



Farewell Springer... Hello Wiley

The tale of an academic scientific periodical —“20 years later” the Journal of Cell Communication and Signaling

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Abstract

Academic publishing is the support for dissemination of research findings that constitute the grounds upon which new orientations and improvements are based on sharing breaking ideas, critical analyses of data, and argumentations that sustain the development of collaborative research projects. The wide diffusion of new scientific findings is pivotal to the progress of medical sciences, a salient feature of human societal fullness and intellectual welfare. In a practical way, the value of academic publishing can be ascertained by its capacity to reach a wide number of readers from different fields that may provide the soil for interactive projects. The challenges are numerous (Zul in *Challenges in Academic Publishing; Navigating the Obstacles*, 2023). An examination of the means developed to survey the individual performances of scientists, based on their publications, has led me to comment in this editorial on pitfalls that muddle the way to upstanding evaluations mainly based on irrelevant metrics.

Keywords Academic publishing · Performance metrics · Impact factor · Downloads · Artificial intelligence · Academic publishing

Introduction

The time has come to turn a page on 16 years of collaborative publishing with Springer. It is not an easy task to conduct an objective introspection that must address both scientific and human aspects. The memory of events is often dulled by the context in which they occurred and by the traces that they leave deep inside our unconscious mind, ready to unexpectedly bubble up and make ourselves question the intrinsic value of our achievements.

What follows is an attempt to draw and comment on a few aspects of our adventure in a world erected on competition and profit.

After the novel of Alexandre Dumas « Vingt ans après » a sequel of « Les Trois Mousquetaires » », 1845 Editions Flammarion, Paris France. Not to be mistaken with “les mémoires d’un âne” by la Comtesse de Ségur (Hachette, Paris 1860)

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Behind the curtains: the good and the bad¹

The roots

My interest for publishing goes back to 1965 when as a 12th grade student I headed the publication of my High School Gazette ...My first official contributions in a competitive scientific publication realm were published in 1972, in the *Journal of Molecular Biology* (published by Elsevier since 1959) followed by several others and a cloning manual (Perbal 1984) in which I shared my early practical experience in the emerging field of Molecular Cloning. I took my first position as an Editor-in-Chief in 1989 with a Journal entitled *Methods in Molecular and Cellular Biology* which I created at Wiley, followed in 2003 by the publication entitled *Cell Communication and Signaling* (CCS) that I launched for BMC, in which I presented my views on Open Access publishing and communication.

¹ After The Good, the Bad, and the Ugly (Il buono, il brutto, il cattivo) 1966 movie directed by Sergio Leone.

JCCS birth to present (2007–2023)

As I have professed, “communication is the key”,² to universal conceptual progress, reciprocal understanding, circulation of original ideas and concepts, tolerance and acceptance of the differences, and much more...

Along this line and in a context that has been previously presented in these columns (Perbal 2015), we decided, with the whole CCS Editorial Board, to accept the proposition of Peter Butler and join Springer. To avoid confusion, we slightly modified the name of our publication and the *Journal of Cell Communication and Signaling* (JCCS), was born in 2007 as the official journal of the International CCN Society (ICCN) [<https://ccnsociety.com/>].

After BioMed reused the CCS acronym that I had created, potential authors were confused and did not quite understand the difference between CCS by BMC, and JCCS by Springer.

Until very recently, I have proposed several times to the management of Springer, that the two journals whose aims and topics were complementary to each other, could fuse into a single journal and become a much stronger publication. In my opinion, this would have been a great benefit to our scientific community.

As it will be documented below, JCCS survived the pain of labour and established itself as a reliable source of scientific information through the support and commitment of our editorial board members who offered their expertise to the noble aim that became the motto of JCCS: “provide a forum for fundamental and translational research focusing on signaling pathways”.

The labour

The objectives of current fundamental research are mostly deprived of financial aspects or reward, primarily aiming to increase societal wellness. The feelings of pleasure and self-esteem that are coming with the fulfillment of goals are driving many researchers. The great psychological satisfactions associated with discovery cannot be ignored.

² Perbal B. Communication is the key 2003, *Cell Communication and Signaling* 1, 1–3, 29 K Accesses at the time of this Editorial.

“All forms of communication between human beings have long been recognized as a requirement for reciprocal understanding, transfer of knowledge, and productive development of societies. This also applies to living cells which are organized in «microsocieties» that constantly adjust to their environment through a complex network of signaling pathways. The chemical communication, that occurs at various levels, results in an integrated exchange of information essential for coordinated responses.

