“垃圾”的意思。即便如此，作者四个月之后还是收到“投稿经过专家审稿程序，已经被该杂志接受发表”这样的通知。按照没有设访问权限的公开杂志的管理模式，出版社随即通知作者，只要他们寄给出版社一张800美金的支票，他们这个文章就可以很快正式发表。（很当然地，作者们拒绝了这个要求。）

上述这个例子真是令人十分震惊，但却是确凿无疑。然而，更具危害性的可能是一些很隐蔽的不当行为。例如，一些出版商虽然没有明确废除专家审稿程序，但却参加了很多与学术无关的因素于其中。再如，一些杂志虽然没有大规模地明确要求所有作者一定引用自己刊登的论文，但却暗中给作者和编委施加了压力，希望他们调整参考文献来帮助提高自己杂志的影响，尽管这样的调整可能毫无科学根据。再比如，有些作者或许不是逐字逐句抄

impact factor than any SIAM journal except for SIAM Review.

Another example of journal misconduct was revealed with an element of comedy. In "CRAP's paper accepted for publication", published online in June in Science News, senior editor Janet Raloff (www.sciencenews.org/view/generic/id/44706/title/Science_+_the_Public_'CRAP'_paper_accepted_for_publication) described an experiment in which Cornell graduate student Philip Davis and a friend used a computer program, SCIgen, to generate a random document; the grammar and vocabulary were those of a computer science research paper, but the document was completely free of meaningful content. (The paper opens, "Compact symmetries and compilers have garnered tremendous interest from both futurists and biologists in the last several years. The flaw of this type of solution, however, is that DHTs can be made empathic, large-scale, and extensible." Four pages later, it concludes, "We expect to see many futurists move to studying TriflingThamyn in the very near future." Indeed!) The paper was submitted to The Open Information Science Journal (TOISCIJ), published by Bentham Science, a publisher of more than 200 open-access scientific journals (many of which, according to the publisher's website, have high impact factors). Although the paper was submitted under pseudonyms and with the give-away affiliation Center for Research in Applied Phrenology, or CRAP, Davis was notified four months later that the "submitted article has been accepted for publication after peer-reviewing process in TOISCIJ." Following the open-access model, the publisher told the authors that the paper would be published as soon as they sent a check for \$800. (They declined to do so.)

The cases I have recounted are appalling, but clear-cut. Perhaps even more dangerous are the less obvious cases: publishers who do not do away with peer review, but who adjust it according to nonscientific factors; journals that may not engage in wide-scale and

袭，但他们盗用他人的思想而故意忽略出处。对于这样的不当学术行为，如何识别和判断都无疑困难得多。对此你有什么看法？这样的行为是否会严重地危害我们的科学文献及研究机构？你是否也碰到类似的事情？

综上所述，我认为我们不应该仅用类似影响因子这样的文献计量学上的指标来判断一个学术成果的质量。人们很早就知道了其实影响因子与一个杂志的质量根本没什么相关性，更别说通过影响因子来衡量其中刊登的学术论文的质量，或是这些论文的作者的学术水平了。对数学这个领域来说，由国际数学家联盟，国际工业与应用数学协会，和国际数学统计协会共同调查发表的2008年的引用数据报告（【见4】）就很好地说明了这一点。我们发现这些衡量指标很容易被别有用心的人滥用，事实上很多人已经在滥用这些指标为自己获得利益。从某种意义上来说，这些指标衡量的不是作者、编委或者出版社发表的科研成果的质量，而是他们肆无忌惮滥用这些指标的胆量。我经常能听到有人提出一些技术上的建议，希望能对影响因子的计算公式进行改进，从而能解决上述危机。比如，将公式中的时间跨度由2年提高到5年；或者计算被引用次数的时候不能算自引次数（也就是说作者自己引自己的论文不会计算在前面所说的分子C上）。在我看来，这样的补救措施，仍然解决不了问题。因为**数学论文的被引用次数通常都不太高，即使是非常好的数学论文可能总共都只有几十或者几百次的被引用次数。这样的被引用次数，很多人轻而易举就可以通过造假达到。**正如一个杂志的编委可以在自己的杂志上引用自己的文章来提高自己的被引用次数。同样的，两个不同杂志的编委可以在各自的杂志上互相引用对方的文章。这样，即便没有自引，他们一样各自都会有很高的被引用次数。简单地计算被引用次数永远无法代替同行专家的评价。

