

Rationally Speaking #228: William Gunn and Alex Holcombe on “Is Elsevier helping or hurting scientific progress?”

Julia: Welcome to Rationally Speaking, the podcast where we explore the borderlands between reason and nonsense. I'm your host, Julia Galef, and I'm trying something a little different for this episode of Rationally Speaking.

I've been wanting to try for a while having two guests on the show with at least somewhat different perspectives on a topic, and have a joint discussion where we try to map out where do we agree, where do we disagree, and why? It's a tough thing to do, even offline, having tried it many times. But I think it's a worthy thing to attempt. And I'm excited about the topic and the two guests today.

So the topic is what role major scientific publishers, like Elsevier, play in advancing scientific progress. Are they helping? Are they holding back progress? I'm especially interested in open science, which we've talked about on the show before. For example, I did an episode with Brian Nosek, who's the head of the Center for Open Science. And we've talked about the importance of being able to share data and methods, and other episodes with Simine Vazire and Uri Simonsohn.

And major publishers, like Elsevier, have been coming under fire for holding back the progress of science in general and of open science. So we're going to talk about why, and how justified is that?

Now let me introduce my guests, I have with me in the studio first, William Gunn, who has a background in biomedical science and is currently the director of communications for Elsevier, which is the largest science publisher, they publish thousands of journals. William, thank you for being here.

William: Thanks for having me.

Julia: And then joining us by Skype is Alex Holcombe who is a professor of cognitive science from the University of Sydney, and active in the open science movement. Alex chairs an organization called Psychology and Open Access, that provides resources to people looking to start their own open access journals. It's PsyOA, P-S-Y-O-A.org. Alex, welcome to Rationally Speaking.

Alex: Thank you, Julia, I'm excited to be here.

Julia: So just for common knowledge, whenever I moderate a debate or disagreement, I like to emphasize that our goal, what I think is the most

productive approach, is to aim to explain rather than persuade. Like, explain your model, ask questions about the other person's model, and so on. Rather than trying to make persuasive arguments.

Which -- I follow both of you on Twitter, I know you're very reasonable people and I see you do this all the time, so it almost goes without saying. But again, just for common knowledge.

So let's start by laying out the general contours of this disagreement -- as it exists among the scientific community, not just between you two. I'll have Alex go first and summarize this, and then William, you can give your take after that.

So Alex, what would you say are the main conflicts between you and people in the open science community see between large publishers like Elsevier and the interests of the scientific community or scientific progress?

Alex: Yeah, the conflicts I see are largely based on certain companies, like Elsevier, having come from a more traditional, older system that I now think is outdated and can now be internet publishing. With internet publishing, things can be done much more efficiently. So actually right before this podcast, I was chatting with a PhD student here at the University of California where I'm visiting. And it had happened that Elsevier had come up in her yoga class this week, and she was asked what made her happy today? And this was the other day when University of California had canceled their subscription to Elsevier and she said, "Well, the University of California canceling their subscription to Elsevier made me happy today."

And of course her yoga class was like, "What subscription? What's Elsevier?" So they asked her to explain, and she said something like what I would say, basically said, "Well the taxpayer, ultimately by supporting universities, paying for research grants to universities, they support the work that we do as scientists. I get my salary."

And Julia Bodisina who was telling me about the yoga class, she receives a graduate stipend through the government's support of the university. And using that money, we get paid to make scientific discoveries and also pay to write up the results into an article.

And under the traditional system that's used largely by Elsevier and several publishing companies, after we write up that article, the article then gets reviewed at a journal by other scientists typically at other universities who are also paid to do so as part of their university work, ultimately by students or governments. And then after the article comes

back with comments from reviewers, I then revise my article in response to the criticism from the reviewers.

But then finally, as a last step, when I've refined all the wording of the article and so on, you might imagine I would then just post this finished work on the internet for students, citizens and university researchers, whoever it's relevant to, to download.

But instead what we do is we give the copyright to a large, multinational corporation like Elsevier who then publishes it in their journal and then charges everyone an annual subscription fee to access it. So many major universities are currently paying Elsevier, for example, a million dollar a year for access to this content that those universities themselves already paid for to create and review.

