Transcript for
Expert View on Journal Metrics Webinar – 3rd July 2017

James Hardcastle: So, when looking at distributions, I think people often think of things like Fruit Flies as the standard model used in science. We genetically engineer them quite easily and they're nicely normally distributed. So, your mean and median Fruit Flies are both 45 and a half mm long, your average, your modal fruit fly is 45mm long and they have quite a small range. They're going over between 36 and 55mm, so everything is nice and close together and in that traditional normal distribution. That means we can physically analyse it very easily, we can look at them and do the standard statistical tests on them and things like using mean works very well.

When we look at things like citation, so in this case I've taken the citation content from the Journal of Nature, the mean cites for this is 143, the median article gets 76 citations. But, the mode, the most common, is zero and its range is stretching from zero to over 5,000 with the very high standard distribution. This means that when we try and look at things like mean as the impact factor effectively does, we're looking for a very skewed distribution, and therefore trying to apply standard physical tests to citations is challenging.

The same also applies to things like usage events. Again, very very highly skewed, huge range even if the difference between the mean and the median is a bit lower, and the same also applies for Altmetrics. Most articles don't have an Altmetric score. The median Altmetric score is one. So, for the Taylor & Francis set of articles I have picked to do this data, the average Altmetric score is 3.4. So, effectively any Altmetric score above 2 or 3 is actually pretty high. We can do a brief broad experiment that I have stolen from Dr Ian Rowlands, about Fruit Flies, that if we could genetically engineer a Fruit Fly to have the same distribution as citation, most Fruit Flies would be smaller than average or smaller than the mean. The cycle number, because of the mode being zero, wouldn't exist. You would also have one Fruit Fly that was over a 1m long, and then presumably, it would go and eat all of the other Fruit Flies in the vicinity.

This also leads to issues when we look at things like impact factors where they become very very unstable around small journals. So, the average variance here for a journal publishing fewer than 50 articles a year is over 50%. So, you are expecting your impact factors to change plus or minus 50% year on year, for a particular journal. As you get up to journals that are more sort of 500 articles a year, or, in the case of something like PLOS One, thousands of articles a year, your impact factor becomes inherently more stable. So, impact factors because most

journals are small, do have this very large variance year on year and it often comes to you having one very high cited article, that then moves through your citation window and falls out of the impact factor calculation four years after being published and therefore your impact factor drops. So, small journals tend to have very high variability of impact factors.

When we talk about metrics, we have to think of all the different audiences who are using them. So, we would have authors who are going to look at metrics to try and understand which of my works should get into the top of my CV to help me get tenure. Will publishing in this journal help progress my career? They also want to know things like who has taken my theoretical work and applied into a wider, a different aspect? Readers want to know is this paper important? Why should I, as an individual, spend my time reading this piece of work? Does this paper relate to my particular field or is it taking a completely different tangent to what's of interest to me as a researcher?

Institutions struggle to know even why does the faculty publish? What are the outfits that the university has created and how do we understand that? The institutions are very keen on understanding what is going to push up their ranking in things like the Times Higher Education ranking. So, which departments are the strongest, which department is bringing in the most grant money, which department is publishing the most research that is being highly cited? Who should we be giving more resources to so we can improve our ranking?

Funders have exactly the same problems as institutions. They want to know what have our grant awardees actually published? Often for funders, it is quite easier for the first few papers that come out of a particular grant. It is easier than a couple of years down the line using that research with an additional source of funding for reanalysis. People often won't tell the funder that they have also additionally published this work out of their grant, and they also want to answer that question. What is my spending? What effect has my spending had? Funders are getting more demanding to know how are they getting value for money? How is their work having impact?

So, as a journal editor, that gives you a bit of a quandary. There are quite a range of metrics and selecting the right one for your journal, selecting which metrics are you going to look at for your journal as a long-term goal are quite different. You can be targeting usage; how many people are downloading content in your journal? You are looking at Altmetrics, or specific Altmetric indicators. So, how many policy documents have cited a particular work? If your journal particularly focuses on policy implementation. You can also be looking at citations and with citations, journal level metrics such as impact factors. The thing to bear in mind with this that these things are in contradiction. The work that might most improve

and be most highly cited to improve an impact factor might not be the most highly used or the most highly policy relevant work.

Therefore, if you start to only focus on citations, you might decide to stop doing work for students or early career researchers or broader pieces that are highly used within your journal. Conversely, if you solely focus on work that is going to be of relevance to policy makers, policy makers tend not to be writing papers and citing them and therefore, your impact factor may reduce and decline. So, there is this contradiction between the various different ways of measuring a journal's impact and how that links together.

