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Consolidating Institutional Repositories in a Digital, Free, Open Access Publication Platform for *All* Scholarly Output

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Abstract

Funders increasingly mandate researchers to publish their scientific articles in open access and to retain their copyright. Universities all over the world have set up institutional repositories and use repositories for the preservation and dissemination of academic production of their institutions, including scientific articles, reports, datasets, and other research outputs. However, in general, authors do not find institutional repositories very attractive and accessible as an open access publication platform since repositories and open access are not part of the rewarding system. We expect that researchers are more likely to publish and deposit their scientific papers in a repository, once they have the appearance, recognition and dissemination of a scientific journal. That is why we took the initiative to set up a repository based journal 'University Journals' in which universities collaborate. The paper will explain the *University Journals* project and how the involved universities want to facilitate a valuable alternative publication platform that complies with Plan S principles and enables publication and dissemination of all research outcomes. By establishing *University Journals* as a publication platform, university libraries are instrumental (and crucial) in achieving the ambitions of Open Science, and universities gain control over the publication process.

Keywords: university; open science; open access; publication platforms; future of scholarly communication

1. Introduction

The initial idea to set up *University Journals* (UJ)¹ came from the chairman of the Research Advisory Committee of the University of Amsterdam (UOC), who was also the chairman of the working group on Academic Integrity (that advised the Executive Board of the University of Amsterdam on integrity policies, research culture and scientific practice). During that period, he saw the adverse effects of the current academic publishing system, which is mostly out of the hands of the universities and completely determined by the academic publishers. The publishers determine what they publish, under what terms and conditions, against what price and in which publishing venue ('cascading journals') and not unimportantly when. The result is a system affected by questionable research practices and publication bias, beyond the control of authors and universities. In many cases publishers still require transfer of copyrights, set the prices (be it open access fees or subscriptions) and publish in general only articles with positive results that are

novel and will probably improve the impact of the journal. It is often said that the oligopoly of the publishers (e.g. Larivière, Haustein, & Mongeon, 2015) and the lack of control by authors and institutions becomes extremely clear now, because funders increasingly have open access mandates and require authors to retain their copyright. The traditional system makes it extremely difficult for authors to comply with these open access mandates.

Researchers are willing to share their knowledge but are commonly tied to the traditional scholarly communication system based on print. When libraries and researchers can control, at least, a large part of their production, the real open access to knowledge could be more than a philosophical dream and democratic will. This might be possible by taking control of the universities' production through repositories. *University Journals* is a strong attempt to achieve that goal, in a context where open science is looking for new business models and platforms to make this happen.

The idea of a journal or platform based on repositories is not new (Riddle, 2015) as the example of Huddersfield University Press shows (Stone, White, Robinson, Pitchford, & Edmunds, 2012), nor is the idea to use it for different output types such as software (Couto, Ribeiro, & de Campos, 2015). A similar conceptual overlay platform model is for example Pubfair, a distributed framework based on the COAR Next Generation Repositories (Ross-Hellauer, Fecher, Shearer, & Rodrigues, 2019). That this model can be successful has been demonstrated by overlay journals like Episciences², Review Commons³ and CSIC Overlay Journal⁴; or for example discipline based libre open access platforms such as the 'European Open-Access Publishing Platform for Psychology' hosted by the Leibniz Institute for Psychology Information in Trier⁵. Compared to these developments the added value of *University Journals* is a collective action of the universities based on their institutional repositories, with the aim to share as many research outcomes as possible (regardless of the type of output), within a couple of days or weeks, and with quality assurance. The research outcomes will be published by discipline and indexed by international search engines.