We wish to present a few features of *Cell Communication and Signaling*: an open access, peer-reviewed journal devoted to the publication of manuscripts covering all aspects of cell communication, with a particular focus on molecular processes that govern intercellular signaling and events that sustain cellular communication, both in normal and pathological conditions.”.

The primary steps to having JCCS recognized by the scientific community were shaped by the scientific expertise and research orientations of both Editors and Reviewers who kindly accepted to evaluate manuscripts.

I wish to express here my deep and sincere appreciation and acknowledgements of the colleagues who were always ready to take the time to evaluate the scientific novelty, credibility and reproducibility of submitted manuscripts.

Most of them are still with us today, bringing to the team their remarkable support and altruistic commitment that deserves to be highlighted, particularly at a time of the great publishing adventure that we are presently embarked on.

Historically, the concept of Committees leading to the modern systematic peer reviewing process that took root in the middle of the nineteenth century, is a rather new feature in publishing, considering that the first academic publications appeared two centuries before the authenticity of the books and other published works being materialized by the stamp of the publisher.

With time, the peer reviews tended to become anonymous and more demanding because of the huge increase of academic manuscripts produced worldwide. A marked contribution of new forces has successfully emerged from Asian and Southern countries, in an effort to join leaders in fundamental research of high quality.

Relying on a group of experts with different backgrounds offering their competences and professionalism to evaluate the conclusions drawn by the authors has always been expected at JCCS for the reviews to be run with integrity.

The metrics

Several metrics have been introduced to quantitatively or qualitatively assess the publishing activity of academic scientific journals, and their influence in competitive scientific realms that are the scene of constant races.

Since the pros and cons of the various tools developed over the past years, have been widely discussed in the scientific literature (see for instance, Fire and Guestrin 2019, we will only focus here on two different types of evaluation.

For many years, the so called “Impact Factor” (IF) (Garfield 1955) was the most common metric used by the different parties willing to rely on valid features for promoting individuals or financing their research, even though many authors considered that to be biased.

In my opinion the weakness of these metrics stem from the use of citations as a valuable mark of recognition’s broadness to account for the quality of a research project conducted in an unconventional direction. There are many examples in molecular and cellular biology sustaining the idea that the use of IF favors trendy publications and reflects peer pressure.

Furthermore, the IF is a figure associated to a journal, counting several articles, which are not all cited at the same rank. How can this IF be used to evaluate an individual production?

More recently, a new set of ‘normalized’ citations have been proposed to replace the IF.³ They are also based on a citation item and are therefore subject to the same criticisms.

We have advocated considering the number of article downloads as the most important among the various metrics used to rank the scientific publications.

Although both citations and downloads measurements may be complementary assessments of journals covering scientific news in wide scientific communities, we argue that the number of downloads provides a much more accurate idea of journals reporting progress made in new emerging fields, which are not yet attracting the attention of large numbers of researchers, for many different reasons including the effect of “fashion tendencies” on financing fundamental research.

The graphical representation of both number of downloads and impact factor of JCCS over the years (see Figs. 1 and 2)⁴ showed an impressive acceleration of downloads while the variation of the IF did not match that of readership.

The good afflicted by the bad

Running a journal is not only a source of great joys and satisfactions.

As we have mentioned above, academic publishing is strongly dependent upon earnings considerations that may affect the spirit of free communication while sharing is supposed to be the main upstanding driver of scientific research.

We will briefly examine below a few aspects of two profound transformations that occurred in the publishing realm since JCCS was created.

The frenetic rise of scientific publishing

The considerable increase in the number of publications resulting from financial incentives has had a negative influence on the quality of published articles.

It is well known that a subset of scientists from emerging countries experiencing retribution by their hospitals and universities are eager to see their work published in established journals with no concern about the cost of quality that is usually attached to research articles. Along this line we

³ See for example: Normalized Citation Indicators subject guide. Maastricht University. Online library. 2023 <https://library.maastrichtuniversity.nl/research/evaluating-research/normalized-citation-indicators/>

⁴ We were proud to hear in June 2023 from Springer that JCCS was ranked among the 22% of 1705 Transformative Journals who met their annual OA content growth targets.

have witnessed over the past years an upsurge of “pseudo-scientific predatory” journals ignoring ethics and attracting authors on the hunt for a home to publish their work, without critical reviews that would delay or question their results.

The outcome of these tendencies is an overloading of the various database capacities with unreliable data that are polluting the referencing systems.

At the same time, regular publishing houses willing to increase their earnings are engaged in a race against time to become the owner of the mostly cited journals.

Thus, the numbers of articles indexed in scopus and web of science were reported to have increased by ~47% in the past year (Hanson et al. 2023).

