From print to digital publishing: the radical transformation of scientific journals in the social sciences

De la edición impresa a la digital: la radical transformación de las revistas científicas en ciencias sociales

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Abstract:

Academic journals play an essential role in the dissemination and preservation of knowledge as well as giving due recognition to the researcher. This is a means of communication which has barely changed over the last few centuries, with the academic community recognizing the basic traits it had to fulfil. Since the end of the 20th century we have witnessed a radical transformation of these publications owing to decisions in academic policy, processes for evaluating the professional development of researchers, and the possibilities that the digital environment has created for releasing these publications.

Based on content analysis of the main research into this topic, the position of academic journals is analysed, with special emphasis on ones from the field of social sciences. The especially precarious situation these titles find themselves in and the urgency of incorporating international quality standards with the aim of being indexed in the most important databases are considered. At the same time, the challenges currently faced relating to necessary transformation to the digital environment are addressed. Accessibility, open access, new resources such as added value, business models, impact measurement, and behavioural changes in researchers are issues considered and reflected on in order to propose actions that will lead to quality publications.

This new qualitative leap in the publishing of academic journals requires radically different designs, diffusion, and readings, and so we must be able to offer innovative solutions regarding formats, management, dissemination, etc., while at the same time reflecting on the role of academic journals in the development of knowledge in our society.

Keywords: academic communication, academic journal, social sciences, digital publishing, trends.

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Resumen:

Las revistas científicas cumplen una función esencial en la difusión y preservación de la ciencia, además de otorgar reconocimiento al investigador. Es un medio de comunicación que ha permanecido con escasas modificaciones a lo largo de los últimos siglos, reconociéndose en la comunidad científica los rasgos básicos que debía cumplir. Ahora bien, desde finales del siglo XX estamos viviendo una radical transformación de estas publicaciones debido a las decisiones en política de la ciencia, a los procesos de evaluación del desarrollo profesional de los investigadores y a las posibilidades que ha generado el entorno digital a la edición de estas publicaciones.

A partir del análisis de contenido de las principales investigaciones sobre esta temática, se aborda el estudio de la situación de las revistas científicas, con especial incidencia en las del campo de las ciencias sociales. Se recoge la especial precariedad en la que se encuentran estos títulos y la urgencia de incorporar los estándares internacionales de calidad con el objetivo de ser indexadas en las bases de datos más relevantes. A su vez, se acometen los retos que están planteándose en la actualidad para afrontar la necesaria transformación al entorno digital. La accesibilidad, el acceso abierto, los nuevos recursos como valor añadido, los modelos de negocio, las medición del impacto o los cambios de comportamiento en los investigadores son cuestiones que son presentadas para generar la reflexión y la propuesta de acciones que nos lleven a publicaciones de calidad.

Este nuevo salto cualitativo en la edición de revistas científicas está exigiendo diseños, difusión y lecturas radicalmente diferentes, por lo que debemos ser capaces de aportar soluciones innovadoras en formatos, gestión, difusión, etc., a la vez que reflexionar sobre la función de las revistas científicas en el desarrollo de la ciencia en nuestra sociedad.

Descriptores: comunicación científica, revistas científicas, ciencias sociales, edición digital, tendencias.

1. Introduction

Writing about academic journals means writing about science. They appeared over 350 years ago as a channel for academic communication, cumulatively setting down in writing advances in each field of knowledge. They still remain an unrivalled means of disseminating the results of research under the maxim that *anything that is not published does not exist* (Delgado López-Cózar & Ruiz-Pérez, 2009). In this context, since their very beginnings, periodical publications have become an undisputed point of reference for the academic community as they provide visibility, reliability, universality, and recognition (Alonso-Gamboa, 2017). In other words, they not only disseminate the results of research but also facilitate mechanisms for recording authors, ensuring the quality of submissions, and preserving them, so that knowledge can continue to be constructed based on them (Ware & Mabe, 2015). The review of submissions by experts, the presentation of texts in a defined format, their periodical distribution by specialist publishers (scientific societies, universities, etc.) are the elements that have characterised every journal, with

a structure and organisation that have been maintained over time (Laakso, 2017). Undertaking this type of project required enthusiasm and an interest in promoting one's own publication, while also having a means of academic communication as documentary proof of the research activity of the institution itself, and a network of scientific collaboration capable of facilitating this whole process was activated (Corera-Álvarez & Molina-Molina, 2016). Over all these years, criteria for assessing quality were not required of this type of publication, and so editorial teams limited themselves to complying with certain standards recognised by the community, publishing the promised volume, and distributing it to university libraries, scientific institutions, and subscribers. In this context, the recognition of the journals depended on the reputation of the editors and/or the institutions that funded them.