So with that traditional business model being based on restriction of knowledge dissemination, because they're making money by considering how much they can charge for people to access, that brings it in conflict with the modern open science movement, in which we want to have knowledge disseminated as far and as wide as possible.

Julia: Yeah, so I'll just first note that the timing of this episode is fortuitous, or not fortuitous in some sense depending on your perspective. So a couple days ago, the University of California school system just ended their contract with Elsevier, which is what Alex was talking about. We're not really going to talk about that in the episode, because William is not part of the negotiations team at Elsevier and he can't really comment on it. But it is kind of a background context against which this conversation is happening.

So, William, before you jump in, I just want to get a sense of the categories of the complaints, so to speak. Would you say -- I guess either of you can answer this. Would you say that the complaints fall into (1) the category of unfairness? Like unfair pricing or unfair restriction of access, on the one hand. And then (2), holding back progress? Like the practices of Elsevier and other publishers are slowing down scientific progress or making the quality of science worse.

Do those seem like the two categories?

Alex: Not being a moral theorist, I hesitate to make judgments about fairness.

Julia: Okay.

Alex: We're living in a market economy. So I'm happy to pay for things. So to me, the issue is not that a company like Elsevier is going to charge as much as they can to maximize value for their shareholders.

Instead, I just see that there's a more efficient way of doing things that will not result in as much money being soaked out of universities. So one, that's the way I would reframe it, as opposed to fairness. Just a more efficient system.

And then yes, the restriction of knowledge for your other category, to me, does fall under the category of holding back science. Because greater dissemination helps researchers more easily kind of find and remix, as well as just read the articles. And thus science can progress more rapidly.

Julia: Great. Now William, you've been very patient. Can you give us an overview of what you see as the main value that's being added by publishers like Elsevier?

William: The value question's a real interesting one. Because of my background having been a researcher and wrote papers, and peer reviewed papers. And now working for a publisher, where I see the other side of it, and I work with a lot of the editors -- I can bring a number of different perspectives to bear on this question.

And there are some perspectives from which the question itself is just an absurd one. And there's some perspectives from which it's fairly reasonable. So from one perspective, just to start with one of the absurd perspectives that not as many people, I think, have access to --

If you think of just Elsevier itself employing 3,000 editors, all the people who are top experts in their field, specifically for the purpose of distilling the information that's out there into a really useful high signal to noise ratio form, for their college to consume, of course that's valuable.

But I also see the perspective that Alex was outlining where, hey, we have internet, we should be able to exchange information a little bit more easily. And why is it still such an expensive thing to do?

So the way that I have bridged these two is kind of with a modification of the old saying that information wants to be free. Well yeah, and it also wants to be expensive, right?

So the missing piece, I think, for a lot of people when they come to this conversation is, I think, that that perspective where they don't see the value of all of the work that the editors do behind the scenes. Not just in selecting really the best, most relevant research, but making sure that it

adheres to high ethical standards, making sure that the data and the code that are supposed to be made available are actually made available, then just making sure that the language is of reasonably good quality.

All these kinds of things go on behind the scenes. And the fact that they work so well is almost detrimental, because people have come to take them for granted.

So the question really is, why can't we do a lot better at disseminating research? When we do have the internet. And I think what we see, a little bit of the challenges in what's been happening with Facebook and other social media outlets these days, there's a lot of motivation for people to spread misinformation. And when there aren't any gatekeepers, it's very easy for that stuff to spread. And as we know, people will make their decisions about what to believe based on things that are going on in their life and their perspective, and how it makes them feel.

And so we might like to believe that everyone is a perfect rationalist, but in fact, that's not necessarily the case. So when it comes to something as critical as scientific research, where there are literally lives hanging in the balance, we want to make sure that the signal is as high quality as it can be. So when you are a researcher and you're developing your theories and you're building your knowledge on what has come before, that you're starting with the most high quality signal that you can.

So I think that's really the most succinct way of putting it, is talking about this refining and purifying process.

Now a lot of people will say, well that's fine but that could be done through a nonprofit society. And that's kind of where you get some of the fairness that comes in. Because I do see a lot of that. People don't understand why there needs to be a financial interest in this at all.

And just to briefly discuss that: Well, yes of course you can. But in fact, the cost structure of some of the society journals are quite a lot higher than the cost structure of Elsevier.