The combination of these factors translated into an inflation of the reviewing needs and an ensuing pressure that outpaced the capacities of scientists accepting to work graciously for the publishers. The escalation of the scientists’ workload pressure has recently been qualified as a “strain on scientific publishing” (Hanson et al. 2023).

Solutions proposed to help in assessing the scientific production of researchers are extremely difficult to apply and manage because of the fundamental conceptual opposition existing between the publisher’s profit and the altruistic commitment of reviewers acting to provide unbiased evaluations meant to help progress shared by all and useful to all.

The growing awareness of this dissatisfying situation by the parties who are at stake will hopefully end up with a path to evaluate the scientific production and peers’ recognition of individuals based on their true involvement and participation in the diffusion of our knowledge progress. Along this line, it is worth mentioning that Springer Nature and other publishers have recognized for some time the need to consider multiple measures to assess researchers’ performances. Also of note is the decision of Web of Science to strip some 5 open access journals of coveted impact factors (Brainard 2023).

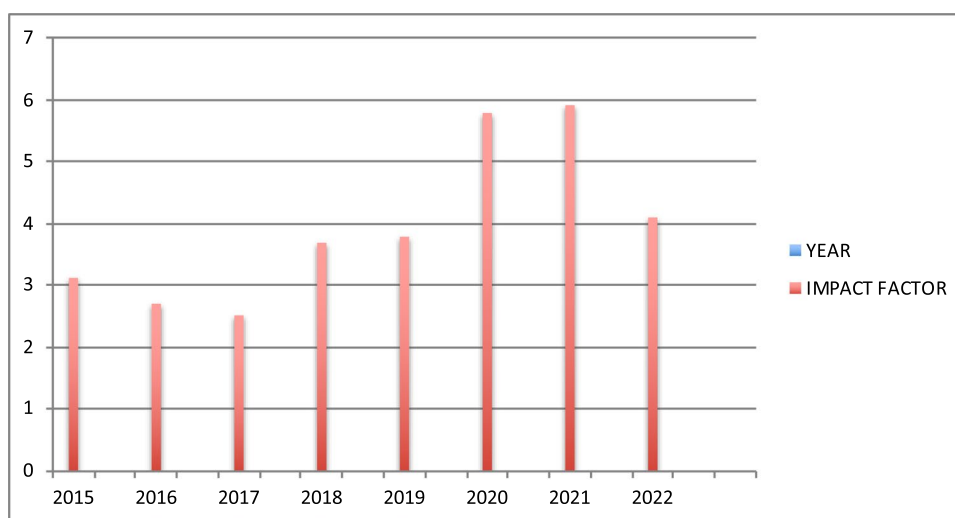
The threat of artificial intelligence

Over the past years, we have witnessed a kind of human resignation induced by the acceleration of data processing applied to situations that should still involve manual interventions, as will be shown in the two following examples.

A few years ago, an unexpected situation popped out when the name of a scientist who “fell out of the blue” was wrongly assigned the authorship of an article in place of the true author. This “unidentified flying object” could only be detected by us upon the publication of the article in a printed issue of JCCS. The “pseudo-author” claimed that he was not aware of this mistake and did not even noticed that “his” article had been indexed on PubMed. We had a very hard time to get this error corrected.

Fig. 1 JCCS Impact factor evolution from 2015 to 2022. The IF values were calculated by Clarivate as mentioned in the Text. We were informed that all publishers experienced a slight decrease in their IF scores for 2022 due to a normalization of Clarivate policy

YEAR	IMPACT FACTOR	BASED ON: YEAR OF CITATION FOR ITEMS PUBLISHED IN
2015	3,123	2015 FOR 2013+2014
2016	2,705	2016 FOR 2014+2015
2017	2,516	2017 FOR 2015+2016
2018	3,691	2018 FOR 2016+2017
2019	3,788	2019 FOR 2017+2018
2020	5,782	2020 FOR 2018+2019
2021	5,908	2021 FOR 2019+2020
2022	4,1	2022 FOR 2020+2021



This unfortunate type of events, revealed the analytical weakness of a few humans unable to distinguish between an ethical problem and a breach of intellectual property. Even though we were grateful to the upper management who, after being informed immediately took action and got the mistake corrected, we reached the disturbing conclusion that none of the sophisticated tools used by Springer had proved useful and we were sadly informed that this type of publishing mistake may still occur.⁵

On another ground, the acceleration of some author's attempts to publish forged manuscripts became a huge concern for Springer and other established publishers. Fortunately, to our present knowledge, JCCS did not experience such situations.

