# Anonymized Questions Transcript

Title: Preprints and the changing landscape of biomedical publishing
Speaker: Jonny Coates, ASAPbio

## Questions

***Participant A:*** *Could you elaborate a little bit on this scoop myth? Because when you talk about the benefits of preprints, you practically say that there are preprints out there and then immediately people will make use of these preprints. But if I'm now a researcher and I'm preparing a presentation and I put out preprints there, how do I make sure that what I put out there is not being used against me or not being used to scoop me? Why is it a myth?*

**Coates:** I always liken it to doing exactly the same thing we've all been doing for years now, which is presenting work at conferences. Obviously, if you post a preprint that is very early on in the work, it is more open to being able to be scooped in terms of someone coming along and doing the same thing. Now, there are protections against that, which I'll get to. But I think when you go to a conference, you present your work. Often it's quite finalized, but you've maybe not submitted to a journal yet. Now, the problem is anyone at that conference can go away and do that work and scoop you. You've got zero protection against that. With a preprint, because it's got DOI, because it's online for the whole world to see, everyone can see who was first. Not only that, but a few journals now, and it is increasing, actually have policies relating to scoop protection. If you post a preprint, they view that as the priority claim, not someone else has come along and submitted it later on. So there's the protection there. There's nothing stopping anyone ever from coming along and copying your work, even if it's been published. There are examples where published literature has just been copied and republished elsewhere. You can't ever get away from that. But by having a system that's more open, where everyone can see it, and it is largely based on reputation, that I think adds a lot of protection into the whole thing.

***Participant A:*** *So basically, the DOI of the preprint is kind of my insurance policy?*

**Coates:** Yeah, basically. I'll give another story for this. During our COVID work – I was a postdoc at the time, leading a project - our second bit of work from that, I didn't have the money to publish, so it was always meant to be just a preprint. And by posting a preprint, not only did people read it, which is great, but actually a lab in the US reached out to us saying, we've just basically come to the same conclusions you have, using a different method. And they ended up co-publishing with us and paying our APC fee for us. We would never have been published had we not posted a preprint. That not only got us published, but it also strengthened our conclusions and their conclusions by doing it together. It can lead to not only screw protection, but the total opposite and a huge number of benefits.

***Participant B:*** *I have one question about the comments on who is commenting the preprints and who actually takes the time to go through it all. It takes a lot of time. Can you comment on that, please?*

**Coates**: Preprint commenting is relatively rare still, particularly outside of the pandemic. And this is the problem of wider discoverability across science and the idea that we publish too much anyway. But there are a number of different services that will review your preprint and they will do it on either you submit your preprint to be reviewed basis or they pick it and they review it, a bit like a journal club. So PreReview is a platform we partner with a lot and they allow anyone to post preprint reviews. And they're about to be on that little tool bar with bioRxiv. At ASAPbio, we actually run every year what we call a “crowd preprint review” where we pick different topics (this year we've had four) and we have four to five people per preprint review a preprint and post that online. For the actual commenting and the reading there's still not a proper system fully in place that does it all yet, but it is growing.

And as we get more towards that system, I think we will see more journals adopt eLife's model where they're effectively just doing prereviews. And not only does that mean the preprints get reviewed, but it also shifts all of us into thinking more about the quality of the work and the prereview rather than "I've just published in Nature, so this must be really good, reliable work", which is, as we know from a lot of literature, not reliable or true.

