



Interview with Mike Taylor, Digital Science

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KENNEALLY: When reporters cite numbers related to the coronavirus pandemic, they usually are an accounting of grim milestones – so many new cases in one state or another country, so many more deaths within a hot zone of illness. Yet not all numbers on COVID-19 are quite so bleak.

Welcome to Copyright Clearance Center’s podcast series. I’m Christopher Kenneally for Beyond the Book. The global scientific and medical community have dramatically stepped up the pace of research about COVID-19. According to the research data platform Dimensions, which includes preprints and datasets alongside more traditional research outputs such as journal articles, nearly 4,000 journal publications have appeared related to the pandemic in just the few short months since the disease emerged. Mike Taylor is head of metrics development for Digital Science, whose portfolio of companies includes Altmetric as well as Dimensions. He joins me now from Oxford in the United Kingdom. Welcome to Beyond the Book, Mike Taylor.

TAYLOR: Hey, Chris. Thank you very much for having me on your podcast.

KENNEALLY: Well, we are excited to learn about these numbers. As I said in the introduction, there are so many numbers that make you grimace. These are numbers that are exciting, because they give the world hope that researchers are leaving no test swab or chest x-ray unexamined in the pursuit of a vaccine and treatments for COVID-19.

The Altmetric publisher tools offers a real-time picture of the nature of all this activity. My first question, Mike – in your experience, has there ever been a time when academic research received more attention?

TAYLOR: No. This is a unique moment in scientific research communication history. It does have echoes of a previous epidemic, and the one that I’m drawn to, the one that I often speak about, was the Zika epidemic that was largely centered in Brazil a few years ago, at the same time as the Olympics. There, we saw this extraordinary occurrence where research was happening at near real time. For us working in Altmetric and working in Dimensions, it really was very exciting for us, because



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our tools, our platforms, are built on very different technology from previous platforms, which means that we capture data really quickly.

We talked about the amount of publications that have occurred around COVID. This morning, we've yet again updated our database. This is Dimensions. We now have 15,148 publications based on COVID using the query that I use when I'm looking at the altmetrics. There are other queries that produce a slightly higher number. It's extraordinary to see how quickly researchers are focusing on this problem, and also really interesting to see who's doing this work – where about is this work happening?

For example, we might think of this as being purely a medical issue or an issue of virology or epidemiology. Actually, there are all sorts of things going on here. We're seeing people talking about planning and tourism and travel, communication, public health. Really, this is one virus, but it's a phenomena in 12, 13, 14 different fields. Understanding that and understanding how we listen to research is really interesting.

In terms of the altmetrics of the thing, the thing that we're going to talk about here is the quarter-million tweets that happened right at the beginning of the month – an absolutely extraordinary number of tweets all citing research in one week. That's the kind of volume that we normally see tweeting about the whole of biomedical research perhaps in a couple weeks. So really seeing that concentration of conversations – people exchanging links on Twitter – absolutely phenomenal.

KENNEALLY: And we should tell people a bit about the sources that you follow. They can range from social media, such as Twitter and Facebook, to mainstream media to Wikipedia, and of course, to peer-reviewed publications. But lay out the landscape for us. What are the areas that you follow closely?

TAYLOR: If we're going to think about altmetrics in a broader scale, it's been around for nearly 10 years. And even before then, it goes back to a study area of work that was called webometrics. I've been described as one of my colleagues as being like one of the grandfathers of altmetrics. That's probably about right. I used to work at Elsevier, and I was looking at how people were using social media way, way back – late '90s kind of stuff, way before people had heard of altmetrics. But we were interested in seeing how people were using the platforms at the time. So altmetrics has this long and illustrious history, really going back to the '50s, '60s, because it emerges out of bibliometrics. We've always been encouraged to look at where people are having conversations, where people are exchanging information about research.



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The company that I work for, Digital Science – our platform, Altmetric, Twitter is definitely our biggest data source, followed by patent citations. But increasingly, people are absolutely fascinated by policy documents. So we have a particular part of our platform that goes out to places like the World Health Organization, to the CDC, and it digs up the documents that they publish on their websites, scans through them, looks for citations in the same way that we look for citations in academic literature, and then we report those on the Altmetric tool.