However, we are now in a situation where it is clear that the academic journal will soon no longer take the form it currently has. While the way they were published was virtually unchanged for nearly four centuries, the last 40 years have seen a spectacular evolution shaped by technology which is changing the entire structure and organisation of these academic publications (Gu & Blackmore, 2016). The introduction of the standardised criteria needed to guarantee the transfer and retrieval of academic information, the generalisation of journal evaluation systems, the appearance of information and communication technology (ICT) in the field of research and documentation, and so on, are radically changing academic communication, while at the same time promoting the commitment to open research (European Commission, 2016). It is also important to bear in mind that a decisive factor in the importance currently given to any academic journal is a result of the political decision to make them a significant part of the processes for evaluating the scientific and academic careers of researchers, something which has created an unprecedented demand to publish in journals with a high impact factor (Ware & Mabe, 2015).

This transformation affects all academic journals, regardless of their subject area, imposing changes on their structure, organisation, and publication that were until now unthinkable. However, if we focus on the field of social sciences, it becomes apparent that these journals have not developed at the same pace as ones from other areas thanks to this field's particular way of carrying out research characterised by heterogeneous methodologies, practices, ways of disseminating findings, and recognition derived from these publications (Abadal, 2017). This subject has titles that are well recognised and have a long tradition, but which until the 1990s did not undertake the necessary adaptation to normalised quality standards and attention to international trends in the academic community. It is a sector that still maintains many of the traditions and features of its past and, despite being present online, still largely maintains the structure and format of the printed edition (Abadal, 2017).

At the same time, there is no doubt that scientific activity in Spain has

developed extraordinarily over the last 20 years, leading to significant changes in researchers' behaviour and a notable increase in scientific productivity and visibility (IUNE, 2016). In this context, journals become a vital part in the process as the main medium for disseminating research, as they are recognised as the main indicator for professional recognition and progression, reinforcing the *publish or perish* attitude that shapes every researcher's work.

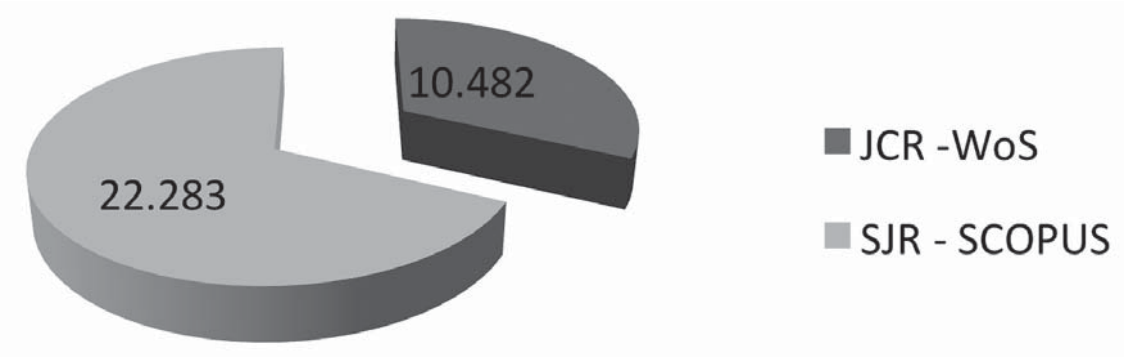
2. Academic journals: towards a necessary transformation

Examining the quality of academic journals is something that has interested experts in scientific documentation for over 50 years. From the middle of the 20th century onwards, a number of international bodies, such as UNESCO (1963) and the International Federation for Documentation (1963), national institutions, experts, and so on, implemented projects aimed at establishing policies to identify and promote the best academic journals to guarantee the dissemination of the knowledge generated. This was the origin of the implementation of evaluation processes (Delgado López-Cózar & Ruiz Pérez, 2009). At the same time, scientific information managers appeared that were capable of interrelating bibliographic information and information analysis resources to evaluate and analyse the performance of research (Web of Science and Scopus). Databases and catalogues were created (Latindex, REDALyC, SciELO, MIAR, etc.) that drew up quality criteria aimed at selecting the best publications. We should not forget that we are discussing a galaxy of 68,819 active academic journals around the world (Navas, 2017), a more than sufficient number to cover the output of researchers. Nonetheless, it was governmental and institutional policies that dictated that publications had to be indexed in one or other of the two most important databases if they were to be regarded as being of quality: the Web of Science (WoS) database by Clarivate Analytics (USA) and the Scopus database by Elsevier (the Netherlands). As a result, these became reference points for the quality of all research (Martínez & Moreno, 2016). In this way, the very dynamic of academic work and the recognition of scientific and academic institutions, researchers, and policy managers led to WoS, ahead of Scopus and other products, becoming the leading point of reference for evaluating academic work, based particularly on the «fact that the impact factor established itself as the main indicator for evaluating articles» (Borrego, 2017, p. 26).

