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SCHOLARLY COMMUNICATION AND SOCIAL WORK IN THE GOOGLE ERA

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ABSTRACT

Scholarly communication and social work in the Google era

In this text, we outline how new media has an impact on international scholarly communication and focus on how these changes (can) influence the traditional gap between research and practice. We do so by describing the dreams of yesterday, the facts of today and the possible consequences for the near future.

The most significant development on the interface between science and information technology is not so much the increased computational power but the increased availability of scientific information, be it communication between scientists through virtual libraries or discussion lists, or between scientists and students through electronic learning environments.

Through this development of more digital scientific communication and more visibility of that communication in the public realm, the traditional schism between science and practice changes.

Combining this with the increasing plea for more applicability of research results, it is time to supplement the science citation index with the Google citation index.

Keywords

Scholarly communication, dissemination of research results, bridging the gap between research and practice

SAMENVATTING

Onderzoekscommunicatie in sociaal werk in het Google tijdperk

In dit artikel zetten we uiteen hoe de opkomst van nieuwe media van invloed is op communicatie tussen wetenschappers wereldwijd, en hoe deze veranderingen van invloed (kunnen) zijn op het traditionele gat tussen wetenschap en praktijk. We doen dit door het beschrijven van de dromen van gisteren, de feiten van vandaag de dag en de mogelijke consequenties daarvan voor de toekomst. De belangrijkste ontwikkeling die zich op het raakvlak van wetenschap en informatietechnologie heeft voorgedaan, is niet zozeer de toename in technische mogelijkheden, maar vooral de toegenomen beschikbaarheid van wetenschappelijke informatie, zij het communicatie tussen wetenschappers binnen de virtuele omgeving van bibliotheken of op discussiefora op het internet, of communicatie tussen wetenschappers en studenten middels een elektronische leeromgeving. Deze toename in communicatie tussen wetenschappers en de toegenomen zichtbaarheid daarvan, heeft gevolgen voor de traditionele afstand tussen wetenschap en praktijk. Een andere ontwikkeling die met deze discussie samenhangt, is een toegenomen vraag naar meer toepasbare onderzoeksresultaten. We stellen daarom dat het tijd is om de Science Citation Index aan te vullen met de Google Citation Index.

Trefwoorden

Communicatie tussen wetenschappers, verspreiding van onderzoeksresultaten, overbruggen van de afstand tussen wetenschap en praktijk

INTRODUCTION

"The ultimate goal of using science in social work is to shape the behaviour of practitioners. To be useful, science must make it out of the laboratory and into the field" (Kirk & Reid, 2002,

p. 167). Against the background of rapid diffusion of internet access and emergence of social software, this article explores whether new opportunities arise to achieve the goal articulated by Kirk and Reid almost a decade ago, and many others since. It is a goal cherished by many, whether scholars, policy makers, practitioners. Citizens have a double interest in it. As taxpayer and therefore contributor to publicly funded research and scholarship, they have an interest in the research eventually resulting in improved practice. As a patient or client, they want their general practitioner, dentist, social worker or any other professional to use the latest scientific insights while providing treatment or services. Consequently, we need to explore in which ways scholarly communication of research results (for instance on social work, but equally for other professions) can benefit from our digital society, and improve on the ways science makes it into practice.

In the time budget of a scientist, a considerable amount of time goes to communication, the most visible and valued result of which are publications in journals or books. Plenty is being published, so much so that few scientists would be able to claim to have a full overview of what has been published in their area of activity. A few modest attempts have been made to question the need for and desirability of so much productivity in terms of research publications (Gilbert, 2009). In addition to communication between scientists (and students), there is communication towards the general public through the news media and popular scientific weekly magazines. Researchers include it as part of their work (Kyvik, 2005) and many Western universities have special staff to support such communication, as it favourably contributes to the public reputation of the university when its research is quoted in the newspaper, on radio or on the television news. These "science communicators" have their own scholarly journals (e.g. *Science communication*, published by Sage), and their own training. The Imperial College in London for instance organizes a master in science communication.