2. Hampering Open Science

Traditional publishers do not only hamper open science due to closed access policies. They also hamper open science because they only publish peer

reviewed articles and some books. Some new publishers and platforms like the Wellcome Open Research⁶ and Gates Open Research⁷ (based on the F1000 Research⁸) do publish, for example, Data Notes and Software Tool Articles; and the F1000 and Gates Open Research also documents, posters and slides. Others offer platforms for journals, books and conference proceedings, such as the ARPHA Platform⁹. Despite these initiatives a large part of the academic output is still invisible, because publishers are generally not interested in publishing other types of output such as reports, data, software, protocols, etc. It is also striking that the other types of publications are not indexed in the same way as peer reviewed articles in established abstract and citation databases, and by search engines and indexes, such as Google Scholar, Web of Science, Scopus, and the Directory of Open Access Journals. Except for some data journals, and more recently software journals and for example videographic essay journals, at the moment, still most publishers do not publish publications other than peer reviewed articles. The consequences are that it is impossible or at least very difficult for an academic to receive credits for the merits of their other types of works (Farnham et al., 2017; McKiernan et al., 2016; Working Group on Rewards Under Open Science, 2017; Wouters et al., 2019).

The advantage of the current system is that the copyright of these other works (reports, data, etc.) has not been transferred to the publisher and is still in the hands of the academic or university. Academics can make use of the repositories to provide access to their other types of work. However, authors seldom make use of institutional repositories. The number of archived peer reviewed publications is still very low. For example, Björk et al. (2010) found only 11,9% of all publications in repositories and on web sites, of which only one out of four green copies in institutional repositories. Archambault et al. (2014) found in all kinds of repositories 5,9% and Piwowar et al. (2018) 4,8% (based on Crossref), 11,5% (based on Web of Science) and 9,1% (based on Unpaywall), but these calculations exclude gold open access archived in repositories. Authors, in general, find institutional repositories not very attractive and accessible as an open access publication platform since repositories are not part of the rewarding system. As a result, academics are not motivated to share the other results that could be valuable to others.

Other problems recognised within scholarly publishing are problems with traditional peer review (Ross-Hellauer, 2017). It is getting extremely difficult to find reviewers, especially reviewers who are knowledgeable and

independent. This is known as the peer review crisis (Fox & Petchey, 2010; Serio, 2016). Due to the anonymity of the reviewers (and with that the quality of the reviewer) the peer review is not transparent (NRC, 2016). The peer review process also has a lengthy time-to-decision (Huisman & Smits, 2017; Powell, 2016). In many cases academics have to find other jobs while articles are still under submission. The current peer review process is also inefficient, and more and more upsetting researchers, where they do it for free in an unrewarded system. New initiatives such as Peer Community In (PCI)¹⁰ and open peer review will hopefully change this. A high rejection rate sounds interesting but is in the end very inefficient: papers will be resubmitted and the whole peer review process has to start all over again. More and more, the added value of peer review becomes questionable; more than 70% of researchers who have tried to reproduce another scientist's experiments failed (Baker, 2016). For example, only 6 of the 53 landmark studies in oncology and haematology can be replicated (Begley & Ellis, 2012). Not to mention the number of retractions that is still growing (Brainard & You, 2018). The peer review process is also limited to articles. Books, data, protocols and software are only occasionally being reviewed. Another issue is that most journals select on novelty and impact, resulting in publication bias against studies with negative results and replication studies. In sum, traditional peer review may have a detrimental effect on the quality, completeness and speed of scholarly communication.

In the next section we explain how *University Journals* can help to stimulate open science and to solve the peer review crisis.

3. Enabling Open Science

Universities and authors can gain control by setting up their own collaborative publishing environment. This gives universities the opportunity to restructure the publishing process in a way that it can broaden and speed up the publishing process and will stimulate open science by getting a bit of control out of the old-anachronistic publication system. The challenge universities have to face is how to set up an efficient, high quality and sustainable publication system independent from the publishers. An obvious solution is an alternative publishing platform connected to the existing institutional repositories. This idea was first described in a memorandum called *University Journals*¹¹.