For example, I was looking at the COVID research, since we're talking about COVID, and I was looking at the enormous number of documents that the World Health Organization have published since the beginning of the year. It must be hundreds, in multiple languages, linking to much of this research, but also going back to looking at the SARS, the MERS epidemics of previous years. So it gives us a really interesting picture, because this isn't researchers talking to researchers. This is people who are involved in public health. What research are they using? On Wikipedia, we get a similar kind of picture. There's a really big focus on the kinds of research that really is trying to make sense of this, trying to digest it for the public.

What's really interesting is to see that there are these different – the different kinds of research that's being talked about. What academics who are focusing on, say, virology are interested in communicating can be quite different from what the public are interested in.

KENNEALLY: Indeed. And what's interesting to me about this cross-disciplinary activity that you follow is that it maps to the real world. This is a disease and a crisis that isn't only a public health crisis. It's an economic crisis. It's a public policy crisis. It's so many other things as well. And to really get any picture of it requires that kind of multi-point view.

TAYLOR: Absolutely. I was talking with a small academic publisher based in Oxford quite recently. They're working on hospitality. And they've already got several book submissions from academics who want to write books about the ongoing pandemic, because they're interested in how do hospital – oh, sorry, hospitals – how do hotels reengineer for a world where this kind of virus is an issue? What's going to happen with tourism? How is Airbnb going to respond? So almost every field we look at has some interest in this area, and that's absolutely what we're seeing in the research, as well. It has galvanized people to focus on this problem. There are millions of researchers around here in the globe. They are working on this problem from their own particular area.



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KENNEALLY: And it is a community of communities in that cross-disciplinary activity, right? So you've got public health policy advocates speaking to others in their field, but also across fields. You've got the scientists themselves corresponding, talking to a researcher in another country in another lab.

TAYLOR: This is one of the things that's really interesting, and we're beginning to dig into this. In fact, I was talking to a group of researchers in Brazil over the weekend. These are people I've previously talked to about Zika. We were thinking about the issues of local media and local research. It's a really common occurrence that media likes to talk about research that's happening in their own backyard. So our local quality newspaper, *The Oxford Times*, likes to celebrate Oxford researchers. Why not? This is what the media does. But we have an immediate issue here that there's a possibility that that regional preference, if you like, for talking about regional research runs into problems when you're talking about researchers on the other side of the globe.

If we look at the mainstream media's interest in COVID, really it starts picking up – we track global media, right? It really starts picking up in March. Whereas if we look at social media, for example – again, the big peaks were in March and April, but we can track back to the end of December, where there are academics talking about this epidemic and trying to identify it and sharing literature. So you have the sense – January the 1st I think is probably the best tweet that I found, from @MackayIM on Twitter. He is – I assume it's a he – is assembling a reading list to inform the people who are following him about epidemics like this. January the 1st – this is ancient history in terms of this pandemic, right? You get a sense of the specialism – the specialist community that's talking about this issue that nobody knows how serious it is. And as you say, it grows – it accelerates over the course of this year, and you can see that in the data that we've got that news and Twitter are particularly responding to the emerging crisis in Europe and the USA.

KENNEALLY: All this is fascinating to all of us, because we are all affected by the pandemic wherever we are in the world, but it's especially interesting, I imagine, to publishers who use a variety of Altmetric tools to monitor their own publications to get a better sense of the direction that they ought to pursue and the changes – the kind of course corrections they may want to make. Give us some insight, Mike Taylor, into how this information is serving publishers.

TAYLOR: So in terms of COVID, it's probably a little bit difficult to go into details about that, because we're still in the middle of this issue. There have been some publisher-led responses in terms of making their content freely available online. And one of the things that's quite interesting to know about that is that when people move towards an open access – strictly speaking, these publications are probably



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not actually open access, but they're freely available. Subtle difference there. We do see an increase in the numbers of shares. We do see an increase in the number of news articles and so on. So I expect to see a relationship there between publishers making their content available free and an increased volume of people talking about that research.

