Sci

Editorial

Sci: An Inclusive, Multidisciplinary Scientific Journal

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Abstract: *Sci* (ISSN 2413-4155) is an international, open-access journal that covers most fields of scientific research. It has set out to challenge the conventional single- and double-blind peer review processes by adopting a post-publication public peer review (P4R) model. The model faced some difficulties with indexing and archiving services, prolonged the peer review process and its transparency received some opposition. It was therefore necessary to revisit the P4R model and modify it, resulting in the hybrid model (P4R hybrid) which is implemented in *Sci* today. *Sci* remains open to the whole scientific community as an inclusive and multidisciplinary scientific journal. In this context, we present you with six valuable contributions to the first Special Issue of Feature Papers Editors Collection 2020. The topics of the contributions address relevant and compelling issues ranging from data protection, material science, COVID-19 to the environment and climate change.

Keywords: atmospheric CO_2 concentration; coordination polymers; general data protection regulation; global warming; post publication public peer review; single- and double-blind peer review; soil management; temperature; urban sprawl

1. The Journal *Sci*

Sci (ISSN 2413-4155) is an MDPI international open-access journal that covers most areas of scientific research. It was established in March 2018 to bring transparency to the internal workings and mechanisms of the so-called black box of peer review associated with single- and double blind models [1]. In March 2019, *Sci* adopted the post-publication public peer review (P4R) model [2]. The initiative was a reaction to the literature underscoring concerns about the single- and double-blind peer review systems. It is argued that such models are, by nature, secretive and subjective and, therefore, restricted and restricting. With the P4R, transparency was sought by allowing the manuscript submitted, prior to peer review, to be readily available on the journal website. Interested members of the scientific community could then volunteer to review the manuscript and the number of reviewers was not specified so as to provide less bias and more involvement. Subsequently, the authors would amend their manuscripts according to the reviewers' reports and the editor would eventually decide whether the manuscript should be accepted or rejected. Rather than scientific significance and the impact of the manuscripts, which may not be possible to judge *a priori*, the acceptance criteria were based on scientific soundness and proper reporting. In any case, the review reports were also available to the public alongside each manuscript together with the names and affiliations of the reviewers. It was envisioned that *Sci* may become one of the first scientific journals to implement a star-rating-like tool where the entire scientific community could engage freely and openly in deciding the value and scientific significance of a manuscript after publication [3].

Certain practical drawbacks required us to revisit the P4R model in 2020 and to slightly modify it to a more efficient hybrid model which is used today. Firstly, allowing submitted manuscripts to show up directly on the journal website led to some mix-ups, although the versions were carefully labeled, whether peer-reviewed or not. This issue was amplified during the peer review process when several versions of the same manuscript

started circulating the internet, and also in the indexing and archiving services covering *Sci*. Perhaps the most challenging issue here was how to deal with these versions when the manuscript had to be rejected. Some authors argued that the manuscript was *de facto* published and un-rejectable. There was a gap between how the P4R would unfold in *Sci* and the conventional archiving and editorial systems which are designed to accommodate single- and double-blind peer review models. An intermediate platform ought to host the manuscripts submitted until they are peer-reviewed and accepted. This would preserve the originality of the submission and provide immediate visibility while resolving the archiving logistical mess.

Secondly, the peer review process was necessarily longer. Although *Sci* provided immediate visibility of the manuscripts submitted after a brief editorial check, reaching the accepted version took up to 16 months. Though the number of reviewers was not specified, no submission had more than four reviewers. Disappointingly, the issue at hand was a lack of suitable volunteers from within the scientific community willing to review manuscripts. It indeed prolonged the process and, eventually, in some cases, led the editorial office to invite suitable reviewers from *Sci*'s editorial scientific board instead of waiting for volunteers. It looked to us as if a wider engagement required much wider publicity and interest, or perhaps a financial incentive in the form of tokens one may use to waive article processing fees, as is quite common today as a reward for reviewing manuscripts. As a consequence, we had to switch to the hybrid P4R model in 2020 to align our cherished peer review volunteers with a process of inviting reviewers in order to optimize the duration of the review process.