The AAAS, the publishers of one of the largest scientific journals, Science, they estimated that it would cost them \$30,000 per article, which is, if they went to an all author-pays model. Which is quite a lot higher than Elsevier or some of the other commercial publishers charge. And in fact a lot of societies use Elsevier to host their journals because of that cost structure.

So I can see the argument, why someone would say that research is being held back because not everyone can access it. But when you dig into that

and ask, what does it really mean? You find that that's really an edge case, where someone can't get access.

And on the innovation side, is there enough innovation happening, are researchers holding it back?

Julia: Actually, why don't we talk about innovation next?

William: Sure, we can do that.

Julia: It'll be easier if we don't make too many points all at once. Alex, do you want to ask any questions, or comment on the question of value added so far?

Alex: Yeah, I agree with Will that these services that he mentioned are really important. So William, you mentioned things that editors do, and you were referring to professional editors. Well, you were referring to at most journals, the editors are ultimately the employees of universities. But a lot of them get sort of an honorarium or small, \$5,000 or \$10,000 a year from some publishers to do the sort of things they do to coordinate the peer review. And I agree with William that there's a lot of value there.

But for the particular examples you cited, William -- Science charging \$30,000 per article, I think the cost really is orthogonal to the need for these services.

So there's other journal models, open access models that don't cost nearly as much, but you still get the same kind of quality services, in my experience, that you're referring to. For example. And they're not just some kind of not for profit organizations that you might have suggested, or would have more trouble handling this -- for example, Ubiquity, PeerJ, Scholastica, they're all for profit companies. But they're companies that started in the last 10 to 15 years. So by starting from slate, they were able to start internet-centric. They weren't tied to the legacy business model of owning the intellectual property and then charging a subscription fee for us to access it.

Instead, it's based on a fee-for-service model. So the universities or the research funders, they pay each of these publishers a fee to provide those services that William was referring to, and then the cost ends up coming out as well less than \$1,000 per article. For less than \$500 per article, I think, for each of those three publishers. And they're each publishing several dozens of journals that, in my view, are just as high quality as the kinds of things William was referring to.

Julia: That seemed like it might be a crux here. Like empirically, is it true that the journals that are edited by Elsevier, the standards are actually higher quality, the results are higher quality, than the journals that are edited by lower cost providers. Is that ... William, would you say that that's your perspective?

William: So there's two different perspectives on this. I would ... I think that there's a place for price differentiation in the market. And there are going to be some higher quality offerings, and there are going to be some that are more DIY and not quite as professionalized. But it's an interesting question to talk about. Because in a market economy, you're not deciding top down what services should be available, and sort of what they should be priced at. You have options and choice out there for consumers, and people just kind of self sort into these things.

But in academia, the question gets really funny because this is ... we're talking about empirical facts. You should be able to assess whether a fact is true or not based on the quality of the evidence presented. And so those two things in the conversation get mixed together. It'd be helpful for our understanding if we could try to keep separate the concept of the quality of ... Or the academic status of the facts reported, and the quality of the publication process.

Because I think it's right, as Alex noted, to think about it through the framework of a fee for service. And in fact, a lot of what Elsevier is talking about these days, referring to themselves as an information and analytics provider, is explicitly moving in the direction of casting themselves as a service provider.

Julia: Can I ask, while we're talking about the price compared to the value add? It seems to me like it must be true that some significant percentage of the price that Elsevier charges comes from the bundling of journals -- that universities or other institutions can't buy a subscription to a single journal, they're offered sort of package deals, like cable or something. Which I assume must increase the price. Because [institutions], otherwise, would just want to pick and choose. But instead they also have to pay for other journals.

And I don't know how to estimate what percentage of the price that's responsible for, but it seems like A, it must be significant. And B, it doesn't seem like it's adding value. Does that seem right?

William: Yeah, I think you're right to point out that there are strategies that Elsevier employs to keep its value and its price high. And these strategies aren't very popular. I mean, I don't watch TV. But I do remember some resentment back when you couldn't get a cable internet access connection

without paying for the whole TV and telephone bundle. Or they would dramatically cut the price of one, so you might as well get all. So I get that like yes, it is a business decision, which is kind of ruthless, capitalist in some sense. But at the same time, you have to ... the moderating influence on that, I think, is that you see nowadays whole consortia and over in the EU, whole countries getting together and negotiating en masse against a company.