This communication landscape of the modern scientist is unfortunately incomplete, as it lacks a communication strategy with practice. It is as if the practitioner is expected to get the results from research through either the scholarly journals or through the general media. It has been argued that the result of this situation is unsatisfactory and practitioners are not up to speed with research results: "the uptake of evidence-based practice has not been uniform and the application of research to practice has been, at best, erratic and unsystematic, and, some might say, almost non-existent" (Gray, Plath & Webb, 2009, p. 22). The schism between research and practice does not only exist in social work, but has been identified in other areas, such as medicine, psychotherapy and education. For medicine, "this situation has been referred to as a "quality chasm" by the U.S. Institute of Medicine"(Dearing, 2008, p. 504). A report of the Education Council of the Netherlands assessed the Dutch educational research to be of high quality (as indicated by

international citations) but having no visibility or impact in the almost 12,000 schools in the country (Onderwijsraad, 2003).

The past decade has seen the rapid diffusion of new media, including widespread home access to the internet, mobile phones and the connection between these two. At the time of writing, surveys indicate about four out of five households in north-west Europe have home access, with similar high levels of connectivity in work environments. Additionally, time budget surveys indicate an increasing proportion of our time is spent using electronic media, with a significant shift from television time to internet time. While an increasing proportion of this (home) connectivity is used for entertainment (downloading of music, computer games), the development has great consequences for the availability, dissemination and usage of professional knowledge. Many information users have already replaced Encyclopædia Britannica with a rich mixture of Google and Wikipedia; will something similar happen to scholarly social work journals? Will our information landscape become dominated by what is easily accessible through the internet and should scholarly communication consequently embrace open access models?

In order to explore these issues, this article will describe scholarly communications from the perspective of the dreams of yesterday, the facts of today and the possible consequences in the near future.

DREAMS

The original dream of digital scholarly communication is often located in a post-war essay of Vannavar Bush. After the considerable work of scientists during the war and their efforts on “the making of strange destructive gadgets”, he wondered about the new challenges for scientists: “Now, as peace approaches, one asks where they will find objectives worthy of their best” (Bush, 1945). According to Bush, the growing amount of research results made traditional methods of science communication and evaluation no longer adequate. He consequently called for new methods to be developed to increase the accessibility of science. Two elements would be critical for such new methods: miniaturization¹ and selection of information through association. His ideas can be said to be the origin of the notion of a virtual library and hypertext.

In the decades since this essay, a lot has been written about the idea of the virtual library, the “library without walls”, but it was only with the maturing and diffusion of the internet and the world wide web towards the end of the 20th century that turning the dream into reality became feasible. The added value of the virtual library lies in the more powerful search and retrieval options, and the access across time and space.

Dreams do not cease to exist when they have been realized. The widespread use of the internet itself generated new and higher levels of ambition. As such, the next challenge for scholarly communication is to extend its value into the public realm:

The internet and electronic publishing enable the creation of public libraries of science containing the full text and data of any published research article, available free of charge to anyone, anywhere in the world. Immediate unrestricted access to scientific ideas, methods, results, and conclusions will speed the progress of science and medicine, and will more directly bring the benefits of research to the public (website PLoS, Public Library of Science, www.plos.org).

This is the equivalent of the notion of open source software. Some of the more visible proponents of this dream are the Public Library of Science (www.plos.org) and the Budapest Open Access Initiative (www.soros.org/openaccess). Another example is Scholar Google, which allows for easy searches within scholarly publications and very recently introduced a direct link to pdf-versions of texts whenever they are freely available. All are part of a process of democratizing the scholarly output of research processes.

Open access is not about replacing academic journals and quality mechanisms such as blind peer review. Open access is about providing free access to publications for readers, enabling quality information and research results to quickly find their way to application. As such, it is an addition to the existing publication mechanisms aiming to enrich the information environment of professionals, citizens and service users.

