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Print on Demand and Scientific Publishing

M. Castillo

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Print on Demand and Scientific Publishing

If I want to self-publish a book, I can go on-line and find several companies whose Websites offer cover design, inside layouts, black-and-white or color printing, ISBN registration, and marketing support, and I even get to keep the copyright and most of the profits instead of only the traditional royalties. These “privately” published books are available through Amazon and other retailers, and you can even pay extra for an electronic service that will keep track of your sales. In many cases, these books are printed only when a customer requests them. Out-of-print and rare books can also be individually ordered and printed for a price that is only moderately more than the original. Specialized printers are even compliant with strict regulations such as those from the Health Insurance Portability and Accountability Act of 1996. This process called “print on demand” is used also to order single copies of posters. Since printing has become digital and relatively inexpensive, print on demand has experienced significant growth.

How does print on demand apply to scientific journals? Many scientific journals are currently in the preliminary stages of investigating the effect of having their on-line version available to all subscribers but print only those who desire to pay extra through a print-on-demand service. This option of giving subscribers the choice of receiving their journal in electronic form only is more environmentally responsible. I believe that many readers will choose this option, but a smaller group of individuals will still prefer the paper version. Readers of most noncommercial scientific journals must understand that most advertising revenue still depends on the number of print issues circulated. Conversely, most publishing costs occur from receipt of manuscripts to creation of PDFs, which are true electronic copies of the final articles. By not printing and shipping, most journals would save only approximately 25% of their overall costs and become exposed to the potential downfall of losing advertising revenue. The only way that on-line publication becomes economically beneficial to smaller societies such as the American Society of Neuroradiology is if most journal subscribers choose to use just the on-line version of the journal and those who want print pay extra for it.

The print version of the *American Journal of Neuroradiology* (AJNR) is considered to be a good financial value.¹ According to its Eigenfactor (a method of measuring all journal citations and not only those used in the calculation of the impact factor), AJNR is in the top 10% of similar journals.² Cost effectiveness, a measure that takes into account the Eigenfactor and cost of each article and citation, places AJNR fourth among all imaging journals. Because of increasing production costs, the financial stability of most printed scholarly journals is in jeopardy and we need to find ways to survive. Most journals published by scientific societies face the same problems, mainly those of decreasing membership allocations, lack of growth of institutional subscriptions, diminishing advertisements, and pressure for open access. Faced with these situations, a journal can raise subscription rates or

switch to an author/institution pay model. With both options, we risk alienating our audience and contributors. To reduce cost, some journals such as the *Journal of Histochemistry and Cytochemistry* have opted to become electronic only.³

Fortunately, a third model exists, and that is print on demand. By using print on demand, a reader or an institution can pay extra to have a print version of a journal, whereas others may choose on-line-only subscriptions. Because digital printing is less expensive than offset printing, even obtaining a few issues of a journal may be relatively inexpensive and becomes an attractive alternative. Traditional printing is only less expensive when large quantities of items are being printed. Inkjet printers and special rapid-drying inks make print on demand possible. Small or niche markets such as neuroradiology may be better served by the micropresses and may benefit enormously from print on demand. Because orders at times may be for only a few printed items, these presses are also called ultra-short-run printers. Print on demand may happen simultaneously in different parts of the world as electronic files may be sent to multiple printing plants, making it possible to have 25 copies of AJNR printed in China on the same day that others are printed in Europe and in the United States (some newspapers already do this albeit at much higher numbers). Consortia of publishers, such as the International Printers Network, have up to 189 printing centers worldwide to minimize distribution costs.

Journals published by the American Diabetes Association offer a print-on-demand service for reprints.⁴ In their system, you locate the article in electronic form, purchase it on-line (\$12.00 for 1 reprint vs \$11.00 for the electronic-only version; prices decrease with quantity), and 48 hours later you receive by mail high-quality reprints. Print-on-demand systems for some scientific periodicals allow one to order items ranging from 5 to 200 pages, but in some instances, there is a predetermined minimum quantity. Although most print-on-demand services for scientific journals accept single-article orders, in the near future they will be able to print entire issues, selected articles from 1 issue, or one-of-a-kind issues created from miscellaneous or topic-driven articles available in an on-line repository.

Print on demand is also ideal for other needs of scientific societies and helps reduce their expenses. Meeting programs may be offered free in electronic form (downloadable to PDAs, cellular telephones, iPods, etc), whereas individual members who want these on paper pay extra through a print-on-demand system. Similar applications are already in place at some societies for their membership directories (the Radiological Society of North America does this). The cost of printing may then be passed on to the user and the amount of printed paper decreased, making us more environmentally friendly. Many times, the paper stock used for print on demand is heavier and the finished item may be thicker and heavier than its conventional counterpart, a fact that increases postage but is avoided if one picks up a specially ordered program at a scientific meeting.

