

Peter Krautzberger on the web

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# The Forum of Mathematics, blessing or curse?

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When the Forum of Mathematics was announced [on Tim Gowers's blog](#) I mentioned this on twitter and I got a couple of replies asking what my thoughts on it were. Well, this post has been stuck in my draft folder for too long, long enough for these journals to be open for submissions, blimey. 2012-11-19 quick correction. People have pointed out in the comments, that **Sigma** is already going to be a regular old journal (see Gower's post, comparing it to *Combinatorica*). I'm not yet sure if that makes it better or worse.

## Open thingamajig

The [Forum of Mathematics](#) is a new journal. Well, no, it's actually two journals, **Pi** and **Sigma** (yes, *not*  $\pi$  and  $\Sigma$ ). (This is surprisingly nerdy for the honorable Cambridge University Press – just imagine all the inside jokes you can do with it (but we'll get back to that).)

These are two journals in mathematics. So far, so boring. They are [open access](#) journals, more precisely *Gold Open Access*, i.e., you pay a fee once, when your publication is accepted, and then your publication is published and available under a permissive license (creative commons in this case).

My two regular readers may know that I'm a big fan of Gold OA as a mid-term solution to our primary publishing problem – which is non-free publishing. A lot of people criticize the level of fees that Gold OA publishing comes with. For example, the biggest OA journal and the first “mega journal”, [PLOS One](#), charges a whopping \$1300 (there are institutional rebates and you can ask for a waiver) – and that's cheap compared to Springer and Elsevier. But \$1300 is something that most mathematicians do not get their hands on in their grant proposals right now. There are numerous explanations why this isn't the figure that you should be concerned, e.g., how your library saves money so that your department can fund your fee – and then you usually get the return argument “not everybody works in a department”; and that's all good and fair and not the topic for this post.

It doesn't matter.

Gold OA is currently the only viable form of OA on a larger scale.

Yes, we have examples of what some call “diamond OA” in mathematics (Open Access without any fees whatsoever). In fact, my first paper was specifically published in the NYJM because it was diamond OA. Here's what I based my decision: It was clear that that (any?) paper would not end up in anything fancy, you know, high-profile, glamour mag etc. So I looked for a long time to find one that a) had a publication in my field (the [NYJM did](#)) and b) had other publications by respectable people (the [NYJM had](#)). So I chose the NYJM and it was a fun experience although there's actually a very critical post that I have to write about it [[not so much critical of the NYJM, but my own work]].

Back to the Forum of Mathematics. It tries to do the right thing. First off, it's open access; that's a good thing. Then it's Gold OA; that's the decent thing, and it's the only way we can be on that level while we lack the infrastructure for diamond OA on that level. (And I'll get to that, what I mean by "this level".)

Then they try to be competitive; which is a good thing. Finally, they try to be affordable; which is a good thing. The journals will be free of charge for the first three years. They hope to find donors to keep it free but otherwise will start charging £500/€750 – which is good, that's still not very low, but at least it's not what Elsevier and Springer will ask you to pay.

Now you see me, now you don't

So that's the open access part of the story. Now to the special mathematical twist. The Forum of Mathematics comes in two journals, both have the same price tag. What's the difference? The difference is that **Pi** stands for (let's follow Tim Gowers's suggestion) "primo" and **Sigma** stands for "secondo". What does that mean? It means Sigma is what you'd call "PLOS One for mathematics", it is designed to be a mega journal in the same vein where the refereeing process will only check correctness of your paper (yes, and plagiarism, nonsense etc).

**Pi**, on the other hand, is aimed (as Gowers's describes), to become one of the top three journals in mathematics – that's the goal. For this purpose, it also adds a few fancy innovations. For example, you actually have to write a two page statement for your submission to argue that your work is important enough – which makes it's goal as transparent as it makes it ridiculous. (But let's not go there right now.)

Pleasure and pain

So what are my thoughts on it? My first thought was “thank god, finally somebody is doing something serious about that”. We’re lacking a PLoS ONE for mathematics and that’s absolutely clear. In fact, it’s bizarre that we’ve been so far ahead in the game (with the arXiv for 20+ years) and yet we’re so far behind in everything else that’s happened in publishing in the last 10 years. So thankfully somebody said “let’s do PLOS One for mathematics” – that’s a great move.

But my immediate second reaction was: “WTF?!?!”. For me at least, the idea of PLoS ONE is ruined once you add something like **Pi**.

The whole idea of PLoS ONE is to leave the bickering of editorial boards behind. PLoS is investing quite a bit of money (now that they actually make a profit off PLoS ONE) in the fundamental idea that is PLoS ONE: editorial boards are not very good at identifying what’s important research; they are simply bad at it. (I’ve ranted about editorial boards as the core problem of academic publishing before, [no?](#))

So PLoS ONE goes the other way and says “We don’t care about importance, you check that it’s science and let the community decide what’s important”. How do they do that? Well, for the longest time they didn’t do much, they experimented, tried what they could with their means. But what you see now is a serious investment in [alternative metrics](#), i.e., in means to aggregate the impact that an individual paper has in the community. Not the impact that some editorial board members think the paper *should* have in their community, no the actual, real impact. The impact of “How many people get their hands on it?”, “How many people read it?”, “How many people leave a comment, talk about it on social networks, on blogs, on whatever else you can think of?”. This is the true democratization of academic publishing: to realize that editorial boards are very good at organizing fact-checking but they

are unnecessary for identifying what is important to the community. At first sight, this might be more prevalent in the sciences, but in reality it is extremely prevalent in mathematics as well. Mainstream mathematics dictates what's important (Field's medal anyone?) and non-mainstream fields can take it as an excuse for their own lack of impact.

