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Interview with Michael Clarke For podcast release Monday, March 1, 2010

ANNOUNCER: Welcome to a podcast of *Beyond the Book*, a presentation of the not-for-profit Copyright Clearance Center. Copyright Clearance Center is the world's largest provider of copyright-compliant solutions through a wide range of innovative licensing services and comprehensive educational programs for authors, publishers and their audiences in academia, business and research institutions. For more information about *Beyond the Book* and Copyright Clearance Center, please go to www.beyondthebook.com.

KENNEALLY: At the nonprofit Copyright Clearance Center, we follow closely developments in scholarly publishing and we are about to speak with someone who has a very provocative view on an important question. Why hasn't scientific publishing been disrupted already?

This is Chris Kenneally for *Beyond the Book* and joining me today is Michael Clarke, a longtime veteran of scientific publishing. Michael, welcome to *Beyond the Book*.

CLARKE: Hi, Chris.

KENNEALLY: It's nice to have you join us today. And a blog post that you wrote back at the beginning of the year for The Scholarly Kitchen, which is a blog edited by Kent Anderson, a previous guest of ours here on *Beyond the Book* and published for the Society for Scholarly Publishing, caught our eye because it looked at a question that probably is one many in the publishing industry – the scientific publishing industry – care a great deal about. We'll talk with you about the blog.

First, we'll tell people about your own background. You've done quite a lot of work in the scientific publishing community. Most recently, you were director of marketing and product development and director of international business at the American Medical Association, responsible for numerous projects related to AMA's publishing activities.

Prior to joining the AMA, you held positions at the American Academy of Pediatrics, where you were a senior managing editor of scholarly journals, an executive editor of the journal *Pediatrics*. You've also worked at the University of Chicago Press where you were a senior production editor.

So with that as an introduction, why don't we dive right into all of this. The point you make in the blog post, which we will link to from our site, is that, gosh, it's been about 18 years now since Tim Berners-Lee brought us the World Wide Web, and yet scientific publishing is still around. By so many ways of looking at it, it really shouldn't be, and yet it is. Tell us about why we've managed to survive this far.



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CLARKE: (laughter) That's the big question and one of the questions I wanted to explore in this post. I had listened to Michael Nielsen give a talk at the STM conference in Frankfurt.

KENNEALLY: Can we tell people for those who are listening but not entirely familiar, just a bit about Michael himself?

CLARKE: Michael is a former scientist and a trained scientist in particle physics, I believe, and currently is working on a book, but he has a blog that he writes. And one of the posts that he wrote last year was about whether scientific publishing was about to be disrupted and he followed that up with a talk that I had seen at the STM Association's annual conference in Frankfurt.

KENNEALLY: And I should say, in that post, he basically took the opposite view of you and suggested that it ought to be disrupted, really, given the behavior of certain parts of scientific publishing. It was in fact a challenge, really, wasn't it?

CLARKE: Well, when he gave his talk and I read his posts so I found myself sitting there agreeing with him. I said, yeah, well, of course, of course, of course. But then I said, wait a minute. I think I would have agreed with this argument a decade ago or longer, and so why haven't things changed yet? What's going to be different over the next five years or 10 years from the last five or 10 years?

KENNEALLY: Right. And to summarize his argument, he pretty much said that scholarly publishing, scientific publishing, was still focused on the production side of things and really had taken its sweet time becoming technology-driven.

CLARKE: Yes. I think that that's a good summary. And I think that that's true to a large extent. But I think that that argument, while I'm sympathetic to it, I think it ignores – or it's too technologically oriented, I think.

I think that the scientific publishing industry or community is one that is deeply conservative with a small C, and that one really needs to look at the cultural aspect of the scientific publishing enterprise as much as the technology.

KENNEALLY: And in that culture, you see some entrenched traditions, if you will, but you've also seen some signs of change. Talk us through that.

CLARKE: Well, as far as the entrenched cultural institutions of scientific publishing, I point out in the article that the scientific publishing was started originally to solve two problems, one of which was what I call dissemination, which is simply transmitting scientific work. This goes back to before there was such a thing as a journal, and why journals were invented in



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the first place was prior to there being a thing called a journal, scientists used to send letters around, which if you can think of writing a bunch of letters and passing them back and forth as a very inefficient way to transmit information.

KENNEALLY: Especially in about the 16th century, as well.

CLARKE: Yeah. This was before –

KENNEALLY: The post office has gotten a little bit better since then.

CLARKE: Certainly before e-mail, but before FedEx and regular post deliveries, so that was one of the reasons.