Nonetheless, examining what journals are indexed in the two databases shows that they currently only list 47.6% of publications at a global level (Graph 1): 15.23% in WoS and 32.37% in Scopus. This is a clearly insufficient level of representation and one which has a very uneven distribution between subject areas. The over-representation of the sciences and engineering, journals in English, and journals from certain western countries in WoS is clear. And if we analyse the presence of the social sciences in both databases, the percentage

falls to 15.89% in WoS and 32.37% in Scopus for indexed journals, putting this subject area in a deeply unequal competitive position.

GRAPH 1. Number of journals indexed in WoS and Scopus.



Source: Navas, 2017.

But the idea is clear: either a journal is in WoS it is not recognised since the value of each journal is identified with being indexed in this platform (Table 1) (Alperin & Rozemblum, 2017). This criterion shapes academic output, the career progress of researchers, and even research funding (Ware & Mabe, 2015) and as a result shapes the behaviour of the academic community. There is no question that these two large bibliographic information companies have become «the main instruments of control of scientific production and for evaluating researchers» (Delgado López-Cózar & Ruiz-Pérez, 2009, p. 27).

TABLE 1. World ranking of journals and presence (in %) in JCR and Scopus.

World ranking	Countries	Total no. of journals	%	% in JCR	% Scopus
1	USA	14,261	20.7%	24.59%	27%
2	United Kingdom	7,955	11.6%	37.49%	21%
3	China	5,434	7.9%	1.71%	3%
4	Germany	3,907	5.7%	18.68%	7%
10	Spain	1,720	2.5%	5.81%	3%

Source: Adapted from Navas, 2017.

This action framework was what inspired academic journals from the field of social sciences to adapt urgently to the established quality parameters. While the sciences already had recognised international criteria for disseminating and recognising research, the social sciences did not concern themselves with these requirements for many years, as can be seen from each field's research output (Table 2).

TABLE 2. Production of academic articles by field in the Spanish university system 2006-2015.

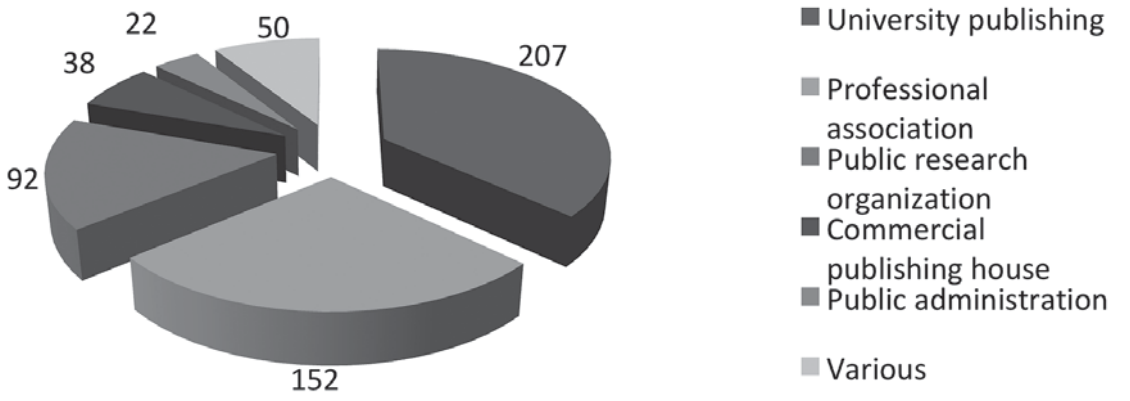
Academic field	Production of documents
Sciences	236,401
Health sciences	114,470
Engineering and architecture	108,176
Social and legal sciences	44,241
Arts and humanities	24,393

Source: Adapted from IUNE 2017.

If we consider the situation in Spain, no journals are currently ignoring these quality criteria for evaluating research output as they aim to be included in the databases the academic world regards as reference points. This is driving this radical transformation in social science publications. Here we are talking about 33.7% of journals, compared with 27.2% from the field of sciences. The social science journals have a local focus in content, organisation, and publishing, while science journals are designed with a clear international dimension (Claudio, Martín Baranera, & Villarroya, 2017).