But increasingly, what we're finding is particularly with emergent publishers, smaller publishers, they're very interested in the data that's available in Altmetric. Actually, I say small publishers – it's true for all publishers. They're very much focused on the data and what direction they're going into. And when we talk about open access and that move towards open access publishing, it's all the more important, because we have to ask ourselves, well, what is the purpose of open access? The answer is generally speaking that we're trying to engage on a broader platform with a wider community of people who are interested in science and affected by science. So the motivation for open access and what we do with altmetric data – what we're able to do with altmetric data – has a really strong relationship there. And when we can see that that openness of research helps support an increasing volume of research – sorry, an increasing volume of conversations about research – that suggests that we're really on to something in terms of turning towards a more open science-based environment.

KENNEALLY: And that level of engagement, that's something we hear about across all platforms of social media. We're familiar with influencers in the Instagram world and on Twitter and elsewhere. Are we seeing emerge a new species of influencer in the scientific community?

TAYLOR: I think that's really a very interesting question to ask. One of the things that I did a few years ago now – I had the privilege of working with a group of researchers at the University of Ireland in Galway. We were actually doing swine flu, looking at conversations around swine flu. Actually, what we found there was that the academics who were most vocal on social media weren't necessarily the same ones who had high academic profiles. They were, if you like, influencers. Now, we didn't use that word, influencers, and we weren't using that because it hadn't been coined yet. But there are certainly people who have a gift for communication and who are finding their voice on social media.

So although it's a little bit difficult to say that there is definitely a body of people there – although to some extent you can see people like @soph.talks.science on Instagram – they are really enthusiastic about using Instagram to communicate research. And we do see people on Twitter who have a mission, if you like, to share research. There hasn't, as far as I'm aware, been a study of this. Now, in part that's because academic communities are quite narrowly focused, so that



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generally speaking, by the time you get to being a full-time academic, you do have your specialisms, and that necessarily means that the group of people around you is quite small. But we do know that universities, and particularly universities and funders, are taking the steps toward communicating their research much more professionally than we've seen before. So that suggests to me that there will be this expanding community of influencers, if you like – communicators.

KENNEALLY: And, Mike Taylor, we opened our discussion with some numbers. As I said in the introduction, those numbers can be very grim, can be sad, depressing, all sorts of down emotions. But I wonder whether you experience a sense of excitement when you see all this activity going on – the research, the real devotion and commitment among the scientific community to seek out treatments, to find a vaccine. That must make you a bit more optimistic about the situation than otherwise.

TAYLOR: You know, people have often said that academia can be very slow to respond – that people have to fill in grants, they have to come to the end of their projects, and so on, that it's quite a secure route towards developing knowledge. But what we saw in Zika, what we're seeing in COVID, is an extraordinary response amongst academics.

If we look at the data that's available to us, discovering, finding what people now know about this virus that didn't even exist four or five months ago – absolutely extraordinary. And of course, as Newton said, we stand on the shoulder of giants. This work wouldn't have been possible without the people who came before it, the people who publish 4,000 to 5,000 articles about coronaviruses every year, the people who did all the work on MERS, on SARS, and the other COVID viruses – absolutely extraordinary to see that enormous explosion of study in the vaccines, on the cures, on the therapies, and all of it's based on the science that came before.

That's one of the things that's really interesting. I got lost in a paper the other day I was reading about the protein structure around the outside of the coronavirus. It was, I think, an American academic who was observing the similarity in structures between this and previous coronaviruses and suggesting that this meant that these structures could be used as a target for vaccines. It is just extraordinary to see this burst of activity, and yeah, it absolutely fills you with optimism to think what can happen when we as a species come together to work on a problem. It is a global effort. It is an absolute global effort.

KENNEALLY: Mike Taylor, head of metrics development for Digital Science, whose portfolio of companies includes Altmetric as well as Dimensions, thanks for joining me on Beyond the Book.



TAYLOR: That was a real privilege. Thanks, Chris.

KENNEALLY: Beyond the Book is produced by Copyright Clearance Center. Our co-producer and recording engineer is Jeremy Brieske of Burst Marketing. Subscribe to the program wherever you go for podcasts and follow us on Twitter and Facebook. The complete Beyond the Book podcast archive is available at beyondthebook.com. I'm Christopher Kenneally. Thanks for listening and join us again soon on CCC's Beyond the Book.

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