We also have a set of guides and resources on both the Author Services site and the Editor Eesources site to help you navigate this world of metrics and understand more about things like impact factors, citation, Cite Score and other journal level metrics. With that, I am going to pass over to John, who is going to give his presentation.

Dr John Harrison: Okay, thank you James. Welcome everyone. I just want to start by saying a few words in terms of context. So, I am an academic researcher but I am also an editor of one of Taylor & Francis's journals, actually the Journal of Regional Studies. What I want to spend the next five or ten minutes doing is just giving a bit of context in terms of both my experience as a researcher, but also as a journal editor; some of the ways that metrics can help and maybe some of the unanswered questions that maybe we want to think about in terms of metrics going forward.

So, if we can go onto the next slide please James. I think when we think about metrics, it is really important to think about the actual research climate and publishing climate within which we work. So, what I often refer to and I think it links neatly with what James was talking about in terms of the fact that you can have a single paper that has a large impact and can skew quite a lot of the things like impact factor. What I often would refer to and I talk to people about this is what I would call the 80/20 publishing climate. This really is a suggestion that 80% of the impact or whatever we measure with metrics, whether it's the use of an article or whether it's the number of citations or the number of downloads, the number of views, is usually around 20% of the published output within that journal. Conversely, you have got a large number of papers, 80%, which is only generating 20%. I think that is an important climate within which to think about research.

So, within publishing, there is a number of maxims that are widely aired. The first one which we have all heard of probably is Publish or Perish, and from my personal perspective, I disagree with this maxim because I think in the current

climate, you can still publish *and* perish. If your research in that 80% which people are not necessarily reading or finding or accessing, you can publish the research, but is it having the impact that we as a researcher but also as an editor in a journal want that research to have? I think the other maxim there 'Visible Advantage' is probably more the focus when I am thinking about what my role as an editor on a journal and also as a researcher, because basically we want to make research visible. For people to access it, it needs to be visible. If people are not accessing it, if the information, the science that is in the paper vanishes, then it's of no use to anybody.

So, in terms of that, I think the other aspect here is obviously the higher education sector. As academics, we're all being judged on the quality outputs that we produce. In the UK where I work, we have a research assessment exercise, an excellence framework where research is measured against these three criteria – originality, significance and rigour. So, that is what we are being judged against as academics when we are writing papers. But I think it's increasingly the case, and certainly publishers are looking for this too, they are looking for the original significant work that has been rigorously undertaken, but I think as a journal editor, something I have observed over the recent years is that I think authors are increasingly looking to get this from their publisher or their journal. A lot of blood, sweat and tears goes into producing an academic paper.

So, what they are looking for from that journal and from the editors that they work with is originality. What are the original features of your journal that is going to attract them, because they need to entrust their work with you as a journal? In terms of significance, this is, I would say, is with the standing of the journal within the field. Is it the place that other leading academics want to publish? Is my work going to look good and by found by people who regularly use that journal? And then also, rigour. So, this can be through the editorial process but also the work that the publisher does and the journal does in terms of the promotion to make the research visible. So I think that is an important context before we start thinking specifically about metrics.

So, I never thought that during a presentation I would be referring to Donald Rumsfeld, but I think this is a very useful way of thinking about metrics is enabling us to do. When we think about and look at a journal or any published output, there are a lot of things that we now know about. So, what we might call in Donald Rumsfeld terminology, the known knowns. We know how many people look at work and know it exists. So, if you send out through your journal a table of contents alert, you know how many people are on that mailing list, you know how many people are looking. You can look at metrics such a page views, the number of people on your mailing list. You can see how visible the piece of work is, the material that is within your journal.

The next thing is what you want people to do is not only look, you want them to read. You want them to engage with the work, so you can look at the number of times an article is downloaded, and really that gives you a sense; there is a metric there that you can measure how many people have looked and then go on and actually read and potentially make use of the work. Then the final one is academics but also it is journals, when you think about impact factor. You don't just want people to read the work, you want people to actually then engage with it, use it in their own work and the classic metric here is obviously the citation, which leads into things like impact factor for journals.

The key thing here is what I would call the attrition rate. So, the numbers decrease as you go from looks to reads to uses. As an academic, you are trying to minimise that attrition rate. You don't want people to look at the work and then think no, I am not going to read it. I am not interested. You want people who are going to look at it, know the work's there, read it and then engage with it.