It should not be forgotten that the origins of academic journals in the social sciences were linked to academic organisations, either university institutions or research institutions that did not aim to make a profit from them. Their interest was not in making a profit but instead in there being bodies to publicise the advances in their research, something that would lead to academic prestige and recognition from the academic community (Delgado López-Cózar & Ruiz-Perez, 2009). These bodies continue to run these publications, although commercial publishers for which profit and professionalisation are the primer concerns are gradually entering the field. This situation is already well-established outside Spain with well-established companies in this sector such as Taylor & Francis, Elsevier, Springer, and Wiley, among others (Diestro, Ruiz-Corbella, & Galán, 2017; Navas, 2017), causing a change in model in the organisation of these publications (Graph 2).

GRAPH 2. Distribution of bodies owning academic journals in Spain.



Source: Adapted from Claudio, Martín Baranera, & Villarroya Planas, 2017.

These graphs lead us to consider how precarious the field of social sciences in Spain is, despite its large number of active journals, thanks to the late adoption of international standards, its deep rooted local focus, and the fact that 57.21% of the bodies that publish these journals are public institutions affected by political and economic vagaries (annual limits, human resources restrictions, etc.), meaning that university publishing has worse results than publishing from other sectors (Corera-Álvarez & Molina-Molina, 2016).

As publishers we are, paraphrasing the famous saying, well aware that we operate in an *inside or perish* model that obliges us to be alert to trends that shape the development of these publications. In addition,

> we should not forget that creating and maintaining academic and professional journals is a key instrument in the organisation, structuring, and social institutionalisation of areas of knowledge, as these publications are a constituent element of the production and reproduction of know-how (Delgado López-Cózar, 2017, p. 74).

Accordingly, academic journals have played and are playing a key role in research, not just as part of the research process as a channel for disseminating discoveries and results, but also as a mechanism for recognising authors, with all of the implications this has for them.

At the same time, these policies for evaluating research have meant that the means of publication increasingly look the same across different fields, with a significant impact on the behaviour of researchers and, by extension, academic work in each area (choice of topic, methodologies, formats for communication, etc.).

Neither should we ignore the fact that this is an industry that is consolidated at an international level, had a turnover of more than 25 billion dollars in 2013 with projected annual growth of 4%, and has very good prospects for growth in the open access environment (Ware & Mabe, 2015). This fact raises the debate about

the influence of these publications on the academic world, about the importance of policy decisions in this field, and about the institutions that publish them.

3. The challenge of publishing in digital settings

In the academic world, and in particular the academic publications created by it, the appearance of ITC has had a decisive impact on researchers' move towards ways of behaving that differ radically from the ones they traditionally adopted. These technologies provide ever more powerful resources for studying and analysing large amounts of data, they make research possible in previously unthinkable fields, and they can retrieve and process data quickly regardless of physical location. These new possibilities are creating changes both in how research is done and how it is disseminated and evaluated (Fiala & Diamandis, 2017).

The turning point for change of model occurred in the 1990s when the first electronic scientific publications started to appear (Ruiz-Corbella, Galán, & Diestro, 2014; Alonso-Gamboa, 2017). In Spain, in the field of education, the *Revista Electrónica de Investigación y Evaluación Educativa* (RELIEVE) in 1994 became the first open-access electronic publication, albeit with many reservations from colleagues. Gradually, as the potential of the internet became apparent, online spaces were created where journals could host content, with the proportion of journals taking advantage of this increasing from 2% in 1997 to 33% in 2017 (Alonso-Gamboa, 2017). However, in most cases they limited themselves to making the printed journal available in an online setting, thus increasing dissemination in a process with no turning back.

From 2010, there was a qualitative leap with the spread of web 2.0, which provides applications aimed at enriching content and interaction between publishers, authors, and users. Digital publishing consequently opens up a new model in which resources that facilitate the recovery of information, collaboration, the use of different communications channels, interaction, the inclusion of social media and so on are conspicuous. The great possibilities this setting offers are gradually leading all journals to abandon the print format and publish online exclusively. Shifting to online publishing is no longer just an option, but rather a need: if you are not online, you do not exist (Fiala & Diamandis, 2017). This is more than just a change; it is a radical transformation of how the academic journal is understood, of how people publish in it, disseminate its content, and measure its impact. In consequence, it is important to analyse the factors that make this new paradigm possible.

3.1. Accessibility

The digital format is the key to facilitating access to content without any cost for users. Content can be accessed from any device, along with resources that are included to add value to the research, and so scientific content is no longer limited to a physical format. The result of this is that each journal moves closer to the

researchers as it is present in their place of work (Ruiz-Corbella y Galán, 2017), in databases, in social media, and in the digital settings where they interact. We emphasise social media as they are proving their strength of interaction and their capacity to boost visibility. Consequently, it is necessary to plan the online presence of each publication and its content, something which requires new specialisms in each editorial team (Ruiz-Corbella, Galan, & Diestro, 2014), as well as involving authors in disseminating in their own digital spaces.