Alright, that was maybe too much of a rant. I know that most editors are highly decent people; they are benevolent dictators but they are dictators none the less, and glamour mags editors have just as much power over the community as they do in the sciences.

## The Game of Thrones

So what does **Pi** turn the idea of a PLoS ONE journal into? It turns it – and this is my second point – into a power grab.

If I was to imagine that **Sigma** becomes the PLoS ONE of mathematics and imagine that **Pi** will pick the “great” papers out of **Sigma**. Then what do you get? You get a mega journal that will collect a considerable amount of mathematical publishing (all of it?), and another that picks the raisins out of it. What's wrong with that picture?

That picture I'm left with is a massive collection of power within a single editorial board, across the entire publication range in mathematics. If **Sigma** can capture a large part of mathematical publications (and how could it not? it's respectable and free!) then the **Pi** editorial board will have all the power to dictate what is important and what isn't. Just think about it this way: why would I submit to the NYJM, if I can submit a weak paper to **Sigma** with the additional, faint hope of making it into **Pi**?

This is a huge issue!

Now I'm not saying this must happen. Just like with PLoS ONE, there can be competitors sooner or later, probably as soon as it becomes a successful business model. But the damage it can do in the mean time could be considerable.

PLoS ONE started out as an experiment, it was the first of its kind, it had no idea that it would take off to become the biggest journal in history. With **Sigma**, on the other hand, we *know this*, and we can see that **Pi** is designed to profit directly from this potential, picking raisins from the first mega journal in mathematics.

What would that mean to small, enthusiastic, diamond OA journals that exist right now? (Besides, is there enough room for a real competitor?)

Coda.

**Sigma** is a copycat of PLoS ONE which was founded 10 years ago – we remain that far behind. The only innovation is **Pi**, which is actually a step backwards (and the lack of alternative metrics, another step backwards).

Where are the really new experiments? Our research is made for the web, to be communicated through the web in text, speech and demonstration. Yet we do not take the experimental playground seriously enough. We simply stay behind everybody else, ready to complain about all the big bad things coming out of the scientific side of publishing.

Could we jump ahead? Based on the experience of MathOverflow and math.SE, no doubt. The mathematical community is open to exploring new ways to do and communicate research.

And I wonder: if Forum of Mathematics is considered a “big experiment” then I fear that we'll stay behind by 10 years and soon

enough we will be behind 20 years.

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tl;dr

Great to have a PLoS ONE for mathematics but I worry that the **Pi** editorial board could end up the absolute, most powerful editorial board in history.

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### *Comments*

- **Marshall Hampton**, 2012/11/12 Its not really different from PLOS ONE and PLOS Biology.
- **Peter**, 2012/11/12 Yes there is a similarity but I think there are major differences. First of all, PLoS Biology was first chronologically (in fact, PLOS's very first journal). They went from a traditional editorial model to creating the (really quite incredibly innovative) model of PLoS ONE. Then there's the "picking raisins" aspect of Pi; as far as I know this doesn't happen at PLoS Biology // PLoS ONE. Finally, PLoS ONE has much broader subject areas than Sigma which means it can't really "hope" (if that's the word) to dominate one field as much as Sigma might do for Mathematics. Hence, my worry.
- **Christian Perfect**, 2012/11/12 Is there anything to stop other people compiling lists of good papers from Sigma?
  - **Peter**, 2012/11/12 That's a great idea! We could get "Sigma overlay journals" just as people are trying to do "arXiv overlay journals" — but with free refereeing.
- **Siddhartha Gadgil**, 2012/11/12 I don't think Sigma intends to be a PLOS One – just a collection of journals at the level of 'top journal in the field' (while Pi is at the level of 'top journal in mathematics')

- **Peter**, 2012/11/12 I don't know how else to describe PLoS ONE. There is of course a different way of assessing proper mathematics as compared to proper science. Some have argued that PLoS ONE allows bogus papers to pass, but I don't think there's much real evidence for that. certainly not more than a decent journal in mathematics.
- **Scott Morrison**, 2012/11/19 Sigma is certainly planning on rejecting correct but insufficiently important papers! I think you're barking up the wrong tree wishing it were like PLoS One for mathematics.
  - **Peter**, 2012/11/19 Thanks Scott. I'll double check and will add a correction. As I describe, I'm not really wishing for Sigma to be a PLoS One for mathematics — I'm rather worried about that. Assuming Sigma will really start at a “top” level, my worries about its influence would worsen...
  - **Peter**, 2012/11/19 Sorry for not double checking right away — you are right. (I should listen to comments more often :( )

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To leave a comment [write me an email](#).