Even though the efforts developed by the *Committee on Publication Ethics (COPE)* of which Springer is a member, proved helpful in some instances, they could not fully avoid the overflow of articles reporting manipulated and/or fabricated data that spread over a great majority of well-established journals.

⁵ Moss Steve. Publisher Correction: AI, ChatGPT and objective reality MRS Bulletin (2023) MRS Bulletin <https://doi.org/10.1557/s43577-023-00554-z> This article was updated to correct missing author name in the PDF of the article.

YEAR	DOWNLOADS
2013	19163
2014	17112
2015	19976
2016	37806
2017	50620
2018	52927
2019	57336
2020	70669
2021	107029
2022	143744
2023/08 until August	142080

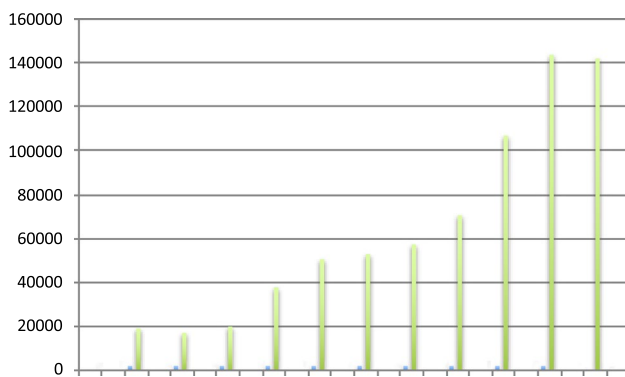


Fig. 2 JCCS downloads evolution from 2013 to 2023. The numbers of JCCS yearly downloads were provided by Springer Nature. The number of downloads for 2023 only refers to the first 8 month of the current year

Thanks to the early work of Retraction Watch,⁶ thousands of fraudulent manuscripts were retracted by key publishers in the past few years, because they were presenting flawed and/or fabricated data that had went through the evaluation of Editorial boards.

The stone was thrown at the editorial board members who were accused of being lax, or even lacking integrity.

As a staunch defender of scientific integrity, I have been stunned by the number of falsifications that have been retracted.

⁶ As reported in Wikipedia “In 2011, Oransky and Marcus pointed out in Nature that the peer review process for scholarly publications continues long after the publication time.[5] They were motivated to launch Retraction Watch to encourage this continuation and to increase the transparency of the retraction process”.

However, in the context described above, one must recognize for the defense of the reviewers who were fooled by tampered data, that it is not easy to detect such dishonest practices when they are carefully made up and included by the side of real results in what seems to be a convincing manuscript. Senior scientists, in charge of large Institutes have even been accused of laxity or even complicity, when results examined by the retraction watchdog journalists⁷ brought to light manipulated and fraudulent pieces of data in articles endorsed by senior authors. For the individual who has worked in a laboratory, it is easy to conceive how such falsifications committed by members of their teams, could escape the review of senior authors, overloaded by other duties, who are not fully aware of all experimental details and fell into the pit.

We expect the situation to amplify with the use of Artificial Intelligence (AI) programs, that despite their positive applications in scientific publishing are also an unhealthy carrier of drifts driving potential negative effects that have been widely discussed in the specialized press [see for example Alser and Waisberg (2023)].

“There is increasing concern and consternation about generative artificial intelligence (AI) programs and its potential impact on academia ... a prime concern is its implications for facilitating plagiarism” (Dien 2023). This is indeed a very serious concern, despite the considerable potential help that AI can bring to academic publishing, if we are unable to discriminate between human-written and AI-generated articles.

The main question will remain to curb the exaggerated use of AI to mislead and abuse the reviewers and publishers.

One could argue, on the contrary, that the use of a powerful tool such as AI applying “deep learning techniques” would have led to a quick resolution of the situation which lasted for several years.

The human JCCS Editors have been warned that articles written by AI may be difficult to be identified as falsified, manipulated, or fake manuscripts (see for example, Smeds et al. 2023). All of us are presently expected to provide a critical analysis of the manuscripts and checked that decisions taken are in line with the publication standards required for publication. I personally fear that exaggeratedly relying on AI will lead to an heightened amount of plagiarism and to the publication of increasingly unvetted information. As stated in a recent Springer digital report,⁸ “A clear

⁷ Crossref acquires Retraction Watch data and opens it for the scientific community <https://www.crossref.org/blog/news-crossref-and-retraction-watch/>

⁸ The State of Open Data 2023 (p26). Published on line in November 2023. <https://www.springernature.com/gp/researchers/campaigns/state-of-open-data>

risk of generative AI for research publishing more generally is the potential for paper mills to create fake articles much more quickly and easily than was previously possible”.