So there's definitely a lot of aggressive pushing from both ends to try to find the optimal price overall.

Julia: Yes. Alex, if you imagine a world in which there are a bunch of for profit journals, but they're not bundled together ... like, let's say Elsevier still offers all these journal subscriptions, but you can buy them individually. How much better is that world?

Alex: I mean, I think really, you put your finger on one aspect, as William admitted, Elsevier uses as a business practice to jack up the price. That's one sort of anti-competitive practice, to obscure transparency in the market. Such as it is. It's not a functioning market anyway, which I can get into.

But other aspects are, for example -- all the contracts that Elsevier signs with universities, they traditionally put in a secrecy clause. So the university, the librarians can't even disclose to their own researchers how much they're paying for subscriptions to Elsevier Journals. And it's only through Freedom of Information act requests that we've been able to find that out in the UK, and America, and Australia.

So in another, further anti-competitive practice -- as William was saying, somewhat ruthless business practices are that academic editors that sign up to join Elsevier Journals, they often have a clause in their editorial contract that they can't ... I don't know what the legal clause is, along the lines of "working against the interests of Elsevier." In other words, you can't work on starting another journal in that field, because we sort of own you, sort of thing. To put it crudely.

But I think these sort of anti-competitive or ruthless capitalist practices -- sure, they further jack up the price by some amount that Elsevier and other publishers are able to charge. But the real meat of what has contributed the most to these 37% profit margins, operating profits that Elsevier's had over the years -- as opposed to, for example, Apple that comes in around 29%, Google around 22%, that should be a big warning sign in itself. That shows that there's something wrong with the business model.



And to me, that's what's driving up the price. That they own our intellectual property, and thus they're selling it back to us for an annual fee.

Now Julia, you mentioned for profit journals, but I would put it differently. I'm happy with for profit organizations, companies, corporations being involved, providing the services that lead to the journal publication.

But I don't like the idea of for profit journals if that means they own the journal, and thus they have a monopoly on that kind of important research community that all of the researchers are trying to publish in. If they own the content of those journals, so their incentive is to restrict access and then charge the most subscription they can. Instead, we'd rather just pay publishers a fee to publish the thing, and then that's our contractual relationship.

Fee for the service. We can look for different publishers, we can switch to a new publisher, if we're not happy with the services, and we find a cheaper one. No corporation owns our journals.

William: Yeah, and that's really the whole idea behind the author pays open access. Where you're essentially putting the financial burden to run the services and to maintain the corpus on the payer. It's just a different way of paying for the same thing.

Julia: I'm sorry, the "author pays open access," are you talking about some journals under the Elsevier umbrella?

William: Yes.

Julia: So the author who submits the article pays Elsevier in exchange for Elsevier making the article available to the public? That's what you're talking about?

William: That's the way the author pays model, sometimes referred to as the "gold open access" model works. You collect a payment up front as opposed to charging suppliers. And that's a pretty common structure across the industry.

Julia: Can you say roughly how common?

William: We'll point out ...

Julia: Like roughly what percentage of articles in Elsevier Journals are that model?

William: So about 20 ... oh gosh.

Julia: Roughly.

William: The amount of open access on a per article basis is going to be in the neighborhood of 7%. Which is not a whole lot in relative terms. But in absolute terms, that puts Elsevier as one of the top publishers of open access content, which not a lot of people realize. And it has also grown 25% since last year.

I just do want to make one little correction, I'm just sort of obliged to do so, about the profit margin numbers. In fact, Elsevier doesn't report profit margins at the level of divisions, they have an operating margin. The actual number is somewhere around 23%. But just, that number gets out there, and it gets mentioned a lot. So I just wanted to make that correction.

Alex: And that's part of the obscurity, the difficulty of knowing the true cost. Which is again the problem with having the subscription model, that we're not paying directly for a service. Elsevier and other corporations, they don't break down their business enough for any outsider to find out what it's actually costing them. So while the operating profit was 37% I think in 2013, 2014 for the corporation as a whole, everybody outside of Elsevier knows for the journal, actual production costs, how much it costs.