***Participant C:*** *In terms of some type of stewardship or peer review or whatever, what do you think is the ideal scenario? How do we go about evaluating the research that we do?*

**Coates:** I don't think we need peer review. And I think Jessica at ASAPbio disagrees with me on this one. I presented you a single slide of data before about the effectiveness of peer review or the limited effectiveness of peer review. I'm actually writing a literature review about all that data, so I'm looking at this a lot, and every single study I come across that tries to address this question does come to the same conclusion. And so I would argue actually we don't need peer review for about 90% of the work. It doesn't add anything really to the studies, and there are alternative ways of removing false data and bad science. There's better ways of getting at that question. That's not what peer review does anyway. Peer review is useful in those 10% of cases where results are high impact, and by that I mean they're clinically important or they are, for whatever reason, societally very big, important, impactful bits of work. They're a minority of literature, but peer review can be important then. Peer review is also important where a study has been flagged as being potentially problematic, and there are tools that can do that. And so if we save all the effort we're currently spending on reviewing everything and just focus it into that 10%, we can do a much better job of peer reviewing those preprints or papers, and it saves everyone else's effort and time and money. And so I think the system we should really do is you post your preprint. It's free for everyone to read and access. We have other systems around curation and assessing researchers, and then every now and then there will be bits of work that needs to be peer reviewed.

***Participant C:*** *I guess the question becomes what is the purpose of peer review? What is peer review? I think that's kind of an open question, and it's definitely open to interpretation. I don't like the term. I don't like its implications. But that said, as a specialist in documentation and in science reading, I think that the level to which most of the science that we have in the public sphere is under-documented is quite problematic. So I think that for that, we definitely need some type of paid stewards, and I underline paid because this is definitely specialized, highly skilled labor, to go through our scientific documentation in whatever form it takes to make sure that it is conceptually accessible. That means that there is enough information included for the science to be reproducible, if only conceptually, and that it is also written in a way that it can be understood. So that means if we don't need the jargon to make the concept understood, we should remove it. I guess what I'm trying to say is that, and I think you would agree, that we do need some type of stewardship to make sure that the science is usable.*

**Coates:** I advocate for an ombudsman system, basically, not just for peer review and publishing, but for academia more broadly. I think academia has, I would argue, not really grown since the Middle Ages when it originated, and I think we are long overdue a system of checks to keep researchers' behavior in line with what we would expect it to be, and also looking at the literature and things like that. It all comes down, I think, to having a single independent body that can actually manage these things and take responsibility for dealing with a lot of these things. Because when you have discussions about poor literature or poor quality control in the literature, all these things, nobody is willing to take responsibility for it, and that means nobody will, and it won't change until somebody is able to come along and do that.

***Participant D**: Will the journal-based way of publishing disappear in the long run? What speaks in favor of the classical route still?*

**Coates:** I would like to say it will disappear in the long run. There is a certain cynical element in me that suggests it won't because publishers, just to put it in context, the publishing industry in terms of money sits somewhere in between the music industry and Hollywood. So it's a huge amount of money involved, and publishers, their profit margins are bigger than any of the big tech companies. They make more profit margins than Apple, Google, Microsoft, whatever you want, and when there's that much money involved, systems don't change. They will protect that at all costs. However, as I've showed you, we are seeing top-down changes, so the EU, the US, and others are calling for changes to the system, and that is a huge step forward into actually bringing about change and making a system that will move away from those for-profit, I would say damaging, ways of doing science. I think we'll take quite a long time to do that, but in the past five years, maybe a bit more, we've seen huge leaps forward with preprints and the preprint space. Open Access, I still think, is a little bit disjointed. There's too many different approaches doing too many different things. I think they need a bit of coalescing around shared aims to move that forward a bit quicker. But I'm hopeful we will see things maybe not disappear, but perhaps change to things like the eLife model, where at the very least, it does change our thinking and how we look at research, and that is a huge step forward as it is.

***Participant E:** Can you explain what happened in 2013 that led to the preprint boom in life sciences?*

**Coates:** There's two podcast[1] episodes you can go and listen to if you really want an in-depth on that one. Basically, a lot of different factors came together at the right time. BioRxiv is hosted by Cold Spring Harbor, and so having that behind them was one of the factors that meant it was a bit more stable and more successful. There was also just a general changing of the tide and thinking around that time, which led to preprints having a better chance of succeeding than they had in the past. It wasn't just the 1960s, there were attempts between then and 2013 as well. Things were shifting, and I think a lot of it was just the timing, but also the people involved. There's a much longer discussion there, but basically timing is what it came down to.