3.2. New resources as added value

Another aspect that is still not fully developed in these publications is the enrichment the digital environment offers. Designing pages that not only contain content in text format, but are also enriched with different complementary options (audio, video, graphics, data, hyperlinks, interactivity, etc.), to facilitate the digital experience. Being able to interact with authors, other readers, contributing your own critique of each article, accessing complementary material, and such like opens up new ways of accessing, appraising, and evaluating research that ensure great interactivity. This requires a change in how articles are published and accessed as well as how they are read, altering the one-way communication that, until now, shaped the relationship between authors and readers (Cruces, 2017). Offering a «live» text that provides not just the process and results of research but also, and in different formats, everything needed to give a complementary perspective to the one set out in it. In this way, the author's collaboration with the journal does not end when the article is published but instead involves a major commitment, not just to enriching the research presented but also to interacting with other colleagues who take an interest in it.

3.3. Open access

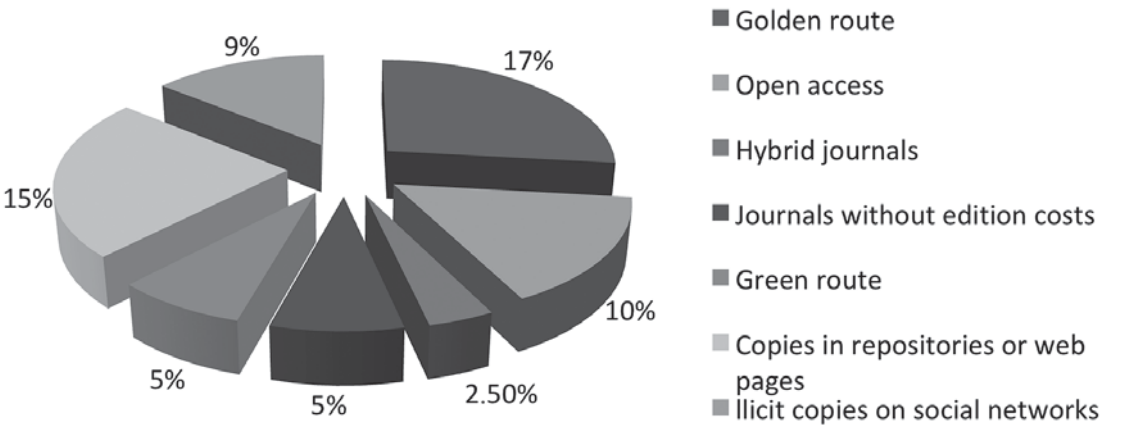
The Open Access movement, which since 2002 has encouraged universal accessibility and licenses to reuse scientific documents, guarantees

> all users a free, irrevocable, worldwide, right of access to, and a license to copy, use, distribute, transmit and display the work publicly and to make and distribute derivative works, in any digital medium for any responsible purpose (Open Access Initiative, 2003).

This movement is driving two major changes. On the one hand, there is the decisive influence on the access and dissemination in research policies, promoting the compulsory requirement to deposit in open access all data produced by publicly funded research, as well as the publications and documents deriving from it. The aim is that all of them will be available for free by 2020 (European Commission, 2016). The argument behind this is that if work has been publicly funded, every citizen should have the right to access it, and it should be made more visible. The debate goes on, but the fact is that research funding is already awarded under these conditions, and projects like SciELO (1998), PLOS (2000), and DOAJ (2003) were pioneers in this policy (GERECS, 2018). Repositories to store any document

created, open publishing of academic journals, and the appearance of new copyright models like Creative Commons are examples of the new models of working in this digital setting, which mean that at present 63.5% of scientific production is available openly in its different forms (Graph 3).

GRAPH 3. Percentage of articles published in the different types of open access.



Source: Adapted from Corera-Álvarez and Molina-Molina, 2016.

3.4. Business models

Free access is not free from costs, something which is encouraging new business models as the costs of institutional subscriptions are moved onto authors through payments for publishing (Bjork, 2017). The idea is that

> if access is to be free, and if the journals, however digital they may be, have a cost (and they undoubtedly do), it is logical to look for an alternative funding stream and that this is payment of publishing costs by the authors (Anglada, 2017, p. 110).

The cost of publishing each article (the article processing charges or APC) is passed on to the author, a practice that is already established among journals in the English-speaking world, especially in the field of sciences, which charge between 1000 and 2000 pounds, with notable differences between different journals and publishing groups, and with very few setting their charges below these amounts (Research Information Network, 2015). This payment is based on the costs of editing, peer review, number of pages, use of colour in the printed version, etc. The differences in APCs between journals lead us to ask whether there is a need to identify the real costs of publishing to avoid abuse and fraud, especially to the detriment of authors who do not have the support of established research groups. While we argue that academic journals should not be a profit-making business, we do agree that they must have enough income to cover the cost of quality publishing in a digital context, income that must also,

little by little, facilitate the professionalisation of editorial teams.

