

Transformation of Scholarly Publishing in the Digital Era: Scholars' Point of View

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Summary

Scholarly publishing is one of the most important activities for scholars whose career depends on publication of their research results. To find out more about the current situation regarding scholarly publishing at the Faculty of Humanities and Social Sciences in Zagreb, Croatia, a research project was initiated. Findings showed strong orientation of scholars towards the most traditional publication channel in science - printed journal. Findings also revealed that scholars most frequently write their articles alone; sometimes they wait for more than a year for publication of their articles mainly in journals; they are seldom editors of journals, but they participate in work of editorial boards and they also participate in the peer review. The outcomes of this research showed that scholars are still communicating by using the infrastructure of the old paradigm of scientific communication based on printed information resources and that they suffer from the same problems as their colleagues around the world regarding communication of the results of their scientific research.

Key words: Scientific communication, scholarly publishing

Introduction

Scholarly publishing is an essential activity in the scientific community worldwide. It allows scholars to present and promote results of their scientific research and gain prestige for themselves and their academic institutions as well as to attract grants for new scientific research. The scientific research at universities has been communicated through the ages primarily via scholarly publishing (Honey, 2005, p. 59) or more precisely, by the help of articles printed in scientific journals, the primary vehicle for communicating and documenting results in most scientific disciplines (Lynch, 2007). Journals have a special role in science since they "(...) have a function of documenting invention and ideas and have, over time, established methods for bestowing merit and status (e.g., through peer review and recognized editorial boards)

(...)" (Lynch, 2007). The traditional scientific journal is undergoing a transformation, initiated by technological opportunities and by a series of environmental factors that will shape the future structure and functionality of publications and communication (Lougee, 2000, p. 239). This ongoing publishing revolution has generated great quantities of digital content creating opportunities for new forms of research and scholarship, qualitatively different from the traditional scholarship based on printed information resources. To find out whether the scholars are still relying on the printed information resources for publication of their research results, a research project was initiated.

Problems encountered by scholars in the process of scholarly publishing

Writing an article for publication in a scientific journal is one of the most important jobs of a scholar. Scholars write scientific articles "(...)" to communicate precise information, idea, concepts in a standard format. Another goal of writing is to persuade audience on the conclusions." (Khattri, 2009, p. 187). They are very keen on publishing their articles in scientific journals of high quality. They choose carefully journals which offer the most favourable conditions for publication of their articles. Scientific journal is "(...)" the main genre used by scientists to report on their work and document results of their research" (Mackenzie Owen, 2007, p. 37). Final choice of the journal is made upon scholar's perceptions about "(...)" the relative qualities of the journal, the efficiency of the expected review process and the estimated likelihood of acceptance by each journal." (Miller and Harris, 2004, p. 75). Scholars are also occasionally members of the journal editorial boards where they participate in making the most important decisions about the journal publishing policies and where they encounter different problems related to communication with authors and journal editors. These problems are shared by many journals as their authors come from many world countries and make similar demands to the journals and journal editorial boards: speedy publication, fair peer review, fair communication with journal editor etc. Finally, scholars are sometimes taking part in the peer review process as reviewers. This activity is usually done in scholars' free time without getting any material compensation for the work done. Mulligan enumerated five key criteria considered by the prospective reviewers when they are making decision whether to accept or to reject this job: "(...)" paper relevancy, journal reputation, the quality of the article and impact factor of the journal." (Mulligan, 2008, p. 199). In spite of the problems they encounter during their participation in the peer review process, scholars continue to accept journal articles for the review. Gisvold explained this phenomenon: for some reason scholars "(...)" seem to think that being a member of the academic community carries an obligation to take part in this kind of work." (Gisvold, 2007, p. 977). Many other problems are present in the exciting world of scholarly publishing but due to the space constraints, only a selection

of the important problems scholars frequently encounter as authors, members of editorial boards and as reviewers have been presented in this chapter.

Research

To find out more about the experience of scholars in roles of authors, member of the journal editorial boards and peer reviewers a research was initiated. Scholars at the Faculty of Humanities and Social Sciences in Zagreb (FHSS) were chosen as a target group for this research because they are work in the biggest academic institution in the fields of humanities and social sciences in Croatia. The main hypothesis of this paper is that scholars at the FHSS still prefer traditional communication channel in science - printed journal as their principal communication channel. The purpose of this research is to identify characteristics and problems in the process of scholarly publishing in this target group of scholars. Web survey consisting of 27 closed type questions was chosen as a method of conducting the research. The research started on January 24th 2011 by sending e-mail invitations to all employees at the FHSS who regularly participate in research and teaching process at this Faculty (approximately 600 people). The research was closed on February 9th 2011 with 106 people who participated in it (response rate of 17.6 %). While the response rate may seem to be low, collected results represent a relevant snapshot of the current situation of publishing habits of scholars at the FHSS and it can serve as an orientation for future research.