***Participant F:** Does it make sense that a research institution like Forschungszentrum Jülich, where we're at, would mandate its members to release its work on preprint servers? Is there an institution doing that already?*

Coates: We would love institutions to start doing that. I think somebody needs to say that. I don't know if it's public. Without naming anything, there is a funder who is about to announce that everyone they fund must post preprints. A lot of funders do have those policies in place. The Wellcome Trust, for example, suggests. that you post all of your work as preprints, I think. I can't remember if it's stronger than that now. But there is a funder about to say everyone we fund must post a preprint of their work. In terms of institutions, again, I don't know if this is public or not, but the answer is yes, there is one that is going to mandate that, if it hasn't already. As those things start happening, we will see more places and more people doing that. It is a big step into changing the system, because some people will never do it until everyone else is doing it and need a bit of a push.

***Participant G:** Have there been any documented differences in reproducibility between preprints without peer review and those with peer review, such as those utilizing Review Commons?*

**Coates:** This is one of the big things I would love to do. There is a question in the chat about what percent of the preprints end up getting published. About 7% of the preprints, at least on BioRxiv and MedRxiv, end up being published somewhere. We can look at those and we can do those assessments between the preprint and the published version. What's harder to do is look at that 30% that are never published and compare the never published preprints to the published preprints. or peer reviewed preprints.

1 Coates hosts the podcast „Preprints in Motion“.

As far as I'm aware, nobody has done that yet. It's something I would love to do. I've got lots of ideas on how to do it. I just don't have the team or the time to do it at the moment. What I will say, though, just because a preprint is not published, it doesn't mean it's because it's a bad preprint or bad work. There are a lot of examples and reasons why people might just leave things as a preprint. When I was talking, I gave you the example that I had because I couldn't afford the APC. That's a common reason for leaving things as a preprint. Things like negative data or small data sets are sometimes put out there as preprints so that they're usable, even if they're never going to be published. Sometimes people just don't want to publish their work. There's one person in particular who they posted a preprint because they did not want to use the journals and so their work will never be published. It will always be a preprint. It's not a comment on the quality of the work at all, but that is something I would like to have numbers to when I say these things.

***Participant H:*** *What percentage of the preprints in the end get published in the old way?*

**Coates:** Roughly 70%. It varies a little bit by preprint server. Some servers are owned by the publishing industry and every publisher basically has their own preprint server. Those will basically be 100%. Because it's kind of the requirement to be on there. But for bioRxiv it is 70% roughly.

***Participant H:*** *So what does that mean? Is this increasing or decreasing? Would scientists use this preprinting system as a kind of a cheap evaluation stage or something?*

**Coates:** It's not really changing. And I would say it's not really changing because the Global South, their awareness of preprints there is still not amazing. And they're the ones who obviously would benefit the most from being able to publish cheaply or for free. And that I think might change that number a little bit maybe. But yeah, it's just not really changing much. And I think part of that is because the way preprints are mostly used at the moment is it's just a step on the publishing process now. It's just a step you do at the time you submit your manuscript or sort of just either side of that. Maybe you've had a round revision and you just want the work to get out there now because it was rejected from the journal. So you put it out there to get it out. But I don't know if I'll ever expect that to go to 100%. I mean, obviously I would prefer it to go the other way. I would prefer it to go down and have other ways of doing that.