William: Yeah, there have been various reports of the costs of open access publishing. And like I said, a big society journal like Science, it can be very expensive. The fact that a lot of societies use Elsevier hosting shows that we have a little bit more competitive cost structure than some in that respect.

But I think it's, the whole idea of open access makes a whole lot of sense in that you have a lot more clarity over what the actual cost is. You don't necessarily get away from the bundling, necessarily. Because what ends up happening is that the individual authors don't want to pay individually for their articles, so that ends up being paid on a consortial level, where a buying consortium gets a blog grant and they pay for the members within that consortium.

So the ideal is itemized, kind of like you said, where each person is making their own individual payment. But in actual practice, the way that looks is very similar. Is that the library still has a chunk of its money that goes to a publisher for the same stuff. We're just kind of calling it something different.

Julia: Alex, would the open access model that William was describing, how much of your concerns would that address? Let's say that the number went up

from 7% to 70% or something, is that cool? Now everything's mostly good -  
- or no?

Alex: So yeah, it's a little bit of a tricky point.

Because a lot of those, in general, going to pure open access with something like that model, whether it's author pays, or... I prefer a system under which the funders would pay for journal platforms. That then any scholar could then publish their articles in without paying any fees.

So that way, researchers with or without funding have equal opportunity. And that might sound a little bit idealistic, but when you think about the internet platforms that are potentially there, or internet platforms that are already there, most of the cost is actually in the setup.

And there's overhead in updating it each year, and updating all those web standards and so on, updating all the database operations and stuff. But that's a cost that applies to the whole platform. So then when you get to the marginal cost, the per-article cost, it ends up being very, very low. Once you put a large scale system in place that's really functioning at scale.

So that's why funders who have supported these broader platforms, for example, the over 100 university libraries that have banded together to fund the Open Library of the Humanities, that publishes several journals. Well, the Open Library of the Humanities is a scholarly organization. They pay a fee to a for-profit publisher to help assist with the platform. But that for-profit publisher does not own the copyright to the articles, unlike in most cases. So that's an open access model that doesn't require authors to pay individual fees.

And I like those companies that are using 100% that business model.

Now when we talk about, to your point, the case of Elsevier presently publishing 7%, but that percentage is going to go up? Well that's great, although the difficulty for me there is that most of those articles are being published in hybrid journals. So rather than being pure, open access journals, even the 7%, they're being published largely, although not exclusively -- Elsevier also publishes a bunch of fully open access journals. But a lot of them are being published in hybrid journals, meaning that they're both subscription and open access journals.

And when the author or someone else, the funder, pays a fee, that makes that individual article open access. Which is great for that individual article. But what it doesn't do is... it's still supporting a subscription journal. So it doesn't bring us closer to that future that there's a consensus

of researchers, universities, and funders around the world that we want to get to, which is to have all the articles in a journal be open access.

Julia: Couldn't you get there by convincing individual authors that they should make their articles open access? And then even if the journal was still technically hybrid, then in practice they would be open?

Alex: Yeah. It's tough though, because plenty of researchers don't have the fundings there. So I don't envision in that kind of incremental system us reaching a 73% or 95% open access for those subscription journals.

And so in the meantime, Elsevier's, their incentive is to just keep maintaining the subscription model, because that's where you can earn the most profits.

I mean, that's what I like about the newer companies. They don't have the privilege. Maybe they would be just as exorbitant in the fees that they charge if they could, to deliver more value to their shareholders, but they don't happen to be in the position that Elsevier has of owning all of these legacy journals that researchers are competing to get into.

Julia: But wouldn't you ... I'm sorry, go on.

Alex: Well, so Elsevier's specific incentive -- that's not true of all publishers, but true of many of the multinational, is they've got to defend to their shareholders, "Well right now we're earning whatever, kind of, more than 20% operating margin."

And that's mostly on the back of subscriptions. Or charging a large author processing charge, averaged \$4,000 for the welcome trust for the articles they paid for last year. \$4,000 per article for the charges that William Gunn is referring to.

So that means that, because of those prestigious journals, they're able to charge a much higher fee than is the actual cost, when you look at the newer publishers that are charging close to \$500 per article.

Julia: But so wouldn't you still have the same problem of convincing journals to go full open access, even without Elsevier in the picture?

Alex: Sure, sure. Yeah, yeah.