Thirdly, some reviewers preferred to remain anonymous and some authors objected to sharing the review reports of their manuscripts. In the P4R model, the transparent design meant that the names of the reviewers and their review reports became readily available with each manuscript, and their review may also be rated by other readers as being useful or not. The anonymity of the reviewers was, indeed, a delicate and just concern especially for younger colleagues. Yet simply withholding the review reports would bring us again to the issues of traditional secretive reviewing we had set out to resolve in 2018. As a compromise, the names of the reviewers and the review reports became optional in the P4R hybrid.

In November 2020, the P4R hybrid model was introduced [4]. Figure 1 compares the main differences between the single- and double-blind, P4R and P4R hybrid models. Firstly, submissions to *Sci* are now being published on MDPI's *Preprints* service until the paper has been accepted or rejected following peer review. *Preprints* itself is a multidisciplinary, open access, non-profit, cost-free online platform. Like *arXiv* and *ChemRxiv*, *Preprints* is an online repository with a specific archiving structure designed to accommodate manuscripts before peer review and is compatible with the publishing policies of several international publishers, including MDPI. Moreover, authors can choose to render their results and findings available and reusable by the scientific community prior to peer review. This partnership between *Sci* and *Preprints* resolved the archiving and indexing difficulties and meant that the journal would be on the right path to acquiring scientometric indices. Secondly, the volunteering option has shifted from choosing to review a specific article to volunteering for reviewing in *Sci* as a journal. The editorial office would then validate the reviewer's credentials and assign their scientific expertise to a suitable manuscript. This process accelerated the process of allocating suitable reviewers and served as a quality control against low-quality reviews, bias and any behind-the-scenes nominating activities. As mentioned already, the identity of the reviewers and sharing the review reports has become optional. The P4R hybrid model is more flexible than its predecessor and can accommodate the needs and demands of various authors and readers. Authors who are accustomed to the traditional peer review systems can still submit to *Sci*, and also those who wish to exploit the full potential the P4R hybrid model can offer.
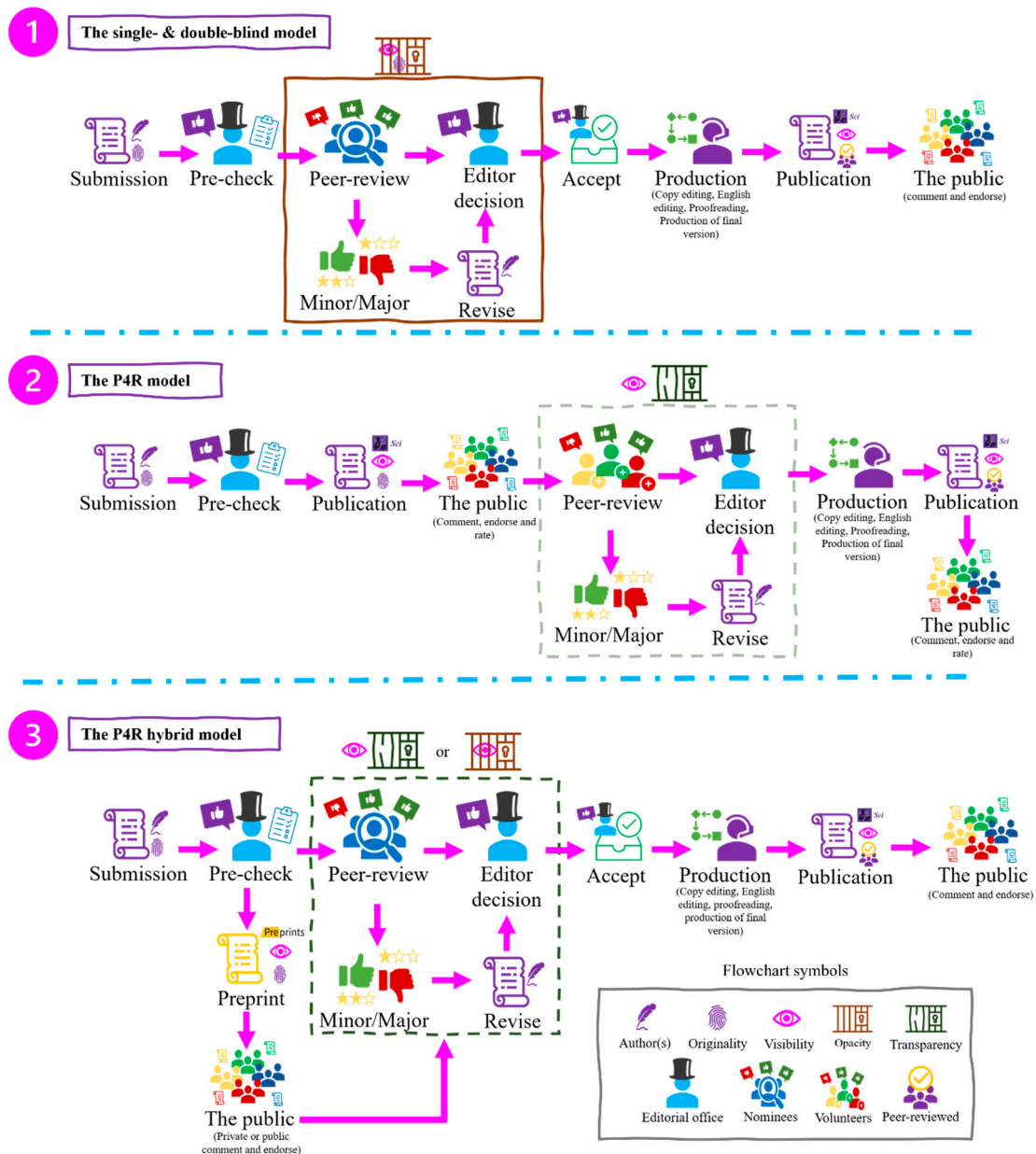
Figure 1. The three panels represent the workflows of the single- and double-blind, P4R and P4R hybrid models, respectively. The panels illustrate the differences in the peer review processes from submission to final decision in terms of transparency, preserving originality, visibility and community engagement. (adopted, with permission, from [3]).