A variation on this theme can be found in expanding this ambition from publications to education. An inspiring example is the open courseware initiative of MIT (ocw.mit.edu). Since 2002 onwards, all MIT courses have been extensively described and made accessible on a free public website. The commitment has been expressed to maintain free access to this information, also in future. According to MIT, giving free access to extensive course material does not jeopardize their position as educational institute. Education is not about making knowledge available, but about bringing together people who learn with and from each other (J. P. Potts, communication manager of MIT OpenCourseWare, personal communication, April 2003). As the early technology commentator Mike Cooley put it, "You program a robot, you train a dog (or possibly a soldier), but for human beings you provide educational environments" (Cooley, 1980, p. 67). MIT's attitude towards electronic information emphasizes the value of human interaction precisely because those wanting more than digital educational material, still need to enrol and pay the normal student registration fees.

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While open courseware is largely associated with MIT, other initiatives are more generic and less institution based. A website like www.slideshare.net allows everybody to upload and share PowerPoint presentations. And YouTube allows video lectures to be shared. Although the number of available lectures is increasing (try a search on "social work"), they are still a minority of all the material YouTube hosts.

Another variation on this theme can be found in extending access to publications into providing free and easy access to raw datasets and other empirical data (for instance transcripts of interviews). Implicitly, this is an open invitation to the research community to scrutinize the original analyses, to test the soundness of the results (peer review!) and to data-mine for additional results. In the pre-internet era, such sharing of raw data sets was also possible through national data archives. In reality, this was a laborious and expensive process, both for registering datasets as well as extracting them again. Examples of modern digital versions can be found at WebUse (www.webuse.umd.edu with direct access to General Social Survey datasets, among other datasets) or Pew Internet and American Life (www.pewinternet.org).

FACTS

Many of the original dreams of Vannavar Bush became reality. Three main developments related to his thinking that can be identified: the virtual library, self publishing and the emergence of informational theme parks.

Virtual libraries were slow to take off. At first, the new media changed the library environment by replacing the index cards and microfilm with electronic catalogues, subsequently also accessible from outside the library (and consequently also outside official opening times of the physical library). Such development also changed the nature of indexing and abstracting services, some of which are a commercial service (such as NASW's social work abstracts), others being a public service (such as the UK Social Care Online). Publishers as well as libraries took advantage of the new opportunities, resulting in online access to full text of journals through initiatives like Scencedirect, Ingenta or Oxford Journals.² The literature review phase of any research project no longer takes place between the library shelves and behind the photocopier, but by pointing your browser to your favourite or the most relevant journal repositories. Management of access to these repositories and limiting access to only those who pay subscription fees is a big challenge for publishers, but also symbolic for the selective nature of this development. The whole economic model of traditional scholarly publishing depends on readers (or their employers) paying for access.

Self publishing is less well recognized as a significant development than the virtual library, but is surely a more radical transformation. Initially this took the form of *self-archiving* as authors began to make digital copies of their publications available through websites, either the full-text as published or a near-final draft version. This subsequently became more professional with the establishment of institutional repositories (see for example Social Care Institute for Excellence or the Joseph Rowntree foundation), and many universities making the collective outcome of their research staff available online. Lately self-archiving has been supplemented with self-publishing where authors turn to websites or weblogs to publish their thoughts, either as a complement or as a replacement of publishing in scholarly journals. This is most often discussed as a threat to both the quality of scholarly communication (where is the peer review?) and to professional and commercial publishers (what is the economic model of self-publishing?). However, most self publishing initiatives are not a replacement but a supplement to traditional publishing. Very few authors limit their efforts to self-publishing as most continue to write for journals.

Other self-archiving initiatives cross organizational boundaries and orbit around a specific subject (the disciplinary repositories) or around the work of a specific scientist/research group. Those working on for example social networks (is social capital in neighbourhoods declining, growing or merely changing? Is internet contributing to, or rather a useful tool to fight social isolation?) no longer need to rely on their (virtual) library to gain access to the groundbreaking publications of Barry Wellman, but can surf to his website (www.chass.utoronto.ca/~wellman). In this way, manuscripts become available before they are officially published in scientific journals, consequently increasing the speed of scholarly communication.