Findings

The survey was divided into three parts. The first part consisted of two questions about scholars' title and field of science (social sciences or humanities). The second part aimed at collecting data about scholar's experience with publishing of their articles in scientific journals. The third part aimed at collecting data about scholar's experience as reviewers and/or journal editors or members of journal editorial boards. Due to the space constraints, only part of the survey findings will be presented in this section.

74 (71.2%) participants came from the field of humanities, and 30 participants (28.8%) came from social sciences (some participants didn't indicate the scientific field they work in). The structure of the respondents was the following: assistants (42), assistant professors (32), full professors (18), associate professors (8), senior foreign-language instructor (2), lecturer (1), professional associate (1), senior professional associate (1). The presented participant structure can be attributed to the assumption that the younger employees at the FHSS use e-mail as a preferred communication tool more frequently than their older colleagues. It must be noted that some categories, such as lecturers and foreign-language instructors, have a small number of

members, so their number will always be smaller compared to, for instance, assistants.

Q1. What type of work do you write most frequently?

Table 1: Type of work written most frequently (N=105)

	N	%
Scientific article in a journal	71	67.6
Paper in conference proceedings	25	23.8
Professional article in a journal	4	3.8
Author review	2	1.9
Some other type of published work	2	1.9
Book chapter	1	1.0

The results suggest big popularity of two types of scientific works: scientific articles and papers presented at conferences and published in the conference proceedings. They are most frequently written two types of scientific works by the participants in this survey (Table 1.). Other types of works such as professional articles in journals and author reviews are less represented. Two respondents gave additional answers: "the question is badly formatted since it doesn't allow multiple choice" and "scientific article, author review, book". The popularity of scientific articles and conference papers could be explained by their importance in the process of academic advancement at the Croatian universities. These two types of the written scientific works are also highly visible in the scientific full text databases and this could be the reason why they are written more frequently by scholars than some other types of works.

Q2. How many article manuscripts have you send to journals in the last year?

Table 2: Number of article manuscripts sent to journals in the last year (N=106)

	N	%
2-3 article manuscripts	43	40.6
One article manuscript	22	20.8
4-5 article manuscripts	22	20.8
Not a single article manuscript	7	6.6
6-7 article manuscripts	7	6.6
8-9 article manuscripts	3	2.8
10 and more article manuscripts	2	1.9

Most respondents in this research write 2-3 manuscripts a year on average (Table 2.). Equal number of scholars, approximately, writes between one and 4-5 manuscripts a year. The pressure for publication of the required number of articles necessary for the academic advancement might has lead to the increased number of manuscripts sent to scientific journals. By sending the increased number of article manuscripts to journals, authors create additional pressure on

journal editorial boards which are sometimes unable to cope with increased quantities of article manuscripts sent to them, which then results in longer periods of the peer review and longer publication time. The excessive production of article manuscripts could also lead to the decreased quality of articles written in haste and under pressure.

Q3. Number of colleagues with whom you cooperate in writing of a paper (regardless of its type)?

Table 3: Cooperation with colleagues in writing of a paper (N=105)

	N	%
I'm the only author of my papers	50	47.6
I cooperate with one colleague	30	28.6
I cooperate with 2-3 colleagues	23	21.9
I cooperate with 4-5 colleagues	1	1.0
I cooperate with 10 or more colleagues	1	1.0
I cooperate with 6-7 colleagues	0	0.0
I cooperate with 8-9 colleagues	0	0.0

Almost half of the participants in this research write their papers alone (Table 3.). Another 50.5% percent (cumulatively) cooperate with 1-3 colleagues. Cooperation is necessary especially when the paper is the result of joint effort of scholars working together on the same scientific project. The extent of the cooperation depends on the area of science. In some areas of the science like natural sciences, technology or medicine, cooperation of large number of scholars is quite common. This research confirmed the existence of moderate or limited cooperation between scholars in the fields of social sciences and humanities.