Sci remains open to the entire scientific community as an inclusive and multidisciplinary scientific journal. The broad scientific scope of *Sci* and its publishing criteria, including scientific soundness and proper reporting, together with the P4R hybrid model provide a welcoming environment for authors who are fed up and weary of the rigid and sometimes arbitrary single- and double-blind peer review systems. *Sci* wishes to foster an atmosphere for collaborative, inter- and cross-disciplinary research to tackle the main challenges facing us today, such as energy, food, water, climate, and health.

In this context, we would like to present to you in the following section the valuable contributions to the first Special Issue of Feature Papers Editors Collection 2020. Furthermore, two particular developments occurred while editing this Special Issue. Firstly, the P4R model and *Sci* in general were subject to an experiment by diligent researchers interested in diagnosing the pathologies of the scientific publishing landscape [5]. Secondly,

Prof. Dr. Michael McAleer (1951–2021), a dear colleague and an avid supporter of *Sci,* sadly passed away [6,7]. Michael was battling with a fatal illness and left us during the peer review process of his contribution to this Special Issue. As a sign of respect and in honor of Michael, we have therefore opted to publish his manuscript in its original form. Rather than tampering with his words and thereby meddling with the original text, we have simply kept his words and added the comments of the reviewers so colleagues may appraise the scientific content. In the subsequent section, we present to you the valuable contributions from the first "Feature Papers Editors Collection" Special Issue, and in the last section, we briefly conclude.

2. The Feature Papers Editors Collection 2020 Special Issue

The decision to establish an annual Special Issue in which the scientific editorial board of *Sci* shares its expertise through featured high-quality contributions was reached to support and promote *Sci*. The landscape of scientific publishing and communication is moving on rapidly. Pioneering approaches aiming to challenge and change the *status quo* can easily go unnoticed. We therefore opted to reach out to our colleagues in the editorial board and the 2020 edition was a considerable success as judged by the numbers of citations, views and downloads.