***Participant C:*** *I actually need to modify your response. You mentioned the Global South not readily adopting preprints. I think that it's important to take into account that in Latin America much of the publishing machine has been taken over by the libraries and by the universities. So the issue here in terms of preprints or anything like that is about those scholars entering the literature of the Global North which is a very, very different issue. Locally, there is no problem publishing and disseminating the work because the fees don't exist. All of the rest of the nonsense only exists if these scholars want to publish in Global North journals.*

**Coates:** That is a really important point. We've been having a lot of discussions with researchers in India at the moment as an example and they really, really struggle to get into that Global North ecosystem. There's a lot of unhappiness about the fact that the West, as they termed it, have come in and said this is the system you must be part of. And it is a big problem because science is meant to be global and at the moment it's not. It's very, very not. Latin America is a really good example of a geographical area that have done a brilliant job at skewing that a bit. But science should be global. We want everyone to be in the same ecosystem and we really do need to put a lot more effort into bringing everyone along and making it so that everyone can actually be part of the same system without discriminating based on anything but particularly based on cost.

***Participant I:*** *Do you think that if using AI assistance peer review will lose its scientific worth to the publication process?*

**Coates:** I don't think it will lose its worth but AI assistance will make the whole process stronger and streamline it, hopefully. I think it's a positive thing and I certainly don't think peer review will lose its worth ever. Even though I've just spent almost an hour talking about how I don't think peer review should exist for most things. It's those 10% or so where it really does make a difference. That's where it's important. And if we use AI for 80% of the papers, 89%, great. Then they've had some kind of checks done which will make everyone else feel a bit happier. And then it might also flag those 10% that really need an in-depth investigation. And that's where people like Elizabeth Bick come through on those not so strong or more worrisome issues. So there's a huge worth in it.

***Participant C:*** *How exactly do you expect AI to strengthen this process? Because I find AI tremendously problematic.*

**Coates:** It can be. I think fitting it into a pipeline with humans is how it's got to be done. I don't think you can just go away and let AI do its thing and not have any other checks in place. But it can be used to potentially flag things up. And the argument I've been making is to get away from this reviewing everything kind of situation. So that is an area AI could be particularly useful. But we've got to be very careful with how that AI has been trained, because then we potentially have the problem of introducing a whole new level of discrimination and bias, especially if it's only ever trained on papers where the author's first language is English, because then it's going to do a huge disservice to the entire rest of the world. And so we've got to be careful how we do it, but it can be done well, in a beneficial way. Will we be careful is an entirely separate point - the track record isn't good.

***Participant J:*** *This is more of a comment than a question. Very good points were raised.*

*Jonny was saying there's not many comments on preprints. It would be great if people got credit for comments on preprints. One of the biggest things against preprints now is that you really get credit for how many papers you published and how famous was the journal you published it. I'm not a scientist anymore, but if I were getting credit on, for example, really looking at reviewing, in a sense, that would give me a lot of incentive to do that.*

*Another point Participant C raised about the text being more accessible, perhaps I can go in and make the right sort of very readable version of the text and I get credit for doing that so that more people, maybe non-specialists, can understand it. That would give me incentive to do that as well. If that could be counted in my CV, that would be great.*

*Finally, there's the problem of what we call research integrity, which is a gigantic problem that I'm very interested in. By the way, I'm in the publishing industry, a term I don't like, but I've been working with publishers for 30 years. One of the problems we have now is paper mills, so-called tortured phrases, and one thing I'm very interested in, images that are reused or photoshopped that are far more than they should be. On a preprint, and these are all a lot of very well peer-reviewed published papers in famous journals, and we find that, goodness me, it's been photoshopped. If it goes on a preprint and someone comes and says, I found this and flags it and gets credit for it, that would be a great way to go forward and for science to move faster.*

**Coates:** This is something we at ASAPbio are focusing a lot more on moving forward. Preprint adoption is always going to start at a certain point if you don't have those other things in place, and we're terming it “institutional recognition”, but very much part of that comes to actually recognising the peer-review efforts, the commenting efforts, all those things that we all currently spend almost all of our time doing quite often and get zero credit for, and that is a huge step. Preprints are really good at doing that because they are a removal from that traditional system of thinking and doing things, which helps, just removing from that helps a lot anyway. But that is something hopefully we will start to see a lot of changes around in the future.