3.5. Managing and publishing journals

One issue, derived from the previous one, focuses on management, publication, and dissemination models. These publications were originally funded and sponsored by academic societies, universities, and/or institutions that promoted research, and were, on the whole, managed by a director/editor who undertook much of the editorial management. However, this management now requires input from teams comprising a variety of professionals who are experts in digital publishing, editorial management, scientific documentation, etc., and so it is unlikely that a single editor would be able to perform all of the roles required.

> This process of inclusion in international databases and the growing value of publications in journals that are indexed and have impact for researchers' CVs have transformed the publishing scene and affected the management of the journals, which need a growing degree of professionalism to survive (Martínez Moreno, 2008, p. 316).

The fierce competition to position and make visible each publication is gradually resulting in major multinationals undertaking this publishing and so transforming the world of publishing.

In addition, the need for the journal to increase its visibility in the scientific community, as well as its reputation comprising its brand and digital identity, means it is disseminated through social media. If with the printed edition, dissemination focussed on sending copies to libraries, institutions, and authors, who in turn spread it around their contacts, with digital editions, this action is done jointly by the editorial team and authors. Ensuring each article is present in databases, directories, social media, etc., giving added value to the published content, placing it in the spaces where research networks converge, etc., are key to ensuring the impact of each article. These tasks involve real editorial marketing design and the confluence of different specialists.

Another consequence of the digital format is the inclusion of digital identifiers for the journal and for all of its content. The complexity of the internet and the enormous quantity of data that accumulate support the need for each document to have its own identifier (Digital Object Identifier-DOI) to guarantee its conservation and recovery independently of any upheavals that happen to each journal's website. This very interesting ability to preserve each document and retrieve it through key words as well as the DOI is undoubtedly having an impact on the trend towards the article being more important than the journal, of the unit over the collective.

3.6. Scientific impact

Since the middle of the twentieth century, as mentioned above, systems have been implemented to evaluate the quality of journals. Among the various initiatives, two international businesses stand

out: Web of Science (WoS) by Clarivate Analytics (USA), a scientific information platform that provides tools to evaluate the quality of publications, and Scopus by Elsevier (the Netherlands), the largest database of scientific production. Both provide different products to evaluate the quality of the journals indexed in the databases, including the impact factor (IF) as a measurement which, through each article's ability to be cited, determines the position of each journal among those from the same scientific field. This calculation is based on a work's ability to be cited by colleagues in a given period of time and in certain journals classed as sources. This measures the usefulness and intellectual influence of a work but not its quality (Delgado López-Cózar, 2017), and it has eventually become an indicator of competitiveness.

WoS, especially through the Journal Citation Report (JCR) in 3 major areas of knowledge in science, and Scopus, through CiteScore, Scimago Journal Rank (SJR), Source Normalized Impact per Paper (SNIP) or the h-index provide the metrics that decide the rankings of academic journals recognised in all scientific fields as reference points for evaluating the quality of publications. Each of these products gives a valuation to each journal based on the ability of its articles to attract citations. However, when evaluating these data, we should not lose sight of the fact that in the field of the sciences, including the experimental sciences, biomedical sciences, engineering, etc., their research has an immediate impact and a very short citation period (2 years to calculate their IF) and so the continued presence of each article is very limited.

In contrast, in the social sciences, although the period for calculating the IF is extended to a window of 3 years, this is clearly insufficient as it is shown that citations can start much later, and the results of the research are valid for longer, which should in turn result in a longer average life for citations (Borrego & Urbano, 2006), and citation windows differentiated by field of knowledge (Delgado López-Cózar, 2017). Furthermore, we should not forget that researchers in the social sciences not only publish in journals, but that their output also includes other media such as books, which are not taken into account as a source for assessing the number of citations received, which skews the results of this measurement.

Despite this, the IF continues to be the quality reference recognised by the scientific community and the reference for evaluating the scientific output of researchers. Nonetheless, it is only in the last ten years that other metrics (Altmetrics) have appeared in force, backed by the possibilities of the semantic web. This allows for the possibility of evaluating not only scientific impact, measured through citations, but also social, educational, professional, and economic impact. The number of times a document is viewed, downloaded, read, mentioned on social media, in academic works (masters dissertations, doctoral theses, etc.), etc., provide information that should be taken into account when evaluating the real impact of each article, data that collect the altimetry measuring different aspects to those covered by a citation (Costa, 2015). However,

this is not a matter of opting for one or the other but of seeking complementary formulae that give a true evaluation of the influence of each piece of research. Therefore, including the apps that create these metrics on the page of the journal is vital to collect information about its influence and impact in real time. It stands out more for its strategic value than as a means of scientific evaluation, as it provides data on the use of articles, the interests of certain groups, identifying trends, etc. (Costa, 2015). Exceedingly useful information for each editorial team when making decisions.