Print on demand is an attractive alternative for highly specialized journals such as AJNR. Although at this time HighWire Press, which hosts our electronic journal, does not offer this service, it is only a matter of time until it becomes avail-

able. With this short editorial, I hope that I have introduced this concept to our readers.

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M. Castillo

Editor-in-Chief

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EDITORIAL

Why a World Federation of Neuroradiology Societies?

In our rapidly evolving world, neuroradiology already has a past and a palpable story. The first neuroradiologic examinations were invasive and date back to the early 20th century. The first Symposium Neuroradiologicum was organized 79 years ago. Since then, neuroradiology has progressed with dynamism but without acquiring recognition as a true specialty worldwide.

Objectively speaking, neuroradiology is scientifically strong but politically weak. It is possible that some of our current difficulties are due to the different backgrounds of the individuals wishing to practice neuroradiology (notably interventional neuroradiology) and to the large variety of practices that exist. Indeed, our training is extremely varied: If in many countries, radiology remains the traditional way to access neuroradiology, in many other countries, and especially for the therapeutic field, neurosurgery is the predominant way. This variability is also obvious in the background of individuals practicing in other subspecialties, such as pediatric neuroradiology, functional imaging, spine imaging, and head and neck radiology. These subspecialties are important because given the rapid progress that characterizes our time, it is impossible to master all aspects of neuroradiology.

It is now that the importance of the World Federation of Neuroradiology Societies (WFNRS) is most critical. Founded in Kumamoto in 1994, thanks to the energy and will of Derek Harwood Nash, the WFNRS aims to facilitate the worldwide development of neuroradiology. This objective is ambitious because the organization of neuroradiology in the United States has, in reality, little in common with the organization of neuroradiology in China, Russia, or Africa. We, therefore, need to think globally at all stages, from basic training to continuous medical education, practice, and accreditation and, at the same time, to evaluate our relationships with other specialties.

Organization of training often means confining ourselves to the basic framework of the specialty, which remains radiology-based. In all countries, physicians are conservative; this fact limits embracing new avenues. Few understand that the

current organization of medical specialties is a century old; the last century was a period during which concepts and techniques have dramatically changed. How can we imagine that it is reasonable to continue to do our work within structures that were created in a totally different environment? It is urgent to adapt our structures to new realities. Adaptation means letting older structures evolve and changing them. This is a difficult task due to individual interests. Only by grouping our effort and expertise and supporting and developing research will we continue to progress in our knowledge of the nervous system. The WFNRS must be capable of providing guidance in all steps of our profession.

Education and training have been the subjects of many of our discussions during the years. Our thoughts are based on the following definition: clinical neuroradiology is a medical specialty using imaging as a fundamental component in diagnostic, functional, and interventional procedures for patients with diseases of the brain; sensory organs; head and neck; spinal cord, vertebral column, and adjacent structures; and the peripheral nervous system in adults and children. The WFNRS proposes the following organization with respect to training and education to become a neuroradiologist: a minimum of 5 years full-time study at a program accredited by a relevant body. The time spent in neuroradiology should be no less than 3 years, 1 of which can be part of general radiology training. Two years may be spent in a related discipline, 1 year each in general radiology and a clinical neuroscience. Training should focus on diagnostic neuroradiology and may, by agreement between the program director and trainee, include in-depth training in pediatric, functional, or head and neck neuroradiology or a first year in interventional neuroradiology. Radiology, neurology, and neurosurgery have long fought to claim the privilege of training and exercising neuroradiology. My analysis of this situation is that the ideal solution would be a multidisciplinary training that reinforces a core knowledge of neurosciences that bridges all specialties involved.

Once these basic concepts are settled, the WFNRS should establish the general rules of training, precise and effective but also flexible enough to adapt to the needs of different countries. The WFNRS currently works with diagnostic and therapeutic scientific societies to establish and publish standards of training that will enable developing countries to achieve levels of competence in accordance with international standards. We are currently working to extend this approach to post-training assessments and continuing medical education.

Who will provide training, accreditation, assessment, and validation? It is not easy to answer this question. In most countries, medical schools and universities have traditionally focused on providing training in basic disciplines. Within the past decades, we have seen an increase in specialization. In Europe, the European Union of Medical Specialists deals with these issues. In France, it seems likely that the government will allow the French Society of Neuroradiology to decide who will train neuroradiologists, under which conditions it will function, and who will validate this training.

In this context, some scientific societies have asked the WFNRS to grant diplomas in neuroradiology that have international recognition. After much consideration, we believe that the WFNRS must avoid doing this. Our role is to facilitate a discussion that begets general rules but respects the medical