Q4. Formats of article manuscripts sent to journals?(multiple answers)

Table 4: Formats of article manuscripts sent to journals (N=102)

	N	%
In electronic format, as an attachment to the e-mail message	89	93.7
Printed on paper	23	24.2
In electronic format, on CD or DVD	15	15.8
In electronic format, by uploading article manuscript to the online journal management system	13	13.7
In electronic format, on USB memory stick	4	4.2

E-mail is by far the most popular communication channel for sending article manuscripts to the scientific journals. However, almost one quarter of the respondents still send their article manuscripts to the scientific journals in paper format and even less respondents send their article manuscripts on optical media. One should bear in mind that format requirements are set by the

scientific journals and that they are usually published in author guidelines. Communication on the internet has sped up the communication between authors and journal editors and editorial boards, and it has become preferred by many journals worldwide. It is rather surprising that only a fraction of scholars who participated in this survey uses online journal management systems for sending their article manuscripts to journals. These online systems have improved journal managing process significantly as they decrease the number of procedures usually done by journal editors manually such as receiving article manuscript and their distribution to the reviewers and back to the authors with comments etc. By using such online systems authors are in a position to monitor the status of their article manuscripts autonomously during the whole process of article review. Usage of such online systems requires support from the IT specialists which are not always available to journals, so they use e-mail as much simpler solution for the article manuscript management instead.

Q5. According to your estimation, how long does the publication period of your article usually last?

Table 5: Duration of an article publication (N=102)

	N	%
10-12 months	29	28.4
Longer than 12 months	29	28.4
4-6 months	18	17.6
7-9 months	17	16.7
2-3 months	9	8.8
Less than one month	0	0.0

Long duration of publication can influence negatively a scholar's career. However, due to the heavy demand for publication space in scientific journals, scholars have to wait for a long period of time until their article is published even if it means waiting for 12 months or longer. More than a half of the respondents (cumulatively) in total indicated that the publication time of their articles is between 10-12 months long (Table 5.) or more than 12 months long. While this period might seem to be unusually long, sometimes it is difficult to complete the review process in short period of time in journals which have too few reviewers and journal editors overwhelmed with other duties outside journal. Such long periods for publication might influence the interest for particular articles negatively since research results presented in them might get less current in time.

Q6. Regarding the journal publication medium, in which type of journal did you publish most of your articles in the last 5 years?

Table 6: Type of journals in which scholars published most of their articles in last 5 years (N=104)

	N	%
Mostly in printed journals	92	88.5
In printed and electronic journals equally	8	7.7
Can't estimate	3	2.9
Mostly in electronic journals	1	1.0

Majority of the respondents publish their articles in printed journals (Table 6.) which indicates importance of printed journals to this group of scholars. Possible reasons for this result could be: reliability, stability and high visibility of printed journals as a communication medium in science. The popularity of printed journals suggests that electronic journals still haven't become important publishing channel for scholars who participated in this research.¹ This might be the problem for the journals existing solely in the electronic format, because they are unable to attract scholars to publish their articles in them. Scholars' orientation towards publishing in printed journals could make development of open access scientific resources in Croatia more difficult.

Q7. Regarding the geographical criterion, in which type of journal did you publish most of your articles in the last 5 years?

Table 7: Type of journals in which scholars publish their articles (N=105)

	N	%
Predominantly in journals published in Croatia	62	59.0
In Croatian and foreign journals equally	25	23.8
Predominantly in journals published outside Croatia	17	16.2
Can't estimate	1	1.0

More than a half of the scholars in this research published most of their articles in the Croatian scientific journals in the last 5 years (Table 7.) and far less (23.8%) of them published both in the Croatian scientific journals and foreign journals equally. Publishing articles predominantly in the Croatian journals might be the matter of language or targeted audience, since many of the Croatian journals in the fields of social sciences and humanities are published only in the Croatian language which makes them peripheral for the readers outside Croatia who do not understand the Croatian language. Some journals are bilingual and allow

¹ In this paper the term electronic journal refers to all types of on-line journals and journals distributed on the Internet and by other means of electronic communication such CD, DVD etc.

authors to send their contributions in the Croatian or in the English language, depending mostly on the type of the article, because scientific articles are usually published in English, while professional articles and author reviews are published in Croatian. The choice of the language is written in author guidelines of a particular journal. Publishing articles in languages other than the Croatian language increases visibility of the author, article and journal especially today, in the internet era.

Q8. Do you publish your articles in open access journals?

Table 8: Publication of articles in open access journals (N=105)

	N	%
No	63	60
Yes	42	40

Forty percent of the respondents publish their articles in open access journals (Table 8.). Other scholars (60%) might still be reluctant to send their articles to the open access journals because they know that the articles might not be taken into consideration for the academic advancement if there is no solid proof of quality which includes the mandatory peer review in the process of publication. Open access initiative in Croatia could benefit additionally from its promotion in the Croatian academic community to gain more recognition in the academic advancement process and to attract even more scholars to publish their articles in the open access journals.