So, in terms of metrics, I think there is some important things to think about. These are the known knowns. I think metrics as we currently having them are very good to help answer questions that start with the word 'what'. So, what is the impact factor of a journal? What is the impact of a particular article, how many citations does it have? And also questions like 'where'. So, where in this diagram or this flow diagram does an article potentially lose its readers? So, if you know a lot of people have looked at but then don't go and read it, you can see or potentially identify where the problem is.

Where I think a health warning with metrics is that they can potentially help to answer some of the who, how and why questions but sometimes they can't help at the moment. So, potentially developing metrics moving forward, this is probably the area where metrics and the technology might be able to help us. So, what am I thinking about here in terms of questions? I think a who question is quite important because you can see the people who have gone through this diagram. So, if somebody cites your work, you can go and look at the place that they have published, where they have cited you, you can see who that person is and why they have cited you, how they have cited you. What the problem is, is that it's much harder to know who are the people who maybe looked at the work but then not read it, or the people who have read it and then not used it. It is not as easy to track some of those things. But also, the question of why is where there is an interpretation that is required.

So, for me, I think metrics are much better to be seen as generating questions rather than necessarily providing answers. They do provide some answers, but I think it is the questions … so it's not simply just a case of saying my impact factor

in my journal has gone up from 2 to 2.5. That is the answer, it is what does that actually mean? How can that help us to develop the strategy for the journal going forward in order to maximise the potential impact and the visibility of the work that is published?

So, questions I think for authors, editors, publishers are some of those questions, the known unknowns. So, why do people look at work but then don't go and read it? Obviously, there is a whole set of guidance and advice that is being produced off the back of this type of question. So, often the typical advice is that usually there is an obstacle putting readers off from going on and reading the work. So, most likely it is the title or the abstract; something that puts them off at that stage.

There is also the question of why does those who read not go on and use? The common advice, and this is where the interpretation is important, because you look at an article that has had a lot of readers, a lot of people have downloaded it but maybe not a high number of citations, and the obvious link to make is that it doesn't engage the reader. So, somebody has read the article and thought okay, it tells me what the research is, what they have found, but it doesn't go on and say what the relevance of it is or how is that going to take the debate forward, how is it going to change the way that other researchers might go about doing their research. So, that is one thing. But sometimes you can miss other things and so you might find that the answer might be that it is other users, non-academics, so, students are a classic example which would give you high numbers of article downloads and reads but won't actually cite the work. So, this is why its interpretation, asking these questions, is really important.

In terms of improving impact and the work that as a journal and as authors we can look at is, basically we can try to increase the number at the start of the process; the number of people looking. So, increasing the visibility of the articles or the work, or minimise the rate of attrition as you go from looks, to reads, to uses. So, this for me is all about visibility and quality. Those are the two things that we can do, both as authors and as editors to try and help authors and research reach its intended audience and have that added value.

So, in terms of the final two slides I have got here, is some ideas of things that you can do to try and interpret metrics in order to help develop the journal and advise authors. I think one of the most important things is are there certain characteristics of the 80% of papers that maybe don't have very many downloads, or citations, versus those maybe 20% which have the highest citations? This is something that I have been involved in, I have done as an editor both for my own benefit but also for part of the journal, some of the things that emerge from this is you can look at, for example, the titles. So, we found that some of the most highly cited, engaged with articles had quite short, snappy titles. We found that a

lot of the papers that don't have many citations or many users in terms of looking at and reading the work, tend to have very long titles, very narrowly focused, often had a case study attached to it. So, narrowing down the focus of the work.

In terms of topics, I think it is important to try and identify what may be some of the emerging themes that you can help try and develop through your journal, which topics are dominant, so these are your classic, staple papers that people engage in and are coming to your journal for, but also potentially what are the topics that are receding? So, a topic that might have been highly cited in the past, has started to go up over the top and is starting to decline. So, it is helping you to identify the topics and also work that is tackling more or less important questions. Generally, the papers that are the most engaged with are the ones that are tackling real world, relevant big fundamental questions.

Then, how do you spot and attract the research with the potential to be that 20% type. So, thinking about strategy, what is your pipeline to attract that interesting new research? Then during the review process, can you spot those papers which have the potential to be uplifted? So, if you don't do anything with them, they will probably just fall into the 80%, not really visible. But are there quick things that you can do in terms of advising authors on their titles and their abstracts, do you provide guidance to authors on making their research visible? I know Taylor & Francis do quite a lot of that in terms of helping authors, but there are things that can be done.