This development towards self publishing is also visible in the transformation of traditional scientific journals into online open access journals, including an editor, editorial board, a blind peer review process. Examples within the social work area include the *Journal of Social Intervention and Social Work and Society*.³ Because of the relative technical ease of building a website and the low financial risks involved, there is less need to involve professional publishers. Researchers or research teams increasingly become the hub of their own scholarly communication, both supplementing and competing with traditional ways of disseminating research results. Commercial publishers have lost their monopoly in reaching the audience for (scientific) writings, given the ease with which authors can self-publish through the internet.

One can also see the emergence of new information products, adding to the information landscape. One example is the web-essay, as demonstrated in work at UCLA on the historic work of John Snow, the founding father of epidemiology. In a reflection on this format of scientific communication, the authors not only point to the power of multimedia (in this case, old maps

of London), but also to the relatively high numbers of users, compared to the same material in printed format (Frerichs, 2000).

In our own project on the history of social work in the Netherlands and Flanders (see www.canonsociaalwerk.eu), we notice an average number of visits around 10,000 per month. The recently launched international version of this project at www.historyofsocialwork.org is rapidly reaching the same number of visits. These are numbers most likely not reached by most printed scholarly texts.

This “open access advantage” of reaching a substantially larger audience has also been identified for traditional scientific papers which are freely available online (Lawrence, 2001). Recent research in health suggests that open archived publications were 60% more likely to be cited at least once, and, once cited, were cited 29% more than non-OA articles (Greyson, Morgan, Hanley & Wahyuni, 2009).

A third development resulting from the interaction between new media and science communication can best be described as *informational theme parks*. These are digital clusters of information, mostly with a website as its hub, including (scientific) publications and online discussions on a certain subject. Those who are for example interested in social capital and the analysis of Robert Putnam (Putnam, 2000) needn't be satisfied with his book, but can spend time in the accompanying information theme parks at www.bowlingalone.com or www.bettertogether.org and learn about current research, questionnaires and research methodology and the like. Those who are concerned about the growing number of people with dementia and the consequences this has for social work, need no longer solely rely on professional journals like *International Social Work* but can also go to the Dementia Gateway (www.scie.org.uk/publications/dementia/) where case studies, professional standards and video material can be found.

There is a great deal of variety among these informational theme parks and little uniformity as to who acts as change agents. Some of these theme parks are built and maintained as part of a funded project, others are part of the regular work of research or professional organisations while yet others are the result of the enthusiasm of individuals. In terms of depth, there is great variety: at one extreme, a static website with just a couple of pages, and at the other extreme complete virtual disciplinary libraries. And while some of these theme parks are very traditional in sending information to users, others mirror real theme parks and provide plenty of interactive opportunities, for instance through a discussion list or feedback opportunities on specific items.

Amidst this variety, there are also some commonalities. Most of these informational theme parks are in the public realm and combine scholarly communication with information from policy and practice. Knowledge is approached both as a product (documents) and as a process (interaction

amongst users). Information is being gathered by relevance to the theme, not because of its origin. As such, the development of such “theme parks” can be described as a development from “ascribed” to “achieved” status of information (concepts known from sociology, see e.g. Lin, 1999).

Unfortunately these commonalities can also be found in the weaknesses as well as the strengths. Sustainability is often problematic, with information only being up to date if there is a critical mass of users and/or the project funding hasn’t finished. Equally, the lack of archiving is a problem. What can be found today may have been relocated on the website or disappeared completely by next week. This makes the inclusion of these theme parks in the traditional library catalogue problematic. Also, these initiatives can be launched and maintained to disseminate low-quality information, whether purposefully or unknowingly. There is yet no equivalent quality control process similar to blind peer review, and it is up to readers to make their own quality assessment of the information made available.