Q9. Are you an editor in a scientific and / or a professional journal? (multiple answers)

Table 9: Being an editor in a scientific or a professional journal (N=106)

	N	%
No	98	92.5
Yes, I'm editor in one Croatian scientific / professional journal	6	5.7
Yes, I'm editor in more than one Croatian scientific / professional journal	1	0.9
Yes, I'm editor in one foreign scientific / professional journal (outside Croatia)	1	0.9
Yes, I'm editor in more than one foreign scientific / professional journal (outside Croatia)	0	0.0

Only 6 scholars are editors in one of the Croatian scientific or professional journals (Table 9.), and only 1 scholar is editors in two such journals and only 1 scholar is editor in a foreign journal. Since the number of scientific journals in social sciences and humanities in Croatia is not small, it was expected that the number of scholars acting as editors would be bigger. Job of an editor can be very demanding, and scholars are sometimes reluctant to take this job.

Q10. Are you a member of the editorial board of a scientific or a professional journal? (multiple answers)

Table 10: Member of the editorial board in a scientific or a professional journal (N=106)

	N	%
No	66	62.3
Yes, I'm member of editorial boards in one Croatian scientific / professional journal	25	23.6
Yes, I'm member of editorial board in more than one Croatian scientific / professional journal	10	9.4
Yes, I'm member of editorial board in one foreign scientific / professional journal (outside Croatia)	10	9.4
Yes, I'm member of editorial board in more than one foreign scientific / professional journal (outside Croatia)	2	1.9

Situation is better in case of participation of scholars in editorial boards of journals (Table 10.) where 23.6% of participants are members of the editorial board in at least one Croatian scientific journal while 9.4% are members of the editorial boards of several Croatian journals and at least one foreign journal. Large number of scholars who participate in the work of editorial boards of scientific journals is good for the journal because editorial board members can take part in the editing process and take some responsibilities from the editor. In addition diversity of a journal editorial board can contribute to the quality of topics published in the journal.

Q11. What type of problems did you encounter while reviewing a journal article manuscript as a peer reviewer (multiple answers)

Table 11: Problems (first 5 only) encountered while reviewing a journal article manuscript as a peer reviewer (multiple answers) (N=68)

	N	%
Peer review job was not paid	58	74.4
I received low quality article manuscripts	45	57.7
Peer review job took me to much of my valuable time	21	26.9
Instructions received from the journal editor on how to evaluate article manuscripts were bad	20	25.6
I receiver badly formatted article manuscripts	15	19.2

The next question was focused on problems the respondents encountered while participating in the peer review process (Table 11.). The peer review is the necessary quality control procedure and it is essential if the scientific community wants to retain quality of published scientific works. Reviewers will always encounter problems, but, they usually feel that they have an obligation

to participate in the peer review process as it is an integral part of their jobs as scholars.

Table 12: Possibility of displaying preferential treatment by the article reviewers due to author's position, title or reputation (N=104)

	N	%
Yes	5	4.8
No	63	60.6
Can't estimate	36	34.6

Peer review is one of the most important processes in science. Yet, many scholars protest when they experience slowness of the process, unfairness, preferential treatment etc. The outcome of the peer review process can determine the future of scholar's career. For that reason, scholars care greatly about the peer review process and stress that it should be freed from common problems discovered during many decades of its existence. Fairness of the peer review is very important to scholars. 60,6% of the respondents believe that they didn't experience preferential treatment during the peer review process because of their reputation, title or status which they had at the moment of article manuscript submission (Table 12.). Fairness and integrity of the peer review process is essential for the process of maintaining the quality of scientific publication.

Conclusion

Scientific communication is a very complex endeavour. To be successful it requires efforts from many parties involved in it. The current system of scientific communication is undergoing a paradigm shift. This shifting process will not happen overnight, and it requires a significant amount of effort from all parties involved in the process of scientific communication to make the shift possible. Scholars are the most important party participating in this process and as such they encounter many problems while trying to publish results of their research. To find out more about the process and problems of scholarly publishing at the FHSS, a research was carried out. The outcomes of that research showed that scholars are still communicating by using the infrastructure of the old paradigm of scientific communication based on printed information resources. Generally, authors in this research suffer from the same problems as their colleagues around the world regarding communication of the results of their scientific research. Despite the problems, the system of scientific communication and its subsystem scholarly publishing remain the most important means for dissemination of scientific knowledge. Up to now, science managed to find solutions to various problems it encountered during centuries of its existence and it is expected that it will manage to find solutions to current problems as well in order to enable future transfer of knowledge.

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