So, the fundamental two questions are - are you maximising visibility? So, the classic ways that the data backs this up is that special issues on a particular theme attract more readers, have higher citations, but you can also create certain themed issues. If you have got a backlog of papers, you might have 80 papers ready to be published online but haven't gone into the print issue, could you select five or six of them, create a theme, put an editorial to it, because that does have the potential, and certainly we have found that that can generate more interest in the research. There is the obvious question about open access and also a social media editor in terms of visibility. In terms of attracting and maximising quality, sometimes it can be hard to change researcher practices in terms of where they publish, but can you attract early career researchers? And also, how do you incentivise researchers and reviewers? Reviewers have an important role in increasing the quality that then helps your metrics. So, do you recognise the work that reviewers do? Thank you.

Moderator: Thanks so much John. Please do remember to continue to type your questions into the questions box, and we will answer them in the Q & A at the end. We will now hand over to Dr Grant Abt for his slides.

Dr Grant Abt: Cheers, thank you very much. Just to give you some background on myself. I am a reader in sport and exercise physiology at the University of Hull, and I am also an executive editor at the *Journal of Sport Sciences* and the social media editor for the *Journal of Sport Sciences*. *JSS* is a well-established journal. It was established in 1983. So, we have got a long history in sport and exercise science. I have been an editor for the last five years and the social media editor for the last four years. I would like to talk a little bit over the next five minutes about some of my experiences of being both an editor and also being the social media editor, something that John mentioned at the end there.

I would like to cover three aspects. Some of the things that James talked about, in terms of the metrics of impact, and then some of the ways that I use as an editor to assess and to monitor my own performance as an editor but also the associate editors who work under me. And then finally, talk about my role as the social media editor and how we can use some of the metrics, particularly around Twitter to examine the 'performance' of the journal beyond the traditional metrics.

When we talk about the impact factor, which is the most obvious metric that everybody uses, we have to think about what we mean by the term impact. So, impact on what? Is it as John was talking about, impact on downloads, impact on citations, impact on individuals from the public, impact on other academics, impact on policy? There are so many different ways of quantifying or defining impact, and when we talk about the impact factor, there is a very specific measure of impact and one that has a very narrow definition.

I think we should also look at some of those broader measures of impact and James has looked at some and John has looked at some as well and I will show you some examples from two different journals who are going beyond the impact factor.

Just as a recap, the impact factor is simply a ratio of the number of citations in the last two years, as a ratio of the number of publications. In the sport and exercise sciences, some of the journals with the highest impact factor publish very few papers but, because of the number of citations that they get as a ratio of those publications, then their impact factor is very high, but the highest one only publishes about 12 articles per year. From an impact factor point of view, it is very high, but what is the reach of that journal compared to the *Journal of Sport Sciences* where we publish several hundred papers per year? We need to remember that, that the impact factor is simply citations and publications, and some people suggest that we should change the name of the impact factor to simply being something that reflects that, rather than being about impact, it is simply a ratio of one compared to the other.

In terms of the *Journal of Sports Sciences*, that looks like a very nice figure. The impact factor has been going up for the last 20 years, but the information that James presented about the variability in the impact factor, might suggest that that rise is possibly just due to chance. Who knows? Certainly, it is going in the right direction and the publisher is quite happy that our impact factor is going up, but I think all journals need to go beyond the impact factor.

So, the impact factor has received quite a lot of criticism for good reason and something that James talked about was how skewed the citation data is. So, this is from a publication that is on the bio-archive. You can see the URL at the bottom of the slide there. This particular paper has reported on the citation distribution from a wide range of journals, and as you can see, they all follow a highly skewed distribution. Their recommendation, because of that, is that the mean, which is what is used for the impact factor, simply doesn't represent the true nature of the citation distribution, and so, if anything, we should be publishing the median distribution, or the median of the distribution, and you can see the figure there from the Royal Society Proceedings B. Something that they do is this is on their website. So, they're reporting that citation distribution and you can see clearly that the journal impact factor is much higher as a mean than it is a median. Again, it is highly skewed to the left there. You can see there's only a few papers with high citations and then a very long tail to the right.

This is from the Nature website; the URL is at the bottom there. And as you can see, they're publishing six indicators of impact, three are based on the traditional impact factors, over two years and over five years. But as you can see, even for Nature, which has one of the highest impact factors for any journal, the median impact factor is essentially halving the value when we use the median rather than the mean. Some of the newer ways of looking at this citation distribution article influence such as Eigenfactor or immediacy index are ways of doing this. So, some of the really big journals across all fields are starting to do this now. My journal, Sports Science in general is a relatively small field and I think we need to start doing this as well to give authors, to give the public, to give anybody who consumes the research that is in our journals a wider array of ways of assessing the impact or the performance of the journal, rather than just looking at the citations to publication ratio.