这些事情都是与我们科学工作者息息相关的。那我们该怎么办呢？我们显然应该从自己做起。比如无论是我们自己撰写论文，还是审阅别人的论文，我们都应将科学诚信放在首位。我们在答应做一个杂志的编委时，先问问自己以下问题：这个杂志是否坚持严格的专家评审程序？他们是否有清晰的宗旨和制度来保证专家评审程序能顺利执行？目前科技文献泛滥成灾，他们出版的文献是否真的

systematic self-citation, but that apply subtle pressures on authors and editors to adjust citations in favor of the journal, rather than based on scholarly grounds; authors who may not steal text verbatim, but who lift ideas without giving proper credit. These are much harder to measure and adjudicate. What do you think? Are such practices significantly distorting the scientific literature or enterprise? Do you have a story of such dubious practices to tell?

One conclusion that I am ready to draw is that we need to back away from the use of bibliometrics like the impact factor in judging scientific quality. It has long been noted that what the impact factor measures is not well correlated with the quality of a journal, and even much less with the scientific quality of the papers appearing in it or of the authors of those papers. In our field, the 2008 IMU-ICIAM-IMS report Citation Statistics (www.iciam.org/QAR/CitationStatistics-FINAL.PDF) made that case eloquently. Less emphasized has been that these metrics are open to gaming, and are in fact being gamed; in some cases they are likely a better indicator of the unscrupulousness of the authors, editors, or publishers than of the quality of their work. Frequently, I hear of technical solutions, proposed in the hope that an adjustment to the formula -- for example, increasing the time frame for the impact factor from 2 to 5 years, or excluding self-citations -- will solve the problem. Such remedies, in my opinion, are doomed to failure. The numbers of citations to mathematical articles are small integers, with excellent papers often drawing lifetime totals of only tens or hundreds of citations, and such numbers are easily manufactured. What one editor can do in one journal by self-citation, a pair of editors can do with two journals without self-citation. Counting can never replace expert opinion.

What can we, as concerned scientists, do? Of course, the first step is to look to ourselves: As scientists, we should place great emphasis on scientific integrity, in what we write and what we review. Ask yourself some

有意义？上述的种种学术不当行为的事实和问题，我们不但要告诉我们的学生，也要告诉我们的同事、行政人员和上级。下次再有人把论文数量、被引用次数、或者影响力因子作为衡量科研工作质量的指标时，我们都应该明确反对。我们要让大家知道真要想提高这些指标，是多么容易的一件事。而且现在很多人对这些不规范的学术行为正乐此不疲。我们需要关心的不是这些指标，而是论文本身的质量、引用情况的本质是什么、以及杂志本身的质量。欢迎“工业与应用数学学会”的同行们与我们分享你们在这方面的经验和想法。我的电子邮箱是 president@siam.org。

注：原文刊登于2009年12月出版的《SIAM News》第42卷第10期“Integrity Under Attack: The State of Scholarly Publishing”，并可在以下链接找到 <http://umn.edu/~arnold/siam-columns/integrity-under-attack.pdf> 本文由香港浸会大学袁晓明博士译成中文。

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- 【4】 <http://www.iciam.org/QAR/CitationStatistics-FINAL.PDF>

questions before lending your name to a journal as an editor. Does that journal hew to high standards of peer review? Does it have clear policies and mechanisms for enforcing them? Is its output a useful addition to the sprawling scientific literature? We also need to educate others, not only our students, but also our colleagues and administrators and managers. The next time you are in a situation where a publication count, or a citation number, or an impact factor is brought in as a measure of quality, raise an objection. Let people know how easily these can be, and are being, manipulated. We need to look at the papers themselves, the nature of the citations, and the quality of the journals. I look forward to learning from the experiences and thoughts of the SIAM community. You can reach me at president@siam.org.

The PDF file of this article is available at

<http://umn.edu/~arnold/siam-columns/integrity-under-attack.pdf>

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