The topics of this Special Issue are highly relevant and address compelling issues ranging from data protection, material sciences and COVID-19 to the environment and climate change. In May 2018, the Right to Erasure (Right to be Forgotten) entered into force in the European Union. Accordingly, organizations must identify, locate and delete personally identifiable information, after the contractual period has expired and where a valid request is received from the data subject. Kelly et al. set out to evaluate the implementation and role of the Right to Erasure and demonstrate that compliance is achievable with a hybrid cloud environment [8]. In the context of material sciences, Baumgartner et al. report on a new approach to process coordination polymers of iron(II) and 4-amino-1,2,4-triazole (NH_2trz) [9]. They show that co-processing the brittle and difficult to handle $[Fe(NH_2trz)_3](2ns)_2$, with ultrahigh molecular weight polyethylene (UHMWPE) enhances the flexibility and mechanical properties of the polymer. In terms of the ongoing COVID-19 pandemic, Professor Michael McAleer (1951–2021) addresses the phenomenal impact of the disease on research output in medical and biomedical sciences [10]. The manuscript samples publications from the *Journal of the American Medical Association (JAMA)* published within a period of two weeks in late July and early August 2020. The short review summarizes and highlights 44 articles covering several highly topical issues in the COVID-19 era ranging from public health, general medicine, internal medicine, pediatrics, oncology, geriatrics, and biostatistics.

The environment and climate change have taken a central focus in this Special Issue. In their manuscript, Navarro-Pedreño et al. question the validity of randomly supplementing the soil with organic material to counteract global warming [11]. The soil is a major player in the global carbon cycle; it is a carbon sink which is in a constant exchange, releasing and sequestering CO_2 to and from the atmosphere. Breaking the natural balance by external addition of organic material without taking account of the soil's characteristics, such as temperature, moisture, chemical composition and microbial life, would result in an increased release of CO_2 and CH_4, eventually worsening global warming. Eventually, the authors draw careful recommendations and perspectives on tampering with the natural balance of the soil which is a major player in the global carbon cycle. They conclude that adding organic materials to the soil should integrate adequate knowledge about the soil itself and specific environment or climate and related practice management and socioeconomic factors. Further discussing the global carbon cycle and climate change, Koutsoyiannis et al. complement the controversial causal debate between global temperature and atmospheric CO_2 levels with the metaphoric "hen-or-egg" problem [12]. Are the increased levels of CO_2 emissions warming up the planet, or is it the other way around? Gathering data about the relationship between global temperature and atmospheric CO_2 levels during

the period 1980 to 2019, they conclude that the increased temperature increases the CO_2 concentration rather than *vice versa*. They propose a mechanism by which the increased global temperature leads to an intensification in the metabolic activity of microbial life and hence, increasing levels of natural CO_2. The authors also warn against trying to reduce complex problems in complex systems to simplistic and trivial explanations. Onilude et al. provide urban planners and environmentalists with a perspective on the change in land use in Lagos, Ogun State, Nigeria by 2030 due to residential areas. The authors model datasets from the GlobeLand30 between the years 2000 and 2010 to produce predictive maps to assess for the change in cultivated land, grassland, shrubland, wetland, and waterbodies. The findings can be utilized by regulatory bodies to control and manage the urban sprawl and to protect and mitigate its environmental consequences [13].

3. Concluding Remarks

It has been an eventful period for *Sci*. The P4R model has removed many of the barriers set by the conventional single- and double-blind peer review systems. Then again, it also had its shortcomings. The new P4R hybrid will continue to offer authors immediate visibility, transparency and fairness whilst maintaining the highest standards of quality peer review. Manuscripts remain to be judged based on their scientific soundness and proper reporting. Their value is decided upon by the scientific community after publication.

The series of the Feature Papers Editors Collection Special Issues continues. In 2021, *Sci* had ten such manuscripts online and seven under consideration [14–23]. In the Feature Papers Editors Collection 2021, we are also launching the "*What's it about?*" initiative, in which authors provide a concise summary of their contributions rendered towards non-specialists and the more general audience. In this context, we would like to alleviate language-based barriers and promote a culture inclusive to the public, just as we have done with the P4R model, in which we aimed to remove barriers to open and transparent reviewing. Our move is therefore hoping to foster a much better collaborative atmosphere among the scientists and experts from the various disciplines covered in *Sci*. So, in the Feature Papers Editors Collection series, the summaries of the contributions are expected to be in a digestible language narrated directly from the authors to the readers. To complete our efforts, we are also happy to announce that the third Feature Papers Editors Collection, Feature Papers—Multidisciplinary Sciences 2022 (https://www.mdpi.com/journal/sci/special_issues/FPMS2022, accessed on 15 February 2022), is open and welcoming your submissions until 31 December 2022.

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