Such informational theme parks may appear new and fascinating, but are no revolution. They have existed for many decades as an important feature of scholarly communication. The notion that science communication takes place through networks of persons, more than through publications, was identified by Derek Price (Price, 1963) and described by Diane Crane who coined the concept of “invisible colleges”: a small group of researchers that regularly exchange information about the newest progress on the “research front” (Crane, 1972, p. 35). New media may add a touch of exhibitionism to this where it is used to make the communication visible to outsiders, but equally more democratic by inviting outsiders to participate. Consequently, this development has the potential to bridge the divide between research and practice. Not only do articles and reports become available without the high prices journal publishers find it necessary to charge, but a dialogue can emerge between scientists and practitioners.

CONSEQUENCES

The transition from dreams to realities continues into consequences. The most often cited consequence deals with economics and the failing business model of traditional scientific publishers (see for instance Lamb, 2004). With the invention of the printing press and ever since humanists like Justus Lipsius and Desiderius Erasmus had their works reproduced by the Antwerp publisher Christoffel Plantijn, there has been a strategic alignment between producers of knowledge (scholars, scientists, researchers) and publishers. With the widespread use of internet and the pdf-format, this alignment may be in jeopardy and the power balance between authors, publishers and readers may be shifting. This results in debates in higher education about multiple

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payments for publications (once for the time writing it, once for peer reviewing it and once more for buying it back from the publishers). A search is underway for new business models for science communication, such as that of the Public Library of Science in which the author pays a small fee for publication, rather than the readers. Within this context, the de jure and de facto developments of intellectual property rights and copyrights are critical elements.

Contrasting to this endangered business model for commercial publishers stands the claim that free access to research results has positive effects on economic growth, strengthens the innovation power of the economy and makes universities more transparent. Exemplary is the statement of EU Commissioner Neelie Kroes, October 2011, that open access to research results – both publications and research data – is not just a luxury. She sees Open Access as a must for Europe if they are to be able to compete internationally (video message on www.surf.nl/open2011).

Do these developments also have social consequences? The Budapest Open Access Initiative certainly has high expectations:

Removing access barriers to literature will accelerate research, enrich education, share the learning of the rich with the poor and the poor with the rich, make this literature as useful as it can be, and lay the foundation for uniting humanity in a common intellectual conversation and quest for knowledge (BOAI website, www.soros.org/openaccess).

Does virtual science communication, and the availability of science results in the public realm, have an egalitarian effect? We do not know of any empirical data on this, but can make some assessment for different groups of consumers of science communication. For staff and students of Western universities, the developments have little or no social and economic consequences. Universities pay hefty fees for bulk subscriptions to journal repositories such as Ingenta or Sciencedirect, and university staff and students can make good use of access. They hardly notice when access to an article is free, or paid for by their university's bulk subscription (the so-called "big deal") (Edlin & Rubinfeld, 2004).

For those outside universities, those working in other educational settings, in industry, in public services and citizens, virtual libraries like Ingenta and Sciencedirect are as inaccessible as the traditional university library was and still is. The development of putting more research outcomes in the public realm is however having a significant effect. A simple Google search on even the most esoteric keywords will result in plenty of information. An engineer in a local SME has faster and easier access to information than ever before. A teacher in the local school can gain access to results of educational research and, when in an informational theme park, can discuss its

implications with colleagues around the world. A social work practitioner struggling with a specific case can google for information and experts with relevant knowledge. It should come as no surprise that recent research indicates the internet becoming an important information resource for social work practitioners (Horder, 2006). The same goes for service users. We know from research that citizens are very active in searching for health related information through internet (e.g. Fox & Jones, 2009). There is no systematic research available as to whether social work service users do the same, we can only make the assumption they do but do not know how and to what degree.