Most universities have an institutional repository that they already use to publish their own materials (such as reports, inaugural lectures, PhD theses and, when possible, publications and papers coming out from their university) or to provide access to materials of publishers (such as journal articles, books or book chapters). However, authors do not take full advantage of these institutional repositories, they do not have time to care about self-archiving or they misunderstand the value of the repository as such. Many find them not attractive and accessible, in part because deposits in repositories are not credited in the same way that journal articles are. That is why the *University Journals* publishing platform is built on journal technology but is not structured like a traditional journal or university press. *University Journals* is not based in a single university or press but will have a consortium model, with central community-based collaborative action publishing from the distributed institutional repositories. In this way, the universities will not compete but collaborate. Additionally, whereas most of the university presses focus on books and journals for the Humanities and Social Sciences, *University Journals* will cover all disciplines and all types of research output. It is to be expected that researchers are more likely to publish and deposit their scientific publications in a repository, once they have the appearance, recognition and dissemination of a scientific journal.

Initially, thirteen universities¹² from four European countries have started a collaboration to set up *University Journals* as an alternative open access publication platform to the current journal system that often requires authors to transfer their copyright, or charges Article Processing Charges (APCs). The universities are now collaboratively setting up a publication and dissemination process in which management and editorial tasks will be delegated to the libraries. The repositories of the universities will be connected to a single platform. When a scientific publication in a repository is submitted to and accepted by *University Journals*, the output will be automatically transformed into a publication in this newly accredited platform. But researchers will also be offered the possibility to submit directly to *University Journals* (step 1 in Figure 1). By building on the existing repository infrastructure and publishing expertise of the participating universities, *University Journals* requires modest resources, while the journal format will help ensure the commitment and acceptance by academic authors. The platform can co-exist with other journals, including commercial ones. Academic and research libraries will gain control of the publication and dissemination process on behalf of the authors and institutions.

University Journals will be owned and operated by partner universities. Management and editorial tasks will be distributed. The costs of the common infrastructure can be shared among participating universities and possibly other stakeholders such as national funding agencies and governments. In December 2018, the project received a starting grant from the Pica Foundation¹³ to develop *University Journals*. A first (beta) version of the platform is scheduled to be online by June 2020. There is an open invitation for other universities to join the collaboration.

The *University Journals* project can also stimulate open science practices. The aim is to provide a home for all academic output. All research output (reports, datasets, tests, protocols, methods, software and other research products) can be published quickly and fully in *University Journals*. *University Journals* is born to be FAIR (Findable, Accessible, Interoperable and Reusable). FAIR was initially defined for data (Wilkinson et al., 2016). The advantage is that all types of publications will be indexed in the same way in the established abstract and citation databases, with current search engines, and copyright and ownership of all research outcomes will remain within the universities and will get an open content license. The only limitation is that it conforms with formats that *University Journals* can handle (PDF, XML, etc.). Also negative results (e.g., when statistics show no difference) and replication studies can easily be published and credited. And although *University Journals* is a single publication platform, it will be given the appearance of various community based digital journals, organised by discipline and university. All publications will get a DOI to be easily cited. *University Journals* will also link to related works, for example a proposal, pre-registration, articles, data and software. Additionally, all publications in *University Journals* can get quality marks for transparency (Nosek et al., 2015) and sound science. With the DOI, with links to related works and with their quality marks, researchers can get credits for all their research products. In this way, it will help to provide a modern scholarly communication platform as demanded in the transition to open science.

4. Novel Innovative Transparent Quality Assurance

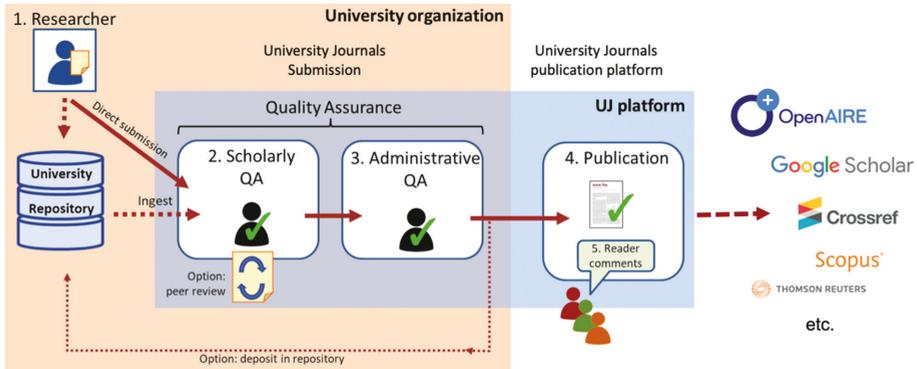
Instead of traditional peer review, *University Journals* will feature a novel and innovative quality assurance strategy that streamlines submissions, puts