3.7. Changes in researchers' behaviour

These new process are undoubtedly leading to changes in the behaviour of researchers regarding the identification, retrieval, processing, and dissemination of information. This is created not only by the possibility of accessing a huge amount of data and information but, even more importantly, the fact they are identified based on each unit. In other words, what is identified, retrieved, and disseminated is the article and not the journal that publishes it. There is no question that their reputation will continue to be important as it is not the same publishing in one journal as in another, but the article as a unit, with its ability to attract citations, is gradually becoming more important, and so separating itself from the publication in which it appears. The practice of searching for research based on search engines and databases that retrieve works described using certain keywords, not based on particular publications is emerging.

This is one reason for the appearance of megajournals, a model of journal that publishes over 25,000 articles per year (e.g. *PlosOne*), along with the enormous number of researchers who currently converge with the urgent need to publish. These open access publications are based on the value of each article and cover a broad range of topics. They select articles solely on formal and methodological criteria and have a business model in which each article covers its own costs. They are not intended to be published at regular intervals or to have a set distribution or a limited number of copies, thus breaking with the formal structure of traditional journals. Logically, the greater the number of units with impact, the higher the quality of the journal. PlosOne was the first to start this model, in 2006, and 15 initiatives with this format quickly followed. Among these, *Sage Open* (Sage) and *Cogent Education* (Taylor & Francis) which publish articles in the field of education, are especially worth noting.

Another change in behaviour among researchers in the social sciences derives from the application of ways of doing work in which experimental articles dominate at the expense of essays, theoretical foundations, or critical analysis. One example of this change is the demand to use the IMRaD format when writing articles, included in the requirements of most journals in this field.

Another consequence of this trend is the gradual abandonment of monographs in favour of articles as articles have more recognition in research activity evaluations and IF calculations. As a result of

this situation, what takes precedence is not the search for the most appropriate place of publication for each article, in accordance with the aims of the research and its intended audience, but instead what benefits the author in promotion processes (Borrego, 2008; Giménez-Toledo & Tejada-Artigas, 2015). This situation is also leading to a concentration of researchers in the same journals, with the consequent saturation of submissions, pressure, bad practices, etc.

This behaviour is also apparent in the increase in joint authorship, which, among other factors, is due to the growing complexity and interdisciplinary nature of academic activity (Borrego, 2017), and also the pressure to publish. While the average number of authors per article in 2006 was 7.57, by 2015 it had risen to 20.25 (Delgado López-Cózar & Ruiz-Pérez, 2009, IUNE, 2017). This factor also differs by subject area; in the sciences an average of 9.8 has been observed, with extreme numbers of authors in some areas with over 100 names on certain projects. In contrast, in the social sciences, this graph is 3.1, with single authorship gradually disappearing (Grupo EC3, n.d.). Joint authorship is now established in all fields, and so the order of authors' names has a direct impact on their recognition, and is restricted in some areas.

Along with the names of the authors, the researchers' institutional affiliation is recorded. The institutions they are from show a growing trend to vary, with international joint authorship in 41.44% of cases, according to the latest IUNE report (2017), compared with 28.50% of cases where the authors are all from the same Spanish autonomous region (IUNE, 2017). This trend can also be seen in the growing interest in publishing in international journals (Corera-Álvarez & Molina-Molina, 2016), which leads to researchers getting a greater return when publishing in the lingua franca of science. As a result, publishers are finding that if they want high visibility and the subsequent IF, they must publish in English, as it is the most recognised vehicle, or at least offer bilingual editions. If this option is now a reality in the sciences, in social sciences it is gradually imposing itself, obliging publishers to consider publishing in English. The problem is now how to pursue internationalisation without losing the cultural identity of each publication, its mission, and the topics that are of interest to it, which should interest researchers in the field.

3.8. Peer review

One of the most controversial aspects in the process of publishing articles is evaluating the quality of submissions received. This is undoubtedly the guarantee of the quality of scientific communication. The practice that has been in place for years leads us to accept double-blind review as the best system, despite logical misgivings about its limitations. One worrying problem, based on the growth of academic production, is, on the one hand, the great number of reviewers needed to meet this demand and, on the other, the need for each work to be evaluated by experts in its subject to provide a quality evaluation.