So, *Journal of Sports Sciences* has traditionally been on Scholar One and we recently moved to Editorial Manager and one of the good things about moving to Editorial Manager that I have found out about is the metrics that you can get within the system to assess the performance, if you would call it that, the performance of both reviewers but also of editors. So, if your journal is using Editorial Manager, it is very easy to get to these reports. So, on the main page of

your dashboard, right at the bottom of the screen, there is an administrative area and there is a link there to reports and when you click on that report then you will get a whole range of options there and there is one for reviewer performance reports, but another one for editor performance reports.

So, if we go into that we can choose the period over which we want to examine the performance of the editor and in this particular example, we started using Editorial Manager only this year, only a few months. But this is a report for myself, as an executive editor. You can choose which types of manuscripts you want to look at in this particular case I have chosen all of them, then my particular section which is sports performance.

So, what you get back from that is, I think, very useful information in terms of things like your accept and reject ratio. So, for me, as an executive editor, the way *Journal of Sport Sciences* works is when an author submits a paper to an individual section, that paper first comes to me. I make a decision whether to put that into review or whether to reject it immediately, and as you can see there, I can immediately see that my reject without review percentage is 75%. So, three out of four papers, in my particular section, don't go into review. And then we can also look at the time to make a decision. Those papers that do go into review, we can look at the proportions of minor revisions and major revisions and also how long it takes for those decisions to be made. In my particular case, it is not particularly meaningful because I don't handle too many papers myself these days; the ones that I decide to go into review, they then go down to an associate editor who handles the peer review process.

So, things like the time it takes an editor to either get the paper into review or to get a decision back from the reviewers is really really important because one of the biggest bits of feedback that we have had, and probably from every journal in every field, is that authors do want rapid turnaround. For the *Journal of Sport Sciences*, we have found it particularly difficult and increasingly difficult to find good reviewers, and so getting that quick turnaround time is proving to be quite difficult. But if we keep a track on that time, that is a good indicator, I think, of how quickly editors are getting to read new submissions, finding reviewers, keeping on top of reviewers. For my particular section, we only allow people who have been invited to review a paper, after seven days they are automatically uninvited. We do that so that we can very quickly then choose another potential reviewer and try to get the paper into review as quickly as possible.

So, those kinds of metrics that are automatically tracked by the system. I think they are really useful and we had a sports performance board meeting just last week, so I sent that reports to each of the associate editors and they had a chance to review their own performance and then we discussed those as a team, and

they all found them very useful.

Just finally I am going to talk about my role as a social media editor, and particularly my use of Twitter and how we can use social media to go beyond the journal, and particularly go beyond the journal impact factor. The great thing about social media is it's an open platform, it's all free of course, anybody can access the information and it is a really good way of connecting with both the public, but also potential authors, and also people who are researchers who are hopefully going to cite the work that is already published in the journal.

You can see there on the slide, we have almost 30,000 followers from 60, 70 countries around the world. So, this is a really good resource for the journal to get the work of authors out there, to hopefully improve the uptake, the readability or the downloads of papers that have already been published. But also as a way to encourage people to submit to the journal. Over the last four years, we have had more than 6 million impressions. So, an impression on Twitter is every time somebody sees a tweet of ours, that is one impression. You could think of it as 12 million eyeballs have seen the information that has come from our journal. If you compare that to the number of people who have potentially read our content in a library, it just pails in comparison.

One of the things that we have done over the years is interview authors and that proved very very popular. We call them Twinterviews or Twitter interviews and it is a very short, 20 to 30-minute interview with the author of an in press paper. So, a recent paper that has just been published and we will make that paper freely available for a period of time so that anybody can download it and read it, and then the idea behind these is to ask the author things that weren't necessarily in the paper themselves, so additional information, kind of like the extras on a DVD. You watch the main movie, which is the paper, and then this is an opportunity to ask the author additional information.

So, they have been very popular. One of the earlier ones that we did with a sport scientist who at the time was the fitness coach for Liverpool Football Club and has close to 40,000 followers. We received over 40,000 retweet reach and 100 new followers. So, they are very popular with people because the audience will get information, not only from the paper, but additional information from the author and it creates a lot of interest.