researchers and universities in control and aims to deliver fast and predictable publication of all kinds of research products. Quality assurance means that within the university all submissions will be subjected to rigorous quality assurance checks based on existing best practices (i.e. COPE¹⁴) and operated by the universities themselves (steps 2 and 3 in Figure 1). In a recent interview, the Nobel laureate Matthews (2019) emphasises the importance of this internal review process. The models for quality assurance will depend on article type. The system is based on trust and gives universities control over their publications. Responsible university personnel are mandated to decide between internal and external review, or no review at all, dependent on local and discipline specific policies. For full reader transparency, the final published article will show a badge or a label to indicate to which type of quality control and/or internal/external blind/not blind (peer) review the publication has been subjected to. As an option, pre- and post-publication (Eyre-Walker & Stoletzki, 2013; MacCallum, 2006; Tennant et al., 2017) reviews can be published as well (step 5 in Figure 1).

Traditional journal editors often demand novelty or impact, making publication of replication studies or statistically negative results difficult; hence the 'reproducibility crisis' (Baker, 2016; Begley & Ellis, 2012). In contrast to traditional journals, *University Journals* will publish all sound research (Poynder, 2011) on any topic: there will be no selection on subject, discipline or on how much impact the study is perceived to have. This ensures that the review is done quickly, the rejection rates will be very low and the outcome as predictable as possible. Review is based on 'sound science' criteria only, and not on novelty or impact.

This novel approach helps to mitigate issues around the sustainability of peer-review: the current demand for external (unpaid) reviewers exceeds supply and is putting the system under pressure (Fox & Petchey, 2010; Serio, 2016). Quality assurance will reduce reviewer workloads. However, authors who want to have their publications peer-reviewed can still submit their publication to a traditional peer reviewed journal or make use of a third party that performs peer review outside of the *University Journals*. The decision to let publications be peer reviewed will be left to the authors or their supervisors, dependent on how such responsibilities are mandated within the participating universities.

Fig. 1: Workflow University Journals (by Max Haring).



5. Organisational and Governance Structure

The *University Journals* will be managed by a consortium of the participating organisations. All university partners will be members of a foundation or another legal entity. All members of the consortium will have voting rights. An executive or governance board will be elected. The board will make strategic, financial and hiring decisions. *University Journals'* governance board will possibly consist of researchers and senior library, legal and financial staff.

New partners can join *University Journals* if they show dedication to the project's aims and scope. The executive board will decide on a request to join, including on the financial implications (if any). The board will also set a policy for when members do not adhere to the *University Journals'* principles or fail to meet quality thresholds. Members may also terminate their involvement voluntarily. After termination all articles available on the *University Journals* platform will remain there, the partner university is free to publish the content elsewhere as well.

Day-to-day management is with the *University Journals* team, who may or may not be based at a partner university. The central *University Journals* team will be small, as most work and responsibilities will be distributed over the participating universities. The central team will manage the platform, take

care of the operation, administration, marketing and coordinate the technical development.

At the participating universities editors and administrators will be appointed. Within certain limits, each university can set its own standards. *University Journals* editors and administrators will handle the scholarly and administrative quality assurance, advocacy and engagement. Both scholarly and administrative quality control will only handle material from their own university or institute. They will also encourage researchers to use the service.