In turn, the quantity of works sent to each journal results in a saturation of work for reviewers, especially bearing in mind that most of the time they receive no payment for doing it. Preparing a good review of a submission takes time and effort, and is something that not everyone knows how to, wants to, or can do. Consequently, publishers increasingly encounter the problem of finding good reviewers. They encounter bad practices in the performance of this task, something which has an impact on the quality of the journal as subjectivity sometimes predominates over a balanced evaluation of the approach, process, and results of a work. Ensuring the quality of this editorial process is one of the main concerns of any editor (Abad, 2017).

In view of this situation, alternatives to peer review are emerging. One option is to review only formal and methodological aspects, without evaluating the content as this can be evaluated through the citations received, downloads of the work, references on social media, and so on. It is ultimately the academic community that gives each article its evaluation. Another model derives from the demand for greater transparency in the evaluation process, in which different systems are proposed in which everyone involved in this process appears explicitly. Signed reviews that can also be published alongside the article: transparent reviews in which any member of the scientific community can review the process followed and the different reports created: prepublication review in which the work is lodged in a repository before being sent to a journal so the academic community can evaluate it (e.g. *arXiv*); review after publication through comments in a system similar to a blog, etc. (Abad, 2017). These are more collaborative and transparent ways of evaluating advances, but they also suffer from limitations and bad practices. However, «despite all of the criticisms of anonymity and the impunity of reviewers, the leap towards transparency is not so widely accepted in practice» (Abad, 2017, p. 68). The problem is complex, and so the debate remains open, awaiting the possibilities offered by web 3.0 which provides collaborative options. However, these options will not become established if they do not, at the same time, offer some type of recognition for the people who take part in reviewing these articles.

3.9. New publishing models

In recent years, new types of journal have appeared in response to the demands and development of science. As well as the megajournals mentioned above, it is also worth noting the «datajournal» which starts from the idea that what is most important in any research is to provide the data obtained, preceded by a description of the basic elements that describe the research, so it can be replicated and the study can be moved forward (e.g., *Research Data Journal for the Humanities and Social Sciences*). The data are undoubtedly the essential elements for evaluating the results and achievements of any piece of research, and so researchers are asked to deposit them in a repository that is accessible to their colleagues in the interest of developing science and avoiding fraud. In this way, publication of

the article is separate from publication of the data, and the data are published to increase their accessibility. Once these have been published, the researchers would communicate their results and discoveries in conferences. In this scenario journals would be less important (López-Borrel, 2017, p. 232).

4. Looking to the future: editors' responsibilities

After this brief overview of the changes affecting academic publications, there is no doubt that we are in the midst of a new qualitative leap in academic publishing that is transforming editorial practices. They will continue to be reference points, in one format or another, so long as they offer a prestigious framework for the works they publish and, by extension, for the authors and institutions that provide these works. In addition, it is also important to bear in mind that the article is becoming ever more valuable in itself as it is measured on the basis of its real impact, and so editorial management will no longer revolve around the journal as a whole but instead the individual articles published.

This dominance of the article, resulting from the consolidation of online journals, is imposing radically different models of design and dissemination and readings, and so it is important to put forward innovative solutions regarding formats, structures, and the participation of all of the agents involved. This is a proposal that calls for the professionalisation of the management of these publications, replacing the voluntary model that has supported them up to now, at the same time as generating synergies between different editorial teams and creating networks of collaboration.

However, any good journal is half science and half marketing, as it must achieve scientific, social, and political impact, as well as in other fields, in the unstoppable march of open access. Impact has become established as the means of measuring the quality of research, but we should not lose sight of the fact that its reach cannot be measured with the same parameters and metrics in all subject areas. In the social sciences in particular it is important to be able to widen the range of sources for gathering information, without restricting this to certain journals and considering other spaces for disseminating research and the different ways in which users can participate. Accordingly, new metrics open up very useful perspectives for examining the real impact of each piece of work, without losing sight of the fact that it is one thing to do research and another to disseminate it. One problem with these measurements is that this reinterpretation of impact based on the IF is sidelining an important element: the quality of regional science. Balancing international interests with regional and local ones is a challenge we must face, as research should not be swallowed by the interests of some countries with greater strategic weight, finding a balance that supports continued work in the topics that are of interest in each region at the same time as maintaining dissemination in the different regions' languages should remain relevant to the academic commu-

nity, achieving this international impact and reputation without losing sight of the local.

This is the moment for us to reflect on the function of academic journals in the development of knowledge at present, on the undoubted support provided by technological advances, on the inescapable internationalism, etc., without losing sight of our social responsibility as editors to meet the demands and needs of the academic community of which each publication is part, just as it forms part of society. The responsibility, definitively, to disseminate and preserve science.

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