How do we get all this data? Well, it is freely available through the Twitter app. Twitter has an analytics site built into it, and as you can see on that particular slide, for June of this year, it tells us how many times I have tweeted, the number of impressions that we have had, the number of people who visited the website and how many new people have followed us. So, it is very easy to get those analytics

and if you start recording those analytics on a monthly basis, it is very easy to then track the performance. So, I think this is a really good way of going beyond just the content in the journal and attracting new authors to submit papers to you and also to help increase the citations.

Just some take home messages. I think we need to go beyond the impact factor, use a wider array of measures or metrics that capture more of the subtleties that are involved in publishing. And there are ways of monitoring your own performance as an editor and any sub-editors and you can use that information as a discussion point to look at turnaround times, look at reject rates and acceptance rates; those kinds of things. Then also if your journal doesn't have a Twitter account or a Facebook account, some form of social media, then you should seriously consider doing so because I think it is a really good way of connecting with authors and reviewers and readers of your journal.

Moderator: Thanks very much Grant. We will now hand over to Euan who is going to speak to us about Almetrics.

Euan Adie: Hi everyone, sorry my webcam is broken on my laptop, I am afraid. Hopefully the slides are colourful enough to hold your attention. My name is Euan Adie and I work for Almetric.com. I don't know how many of you have heard about Almetrics already. What I am going to do just to wrap up this portion of the webinar is to talk a bit about what they are and then some of the promises of them and then also the pitfalls of using them.

So, where does Almetrics come from? To give context and some of you will be familiar with this already, but traditionally we are very good at recognising citations from other journals and other recognised scholarly outputs, but what we are not so good at is when we're talking about impact, especially, picking up impacts like the impact of work being cited in policy documents or guidelines. So, if you imagine the kind of policy that is coming out of the World Health Organisation, for example, these are very STN focused examples, but equally, something like the World Bank of Economics. There are places where people are producing evidence backed policy and guidelines that change the way people do things day to day. That is this real impact. Traditionally, we are not very good at following that impact through once work has been published in a journal.

The other thing we haven't been particularly good at measuring as a scholarly community is some of the stuff that Grant just talked about. So, engagement with research online and places like social media, blogs and this kind of thing. It is quite easy sometimes to dismiss this as people just tweeting headlines they haven't read or does it make any difference if people are talking about research as well tweeting about pictures of their cats, and this is an extreme example, but

what if it's Barack Obama tweeting about your research? This is obviously an extreme example, but equally, it is very difficult to say that there is not any kind of useful indicator of impact there. If somebody is tweeting about your work in this kind of policy context.

Again, Barack Obama is an extreme example, but there's lots of different accounts specific to the fields that you work in, so whereas for climate change, Greenpeace might be the most interest thing. If you're working in other fields, there's equally other organisations or people that are important too. The reason this is becoming more important to researchers in general, so looking outside of just journals, is that funders in governments are increasingly mandating it. So, especially since the crunch after 2008 on research budgets worldwide, there has been much more of a demand to produce quality research, always. That has got to be the baseline, but then on top of that, the quality research has to improve people's lives. That is the value back funders are wanting from putting their money into research.

So, essentially that is what Almetrics is trying to help with. To say okay, well on the one hand we have got traditional metrics like downloads and citation counts, and on the other hand, we have got this increased demand from funders and governments, and therefore also institutions and researchers, to answer questions about wider impacts and engagement. And how can we bridge that gap? Almetrics is supposed to be one of the ways you can do that. It is definitely not a silver bullet and you have to be careful with how you use the data, which we will talk about in a second, but this is one of the ways you can do it.

So, some other important things. First of all, it compliments those traditional metrics. So, Almetrics aren't a replacement for citations. Nobody is saying stop looking at citation counts or any of the other good metrics we have talked about already, it is more about trying to fill in the gaps. They are not very good at telling you some of the attention and impact metrics that you might need, and they can reflect lots of different things. So, even citations, it is sometimes quite tricky to understand what they mean as we heard from John, you have got to really track it back. But equally, Almetrics, it is a diverse set of sources, typically – we will have a look at them in a second – and it can reflect different things. So, somebody talking about your work on social media is different to somebody citing it in a policy document, is different to somebody putting it on their syllabi at a university.

In practical terms, you are most likely to see Almetric data on an article level basis, so on Taylor & Francis it's included on the metrics tab and you will see a donut like this. So, underneath the Almetric tab there you have got this brightly coloured donut thing with a number in the middle, then underneath it you have got a breakdown of different attention sources. So, in this case, this article has an

Almetric attention score of 1,346. The attention score is the one thing we try and really put a number on, or create a new metric for, and it is important to realise that that only reflects the *attention* paid to the work.