In a communication reported by Retraction Watch, A. Mitchell⁹ is said to clearly voice the problem as follows: “Problematic content affects the whole of the academic publishing industry. It can be the result of genuine human error or systematic attempts to subvert the publication process. The publication process is inherently based on trust and, unfortunately, this has led to unethical individuals and groups working to exploit the process through the use of inauthentic content, peer reviews or identities. These subversion efforts are becoming increasingly sophisticated, and now increasingly involve the use of artificial intelligence technology”.

I have myself recently experienced a situation in which the data presented in a manuscript submitted for publication in a field where I specialized, looked suspicious. Checking the whole submission over the power of AI tools took me several hours and lead me to the very sad conclusions that the fabricated manuscript was a plagiarism of AI published information. The significant amount of time that I had wasted could have been used much more positively. The publishers must consider these troublesome aspects even more seriously to avoid a crash of the whole scientific academic publishing.

When the good overwhelms the bad

Fortunately, fighting for the recognition of JCCS was the source of great satisfaction.

The aims of JCCS grew up and diversified, while maintaining a marked relationship with the biological properties of the CCN family of proteins whose central signaling function have been appreciated. As the progress made towards a better understanding in the biology of the CCN proteins uncovered the complex array of intertwined pathways in which these regulatory factors were acting. We proposed to make JCCS the reference medium for hosting CCN proteins-related publications and to consolidate the CCN field (Perbal and Perbal 2016).

The expansion of JCCS topics initiated in 2019, occurred in parallel with the widening of the ICCNS areas of interest, resulted in a striking increase in JCCS readership.

Stimulated by the good results and the international scientific recognition of JCCS as a source of reliable new information, and following the advice expressed by our Editors at the 11th workshop on the CCN family of Genes in October 2022, we have taken advantage of the possibility opened by our original contract with Springer, to undertake a transition to Wiley and become a gold open access journal. The first

issue of JCCS published by Wiley will be the Volume 18, in continuation of the series that began 17 years ago with Springer.

Before closing the curtain, I would like to particularly thank, all the members of our editorial board who followed us in our new venture and expressed their strong support and faith in helping us to navigate and ensure the continuity of JCCS publication, through the turmoil initiated by the misbehavior of one of our editorial board members last year.

It would probably take pages to thank all those at Springer who supported us and recognized the necessity and value of the genuine integrity that was demonstrated by all our collegial Editors. This was the key of our humble success.

I would like to thank particularly Peter Butler, initiator and fervent supporter of our various initiatives, who obtained from Springer a financial support for the International CCN Society of which JCCS was and remains the official journal. In addition to his encouragements for JCCS to enter the realm of high level research reporting, Peter was the one to introduce with myself the honorific Springer ICCNS award offered to worldwide known scientists who accepted our invitation to spend time with us at our International Workshops on the CCN Family of Genes (see <https://ccnsociety.com>). Peter also provided the Society with fellowships given to selected young student giving outstanding presentations.

On behalf of the whole Editorial Board who have followed us to Wiley, and helped, “thank you again, Peter”.

This farewell editorial would not be fair without the acknowledgement of all Editors and Associate Editors who spent a great amount of time critically analyzing the submissions that had been previously triaged by myself and Annick. They had to deal with heavy procedures tailored for publishing professionals, but not easily accessible to volunteer users who in some cases found them terribly heavy to manage, in addition to their load of duties.

I would like to acknowledge all the members of our scientific and production teams who participated actively to the publication of nice printed issues, and the Publishers at Springer for their help and support.

I am sorry that I can't cite all those who, during 17 years, have accompanied us both in the bumpy and highly satisfactory journey, and who were doing their best to help us in fighting the competition and rising JCCS to a very decent level. You are all present in my thoughts.

My last thanks will be directed to Alison Mitchell, Jacco Flipsen, presently Springer Vice-President, *Medicine and Life Sciences Journals*, and former Springer Vice-Presidents Bill Curtis and Jamie Hutchins, for their support and help to go over difficult situations and for trusting our ability to drive JCCS to its present recognition.

Last but not least, all our colleagues attending the CCN workshops and sharing part of our private life will not be

⁹ Former Editorial & Publishing Director at Springer Nature.

surprised that I kept my most sincere and genuine thanks to my wife Annick whose daily support and encouragements have been pivotal in fueling my commitment and dedication to JCCS and ICCNS.

See you all at Wiley !

Acknowledgements Once more, I wish to express my deepest gratitude to Professor Herman Yeger for his genuine friendship and his critical review of this Editorial.

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