6. Advantages for Authors and Institutions

University Journals provides researchers with a convenient, fast and flexible route towards an indexed journal publication. For authors *University Journals* aims to provide a high-quality, reviewed, open access infrastructure for scholarly articles and other products of research. Advantages of *University Journals* are that authors will not have to 'Pay-to-Publish', will retain copyrights, and that any publication will be accepted when the publication is scientifically sound (also reports, protocols, data, software, etc.). As an additional advantage the university name will give the publication its prestige. Prestige not only comes from endorsing the publication, but also from the universities themselves, having employed the authors. The result will be that authors will get recognition for all research products published in *University Journals*. The platform will be fully compliant with funder and/or institutional open access mandates. And last but not least: the journal format will help to ensure the commitment and acceptance by academic authors. *University Journals* will give credit to authors beyond the anachronistic Impact Factor, making it possible for researchers to publish in their own accredited system.

University Journals will use the existing repositories and the established international journal infrastructure to publish research outputs: not only papers, but research data, software, protocols and methods as well as any other forms of academic output. *University Journals* brings all content of the university together on a single platform, linked to existing repositories. Existing university repositories can be used to transfer manuscripts to *University Journals*. *University Journals* is owned by the participating universities but each university can set publishing policies for its own quality assurance.

University Journals gives universities their own alternative open access publishing platform linked to existing infrastructure that will be fully compliant with open access mandates such as Plan S. *University Journals* is also DORA¹⁵ compliant. It has less focus on more traditional bibliometric indicators and offers more room for the merit of the research and recognition of open science practices. With *University Journals*, universities can help their researchers to publish more efficiently and cost-effectively in open access on a high-quality platform.

7. Conclusion

The *University Journals* platform originates from the research community and explains a big and solid practical commitment for implementation of Open Science. In a transitional landscape the *University Journals* platform will co-exist with commercial journals, but with *University Journals* academics and research libraries together will gain control of the publication and dissemination process.

The *University Journals* platform will foster open science ambitions. It will enable fast and open dissemination and crediting of all research outcomes. The publication process can be fast as publications will rely on internal quality control, while (external) peer review will only be commenced when the author(s) need this for their research assessment and compliance.

With *University Journals*, authors can be open access compliant without paying a fee and the journal format will help ensure the commitment and acceptance by academic authors. *University Journals* can bring academic publishing services, libraries and its repositories close to the university with only modest resources. The infrastructure is based on the existing repository infrastructure and the costs of the common infrastructure can be shared among participating universities and possibly other stakeholders such as national funding agencies and governments. Management and administrative tasks will be delegated to the libraries.

University Journals empowers libraries and university repositories to be an instrumental and crucial infrastructure in achieving the ambitions of open science. *University Journals* is open science at “action” level and will grow

based on the will of the libraries and universities, trying to give back the control of their research communication outputs to the researchers.

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Notes

¹ University Journals project website: <https://universityjournals.eu>.

² Episciences: <https://www.episciences.org/>.

³ Review Commons: <https://www.reviewcommons.org/>.

⁴ CSIC Overlay Journal: <https://digital.csic.es/>.

⁵ The European Open-Access Publishing Platform for Psychology hosted by the Leibniz Institute for Psychology Information in Trier: <https://www.psychopen.eu/>.

⁶ Wellcome Open Research: <https://wellcomeopenresearch.org/>.

⁷ Gates Open Research: <https://gatesopenresearch.org/>.

⁸ F1000 Research: <https://f1000research.com/>.

⁹ ARPHA: <https://arphahub.com>.

¹⁰ Peer Community In: <https://peercommunityin.org/>.

¹¹ *University Journals* Memorandum, University of Amsterdam, 1 June 2018, <https://www.universityjournal.eu/Memorandum%20University%20Journals.pdf>.

¹² Vrije Universiteit Amsterdam, Universitat de Barcelona, Technische Universiteit Delft, University of Groningen, Linköping University, Maastricht University, Universidad Carlos III de Madrid, Erasmus University Rotterdam, Tilburg University, Utrecht University, Wageningen University, University of Zurich, University of Amsterdam.

¹³ PICA Foundation: <https://www.surf.nl/en/the-surf-cooperative/pica-foundation-stichting-pica>.

¹⁴ COPE: <https://publicationethics.org>.

¹⁵ San Francisco Declaration on Research Assessment (DORA) retrieved from <https://sfdora.org>.