So, I mentioned before that Almetrics might cover attention, impact, quality. The score isn't anything to do with the quality or the impact of the paper, it is simply to do with how many people have seen it and what kind of outputs that was in. For example, it is basically a weighted score of all the different places it's been mentioned. So, news is the first one. In this case, it has been mentioned in 107 different news stories. Social media; so, things like Twitter and Facebook and Google Plus, though the bulk of that is Twitter. Policy documents we covered already, and that could be either a link from a policy document or a straight forward citation. So, we might see citations for policy documents in the same way as Scopus or Google Scholar or Web of Science do from other documents. Then there is a host of other slightly smaller sources. So, blogs is a good one, especially around quality, Faculty of 1000 for STM pieces, Wikipedia, and an interesting recent one for Almetrics in general and also for Almetric.com has been syllabi. So, is somebody using your work for teaching purposes, somewhere in the world?

You can also sometimes get reports from a journal level, so this is the idea that out of context, these numbers don't necessarily mean anything. So, you can see in this case, the *Journal of Sports Sciences*, so that's Grant's journal. This is just a selection of Taylor & Francis Journals, I think, mentioned in the past year, and then sorted by the Altmetric score they've got. So, you could say well, we have got 489 news stories across all of the papers in this timeframe. By itself, that doesn't necessarily mean anything, what you really want to do is look at some comparand journals and say okay well, compared to the ones that we are looking at here, it is three times more. So, that seems like a good thing. The next step is obviously to go and look at the news stories and make sure that they are not all complaining about the papers. But you can draw some general conclusions already.

That is a bit of a whirlwind overview, just to say there is all this data around and you can collect it in different ways at the journal level, or the article level but you do need to be careful about how you use the data. One of the reasons is that when we talk about impact, it is quite easy to fall into the trap of saying well, somebody tweeted that so I have got some impact with the public or somebody has cited this in a policy document, so I have got impact in the policy space. But actually, when you talk to research administrators, you are far more likely to hear people talking about the pathway to impact and that is because if we take the example of a policy document, is it really changing anything if somebody cites you in a policy document that is then locked away in a drawer and nobody reads it? That is not really changing anything day to day. The idea is to impact on people's lives in some small way.

So, really what is important is this pathway. It has to go into the document and then people have to read the document and then act on it as well, and that is something that is obviously very very difficult if not impossible to track with certainly simple online metrics. So, you do have to be careful. We are just talking about the beginning of this pathway.

The second thing is that Almetrics, even the name has metrics in it and that implies something very precise, and John got this exactly right when he was talking about how it is not so much a specific answer you are getting. Metrics implies we are going to measure this, we know exactly what is there, we are going to get a very specific number back but actually it is much more woolly than this and really, the ideal way of using this data is to help ask the right questions. So, they are really indicators rather than metrics, if you like.

With all this data and speaking of asking the right questions, it is very tempting to try and answer questions with data that isn't really suitable. I would stress that when you are using Almetrics, the most important thing is probably first of all, that qualitative beats quantitative. So, it is more important to read what the mentions say rather than just count them up. And an obvious example of that would be something like the autism vaccines paper that was published in The Lancet, back in the 90s, the Andrew Wakefield paper. It is possible for a paper to get a lot of attention and have a big impact and the impact can be negative and the quality might not be there. So, they are not necessarily all correlated exactly; those three things. Then the second thing quickly is to remember the difference between attention, quality, and impact. I will leave it there.

Moderator: Thanks very much Euan. So, thanks to all of our speakers for their presentations. Now it is time to pass over to you for our Q & A session. We have already had a few questions come through, but do please continue to type your questions into the question box.

The first question I am going to start off with asks what the panel thinks that the role of a learned society is in managing the world of metrics for their authors and as publishing partners?

James Hardcastle: Euan or Grant, do you want to start on that?

Dr Grant Abt: Yes, can do. The Journal of Sport Sciences is published on behalf of the British Association of Sport and Exercise Sciences, so that is our professional body. To be honest, they don't have a lot of involvement in the day to day running of the journal so from that particular point of view, there is very little impact of the professional association on what we do, but they certainly have a voice in the

direction in which the journal goes. So, if they wanted a particular performance metric to be analysed in terms of their own membership base, then that would be possible but we don't do anything like that at the moment. But other professional associations might be more involved in the journals that they are involved with.