There is also a global dimension to these developments. Potentially many developing countries can benefit from the transition of scholarly communication into the public realm. A general practitioner in Brazil or India can access a sheer unlimited resource of medical information. Here, we unfortunately encounter the innovativeness-needs paradox at work: "the individuals or other units in a system who most need the benefits of a new idea (the less educated, less wealthy, and the like) are generally the last to adopt an innovation" (Rogers, 1996, p. 275). While these doctors in Brazil or India might benefit substantially from these innovations, their access to internet is relatively weak and they are consequently unable to benefit from access to medical information. Of the current 700 million internet users, the overwhelming majority live in OECD countries. Even so, many indicate that access to digital research and educational information is a key element in the inclusion of developing countries in the global knowledge economy (Hellman, 2003).

For each of these groups (researchers, practitioners, service users, information users from developing countries) there is also the issue of language. Just like pop music and science, the internet is making English an important language. Those who are not able to use English in communicating are put at a disadvantage and are limited to communicating in less widespread languages. This is especially so for scientific information, as most Western universities now put great emphasis on international peer reviewed publications, which happen to be in English language journals most of the time. The social science section of the Web of Science list includes only a very limited number of non-English journals.

Although the original visionary thoughts of Vannavar Bush can still be recognized in the recent developments of scholarly communication, at least one of the problems he identified has not been solved by all this technology. Internet has made (scientific) information so readily available in such enormous quantities, that the French expression *une mer à boire* (a sea to drink) comes to mind:

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Those who conscientiously attempt to keep abreast of current thought, even in restricted fields, by close and continuous reading might well shy away from an examination calculated to show how much of the previous month's efforts could be produced on call. Mendel's concept of the laws of genetics was lost to the world for a generation because his publication did not reach the few who were capable of grasping and extending it; and this sort of catastrophe is undoubtedly being repeated all about us, as truly significant attainments become lost in the mass of the inconsequential (Bush, 1945, p. 102).

This brings us to a final important consequence of scholarly communication in the Google era. There is so much information available, that the information most easily found will dominate. One could rephrase Gresham's economic law which originally said "bad money drives out good money" into "easily available information drives out less available information". If practitioners looking for information can easily find more than they can ever read through a simple Google search, chances are that they will not make the effort to visit the local university library and browse through the scientific journals there. This is especially so as the easily available information solves two of the major barriers associated with traditional information searches: lack of time and costs (Horder, 2006). Needless to say that this development does not take away other barriers, such as scientists' proclaimed tendency to survive in a "publish or perish" environment by continuously looking for the least publishable unit, hence fragmenting their research results and spreading them across numerous articles (Broad, 1981).

So within this open information landscape that emerged as a consequence of internet and Google, we might end up with a practitioner with plenty of information, but information of poor quality, missing most research outcomes. Two strategies could be used to address this problem. One consists of creating an awareness among practitioners that they should not (only) search through Google, but be persistent and try to get beyond that and into scholarly journals (e.g. through scholar Google, although that mostly doesn't offer access to the full texts). Part of this strategy may be creating indexing and abstracting services such as Social Care Online (www.scie-socialcareonline.org.uk).

The other strategy focuses on researchers, and calls upon them to make their research results available through open access, so that anyone searching in the open information landscape is more likely to find good quality information. This is the core idea of the open access movement. From an academic perspective, the current assessment of good performance of a researcher or research group through the science citation index may work well, but from a social and professional perspective, this needs to be supplemented with a Google citation index through which wide availability of research outcomes is made explicit. Academics can no longer genuinely

call upon practitioners to keep up with scientific publications in their area if they do not make their own research outcomes at least freely available for anybody relying on the open internet-based information landscape.

CONSEQUENCES FOR SOCIAL WORK

Social work has always been a profession with a weak knowledgebase, partly because scarce resources to build it. One only has to compare the funding available for medical research to that available for social work to find an explanation for the weaker position of social work research. And while we can dream and hope for larger funding, the situation remains that it is critical to fully utilise the scarce research we have. That is important for the growth of the profession, to justify the taxpayers' money that goes into social work but more than that it is important because we want to provide the best possible social work to those citizens in need of our services.