Then the other reason was what I call registration, which was just claiming credit, which is one of the most important things that a journal does. If you think about how science works, it's really a reputation-based industry where your position and your career is largely based on your reputation, which is in turn based on your publication record. So claiming credit for discoveries are incredibly important.

So those are really the two reasons or the two problems, I should say, that journals set out to solve originally.

That being said, I think that technology has come up with more efficient ways of solving those two problems, so we don't really need a journal. The only problems journals needed to solve were those two – dissemination and registration. There are must easier ways to do it. There could just be a website out there.

There are in fact websites like this, like arXiv, which is used extensively in the physics community where authors could simply deposit a manuscript and there could be a date stamp and that's it.

But there are other things that journals have taken on over the centuries.

KENNEALLY: If you will, the value add to the publication piece of this, right?

CLARKE: Yeah. So there are other roles that journals have grown into within the community. And the most important one of those to many people is peer review, what I call validation, which is simply having colleagues vet work before it's published. This is incredibly important and is the sort of gold standard in scientific and scholarly publishing today. That's one of them.



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Another one is what I call filtration, which is simply helping scientists make sense of the vast amounts of – or find their way through the vast amounts of literature that's published every year. There's probably something on the order of 1.2 to 1.5 million scientific scholarly publishing articles published every year, so nobody could even begin to make their way through that volume of literature.

So journals provide some ways to filter that huge amount of information. The most obvious way is simply by nature of specialties. The journals tend to define a specialty, so you have a journal on pediatrics, a journal on cardiology, etc. So in that sense you know what you're reading about is sort of contained within the subject of the journal.

But then even within each subject, there's a hierarchy, so certain journals sort of develop a reputation as being more important to a field than other journals, so in that sense, you can say, OK, I'm just going to read the articles primarily from the couple of top journals in my field. That just sort of is a way in which journals help to filter the huge amount of information that is produced every year.

KENNEALLY: Right. But you also pointed out an interesting paradox, I thought. So even as filtration happens, it begins to sort things out, and then what happens is a new specialty arises from that filtration process. But rather than making things easier, if you will, it can complicate them because the specialty itself ends up growing.

CLARKE: Yeah, certainly. There's this constant branching process where the journals are constantly tending toward increased specialization. You're absolutely right.

KENNEALLY: Which is fascinating, I think, and again, gets back to this whole point about validation. But there are some other aspects of the publishing world. So you've mentioned validation, filtration and there's a third.

CLARKE: Yeah. The third is perhaps the most interesting. It's what I call designation. As I mentioned a little bit earlier, the economy, if you will, of science, the professional economy, is based largely on reputation, and that reputation is based largely on one's publishing record, which is to say, which journals one has published in.

A scientist that publishes in top-tier journals has a much greater chance of being promoted and receiving grants and other kinds of funding. So in that sense, one's career in science is largely based on what journals one publishes in. So to that extent, journals are incredibly intertwined in a non-technological way with the culture of science.

KENNEALLY: And where this leads us is kind of the refutation of Nielsen's point in that technology can't really move things all that much because there's a culture here. Have I got that right?



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CLARKE: Well, yeah. If one set about and said, OK, how could we change this? As I mentioned, it would be relatively easy to come up with – and indeed, people have already come up with – more efficient ways to solve the problem of dissemination and registration.

And then you go to the next set of roles that journals fill, and you could say, OK, well, what about peer review? And you could theoretically – nobody, I think, has succeeded in doing it – but you could theoretically come up with some peer review system that sort of sits outside of publication. I don't know that that would necessarily be more efficient, but you could do it.

Filtration. Again, I think you could come up with something, and people have taken some steps at it. There is a product called Faculty of 1000 that provides post-publication reviews of articles. Journal Watch from the New England Journal of Medicine does something similar. They come at it from a different way but they do something very similar. Now, all of these products rely upon journals to a large extent to even begin to know what to review and what to summarize.

But I could imagine you could come up with some more sophisticated – perhaps use some semantic technology to come with some additional filtering mechanisms and improve the process of filtration to some extent.

But designation is, I think, the really hard one. I think it would be incredibly difficult to come up with some technological solution to designation. So to that extent, until somebody comes up with a way to do that without journals, I think journals are here to stay.

KENNEALLY: That's comforting news for people, of course, who are publishing journals and maybe even for those who are reading them seriously. But there's a sort of an interesting piece of this, which is that while the journals and the structure that supports them isn't about to fall anytime soon, by your argument, you do nevertheless expect change to continue to happen.