Dr John Harrison: I think I will come in here if that is okay, because *Regional Studies* which is the journal I work in, is the journal of a large learned society, which is the Regional Studies Association. I think the important bit here is in terms of the presentation, how I tried to deliver it was really trying to think about the relationship that a journal and we as editors have with the authors that are submitting the work, but also the wider community that we are in fact serving and I think that is really important when we think about both the promotion of people's research but also things like visibility. I think there is a great responsibility on journals and journal editors and their publishers to really do everything they can because when you have got a learned society, when you have got a wide community, an audience for the research. When you submit your work to a journal, and when it gets accepted, there is a lot of effort that we all know that goes into producing research, producing knowledge, producing information.

So, I see it as a very important thing, it can be very useful with that learned society environment and connection, because it does always remind you that you are there, it is not simply that the journal is there to publish research., and there is that aspect of it, but really, the journal is there to serve the wider community because without that community, there is no audience for the journal, there is no research coming through. So, I think it is really really important that as a journal, we are able not only to help the wider scientific community, but also metrics can be really helpful in showing the community the work that the journal and the association is doing to try and help them, to promote their research, and to give them as many opportunities as possible to disseminate and communicate their knowledge and research.

James Hardcastle: I think there is a role for academic societies and learned societies in educating authors about what metrics are available and the different ways of looking at their research. Publishers and editors can only do so much in helping people select metrics that might be more appropriate than the impact factor, and I think it is a big role for the societies to play in supporting diversification of metrics basically.

Moderator: That is great. Thanks very much all. Our next question here says that studies suggest that it is not necessarily a positive correlation between citations and media visibility. For instance, articles discussed on some social media sites might attract less attention in scholarly venues, perhaps because the issues they discuss are already exhausted in the public space. Is this something, Grant or John, either

of you have found with your journals?

Dr Grant Abt: Yes, it works both ways that there are some papers that are published in the journal that are highly theoretical and as a social media editor, it is very difficult to capture the essence of that paper in a tweet. So, there are some papers that are less readable than others, but their impact for want of a better word on theory might be substantial, but you are right, papers like that may not get the love from the Twittersphere that other papers do. I see it all the time, papers that are reasonably descriptive can be very popular. Sometimes because they are very applied.

In my field, sport and exercise science, it is an applied science, there is a mix of theory and practice, but certainly a lot of the work over the years that we have published has been from professional football, so people working at football clubs, use the information that is published in the journal. So, practical work, sometimes is not cited highly but can be very popular. So, yes, it works both ways I think and kind of comes back to the point that I was making and probably everybody was making. It depends on your definition of what impact is. Any given paper can have multiple impacts, just to say it is only cited a few times; it doesn't necessarily mean that it is worthless, and likewise, there are many papers that are highly cited that actually might not change practice in any way or change policy in anyway. We just have to view things with a wider field of vision I think and if we do that, then we can capture the wider variety of impact that papers can have.

Moderator: Great, thanks very much. I think we have just got time for one final question. If your question hasn't been answered yet, then don't worry, we will be publishing a summary of all the questions with our expert answers after the webinar.

So, for the final question, do any of our panel have any comments on Kudos for promoting articles?

Euan Adie: So, I say this in a guarded way because we are a metrics company so I don't imply that it is good to gain your metrics. Kudos, I think, is good in that somebody has to take responsibility sometimes for publicising and disseminating the research and authors are in a good place to do that. If you think about writing a plain language summary of their research and to reach the right community, presumably, they know their peer groups. So, in that sense, I think it is a good thing to encourage authors to participate in telling people about their work.

The only kind of thing to watch for is obviously the point isn't to get attention for the sake of it. Nobody should just be tweeting papers because somebody told them to tweet papers, that doesn't add value for anybody. It needs to be adding value to the conversations, so it needs to be reaching the audience. Somebody

needs to be finding it useful. That is the balanced view of it, I think.

Moderator: Thanks very much Euan.

So, unfortunately that is all we have got time for now but I hope you have all found the session useful. If you would like to find out more about metrics, there are lots of useful resources on our Editor Resources site including a post from Dr John Harrison on Impact is 'the holy grail'. So, please do have a look there.

I would like to thank all of our experts again for sharing their knowledge with us today and I would like to thank all of you for joining us. When I end this webinar, a short survey will pop up on your screen asking you a couple of questions about your experience. So, any feedback you have will be much appreciated. The webinar has been recorded and we will be circulating the recording to you all by email. So, do look out for that in your inbox. Thank you again for attending and we hope you can join us at another webinar in our Expert View series.

The webinar is now over, please feel free to disconnect.