It is puzzling that social work researchers like Ian Shaw, Sue White, Iain Ferguson or Eileen Munro, to name just a few of the current leading UK-based scholars, each show an extensive and impressive publication list on their university's webpage, but offer nothing to download. The overwhelming majority of the important insights they have to offer social work practice can only be found in commercially published publications to which social work professionals have problematic access, to say the least. All of their work is fully funded by public money, why should their results not be in the public realm as well?

They are certainly not unique in their information habits. I suggest you list the top 5 or 10 social work researchers in your country and try to find their research results through Google, disabling your university library access so you only find what a practitioner would find. You will be surprised how little you will find.

Alternatively, try searching for scholarly publications on some of the themes in the current professional social work debates. For e.g. relational social work, you will find links to Fabio Folgheraiter and Lena Dominelli, but only references and no full texts. For e.g. radical social work, you will quickly find references to work of scholars like Iain Fergusson and Michael Lavalette, but again only references and no full texts. Doing these searches, one can only be puzzled by how much we allowed our professional knowledge to become a commodity in the hand of private publishers.

At an international seminar on evidence based practice in October 2011, Mike Fisher, the head of quality and research of SCIE (Social Care Institute of Excellence) expressed puzzlement that when physicists at CERN discovered particles with a speed larger than light, the paper was immediately

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available to download, whilst in social work we find it normal to “hide” our research results in commercial scholarly journals. Wrong, he said, knowledge should be free!

Interestingly, in the same month the Dutch scientific organisation which funds the majority of research done at universities, announced they are co-owners of the research results and want them to be published through open access, including the raw data on which the research is based. Also in the UK we observe some development towards more open scholarly communication. In the restyled research excellence framework, which replaces the research assessment exercise, the impact of research beyond university will be more important to acquire a good evaluation of the research quality. Nevertheless, there is a long way to go before research results will automatically and quickly find their way into the open information landscape.

Within this perspective, professional organisations such as IASWW, ICSW and IFSW may want to rethink why they call for a research-based profession and aim to keep their members up to date with information, whilst at the same time limiting access to good quality publications in their own journal to those paying the commercial publisher. The same can be said about BASW and the *British Journal of Social Work* or NASW and their *Social Work* journal or of the *International Social Work* journal, supported by three international social work organisations. While access is generally available within Western higher education, it is not elsewhere nor in practice environments. For the benefit of social workers and their clients worldwide, it would be a significant move if social work journals were to redevelop into an open access resource, similar to the public library of science for the medical profession.

CONCLUSION

The developments emerging from the introduction of new media to science communication result in a more open information landscape. Key elements are the changing role of commercial scientific publishers, the transition towards open access, more interactive communication patterns, and more democratic participation by scientists and practitioners alike. Information theme parks enable us to approach knowledge as a process, as sharing of information and creative confrontation of analysis, thus supplementing the traditional publication scenarios.

Technical opportunities alone are however insufficient change agents, but gain more power as they are embedded in an appropriate social system. At present, the involvement of researchers in information theme parks is not valued formally. Assessment of quality in science is dominated by the blind peer review process. Allocation of research funds and career paths of individual scholars

are guided by the science citation index and not by the accessibility or societal relevance of their work. For the developments described in this text to gain momentum and become sustainable, we need to supplement this science citation index with a Google citation index. More creative and innovative ways of communicating research results, such as the TED-talks or the RSA animate movies, should equally be rewarded.

If pleas from researchers for practitioners to make more use of their research results are to remain honest, these researchers need to embrace the open information landscape and be active participants in it. This calls upon researchers and university policies to put less focus on blind peer review publications and more on other formats that enable to communicate research results to the audience that can use them.

NOTES

- 1 The Encyclopaedia Britannica could be reduced to the volume of a matchbox. A library of a million volumes could be compressed into one end of a desk" (Bush, 1945, p. 104).
- 2 Elsevier's Science Direct: www.sciencedirect.com. Ingenta: www.ingenta.com. Oxford Journals: www.oxfordjournals.com.
- 3 Journal of Social Intervention: Theory and Practice: www.journalsi.org. Social Work and Society: www.socwork.net.

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