And your co-author on The Scholarly Kitchen blog, Michael, Kent Anderson, has suggested that in a way, scholarly publishing hasn't been disrupted because it's taking care of the disruption itself. It's taking on the responsibility to be disrupted.

CLARKE: Yeah. I think that I have some sympathies with that argument and I'm inclined to agree with Kent on that. Certainly publishers in this space, as well as scientific societies and other organizations, have been very innovative from the get-go working in XHTML work flows, for example, far before XML even existed, and have long had – most of at least the major scientific journals have been on the Web for a decade or longer.



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So I think publishers in this space have, to some extent, prevented disruption by being out ahead of the curve.

I do wonder though – and Kent and I have discussed this a little bit on the blog – whether there is a distinction between being disrupted and becoming less and less relevant. So that is something that I do worry about a little bit about with journals, which is that while, for all the reasons we’ve discussed, I don’t think they’re going anywhere, there may be other tools and technologies that become increasingly important to the field and especially important to the industry in terms of the locus of revenue. So I could see journals becoming, let’s say, increasing irrelevant from a financial perspective.

KENNEALLY: Well, that’s something that’s a bit bracing, I think, to hear.

We’re talking right now with Michael T. Clarke of the Clarke Publishing Group and someone who’s a longtime veteran of scholarly publishing.

Michael, take that just one step further, and maybe it’s even something that’s worth tying to some of the work you’re doing. You’ve just launched at Clarke Publishing an iConsult service that sort of brings in these in-person briefings to scholarly publishers and others. If you tell them that their revenue may be threatened, I’m sure that that gets their attention. What are some things that they might be thinking about and addressing that can prevent any kind of serious financial disruption to them?

CLARKE: That’s a good question, Chris. One of the things that I advise all the publishers I work to do is to, at least as a thought experiment, to imagine that at some point in the not terribly distant future, it will become increasingly difficult for them to monetize the original research that’s published in their journals and to think about whether there are other things they can do, other services and products they can provide, especially those that help interpret and better organize the original research that they publish and whether they can turn that into new revenue streams.

KENNEALLY: So interpretation and organization may be something that the publications will be moving towards.

CLARKE: I think so. I think that the sciences, just the output just continues to grow and as we talked about with the ever increasing trend toward specialization, it becomes increasingly difficult for scientists in different specialties to communicate because often you get into such specialty research that somebody in another field finds it very difficult to read an original paper and be able to understand what’s going on.



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So I think to the extent that publishers and scientific societies can help interpret, aggregate, summarize, alert, provide other sorts of services, do some data mining that will help scientists better keep abreast of and understand the scientific research that's being published, I think that will –

KENNEALLY: Right. Well, that's some interesting food for thought from The Scholarly Kitchen, if you will. Michael, I appreciate chatting with you about this. And before we go, let's tell people where they may hear you go on further about all of this. You're delivering a keynote address in Washington in April at the Allen Press Emerging Trends conference and some other things on your schedule as well. Tell us about those briefly.

CLARKE: Yeah. I'll be at the Allen Press Emerging Trends symposium on April 8 in Washington. I'll be at the sixth annual meeting of the International Society for Medical Publication Professionals in Arlington, Virginia, giving a talk there on April 19. I'll be at the National Academy of Sciences e-journal summit in March, March 24. And I'll be giving talks at the Council of Science Editors annual meeting and the Society for Scholarly Publishing's annual meeting in June out in San Francisco.

KENNEALLY: We look forward to staying in touch with you because the authors and publishers that we work with at Copyright Clearance Center, a great many of them are in this field of scholarly and scientific publishing and we're an important partner for them and we want to see them thrive and we want to be sure we understand the situation. So turning to someone like you for the latest information is a great help.

We've been chatting with Michael T. Clarke of the Clarke Publishing Group about why scientific publishing surprisingly may not be as under threat as one might think, given all the circumstances. Michael, thank you so much for joining Beyond the Book today.

CLARKE: I'm glad I could talk with you this morning, Chris.

KENNEALLY: It was a pleasure to do it and as I say, we will be following this subject further on our site. We will link to the various blog posts that we mentioned. We know our audience will be very interested to see what you write in the future, and thanks again.

For all of us at Copyright Clearance Center, this is Chris Kenneally at *Beyond the Book*, and 'bye for now.

ANNOUNCER: *Beyond the Book* is an educational presentation of the not-for-profit Copyright Clearance Center with conferences and seminars featuring leading authors and editors, publishing analysts and information technology specialists. *Beyond the Book* is the premier source for knowledge on the latest business issues facing today's dynamic publishing industry, from initial research to final publication and beyond.



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