Julia: Like, yeah, how is Elsevier making that worse?

Alex: So it's a collective, right? Okay, so for an individual researcher like myself, we're not trying to make money, and we just want as many people to read

our articles as possible. So we'd like to make it open access if we can. However, we're trapped in this system of, in order to get promoted, in order to get the next grant so I can write more articles, I need to publish the more prestigious article that I can. And those articles happen to be, most of them, subscription based.

So while, for example, Elsevier likes to talk about author choice, and the reason that authors are publishing in those subscription journals is because they chose to do so.

Julia: Right.

Alex: But that choice is unfortunately rather constrained. Real freedom means having a realistic alternative that will maintain your career.

Julia: Right, but is it Elsevier's fault that the choice is constrained? Or is it just sort of this inertia, caused by --

Alex: It's a historical accident, yeah. Or it's... the production of the printing press, it used to be that in order to get something published, someone had to make a big investment. The printer who owns the printing press, had to decide to run 10,000 copies of this thing. So you had to make to them a big concession, like "I'll give you the copyright to my thing," and then the publisher would just take care of it all.

And so that's the way most journals work. And so thus, Elsevier's able to own the copyright, and now charge a larger fee than the service is actually worth.

William: So that is true, that is a historical fact, that there was a reason that we took this kind of approach to where we are. It was a path-dependent process, to get to the state that we're currently in.

And if you think about how to shift this equilibrium, you have to consider some of it being path-dependent. Like it was this historical print legacy.

But even past that, publishers have been fully digital for decades now. And so there are forces that are at play that are fairly separate from that historical legacy, and that would remain in any new equilibrium that we found ourself in.

Some of those forces are the brand value. We spoke a little bit before about how do you ... if the truth of a fact is something that can be ascertained, and that is a thing that's independent from the value of the quality of the production of the journal, right?

So you're still going to have this disconnect where, how do you know what papers you should be reading, as an academic? And you're still going to have a need for some sort of a proxy, to guide how you are going to allocate your attention. Because you've only got a finite amount of attention, no matter what publishing system you use.

And so right now, we use Journal brand as a proxy for that. And you know if something is published in the Lancet or in Cell or something, it's probably gone through a very rigorous review. It's had the editors there are top experts in their field, and they had their pick of literally thousands of other articles they could've published, and they chose yours.

Julia: But it seems to me that the question under dispute here is whether Elsevier is contributing to that? Or whether Elsevier is just benefiting from having acquired the journals. Does that seem right?

William: Yeah, yeah. I think it's reasonable to query to what extent Elsevier contributing to that? Or just benefiting from this historical legacy. We could kind of get into the weeds all day talking about different business models. But fundamentally, it really does come down to this question of choice.

Julia: So you think authors do actually have a meaningful amount of choice? In contrast to Alex's view that they don't?

William: Well, so they do have a meaningful amount of choice in most cases. But in most cases also, they're not feeling constrained. I feel it's important to point out, just to set the context a little bit here, that if you take all of the tweets mentioning Elsevier, and you do a network analysis of those, the tweets that people are happiest about, the ones that have the highest page rank in that network, that people are retweeting and giving congratulations for, are tweets where people are saying, "Finally got my article published in this journal, thank you Elsevier Connect."

Which was surprising to me, because from my researcher perspective, I thought people don't care who the publisher is. They care what their journal is, they care about their field. But actually, there's a tremendous amount of positivity out there about the work that Elsevier's doing and the value that they're adding to the whole process. So we hear that debating specifically to what extent is Elsevier helping or hindering, really all you have to do is look at the revealed preferences of the people in the marketplace, where they do have quite a lot of choices available to them.

The overall idea here, and we may want to dig into this a little bit, is how free that choice is. To put some empirical facts on the table: There was an analysis done... where they looked at the content of faculty tenure review

packets. And they looked to see kind of what phrases were mentioned more, what things people were using to assess their faculty for promotion.

And what they found that was a surprising finding, was that the impact factor of the journal -- which is bad way of measuring the importance of a journal, because it's just basically an average of how many things are published divided by how many citations were there, so it's a terrible metric...

But that used to have this status of, oh researchers have no choice because we have to publish in these high impact factor journals because it's important for our career.

And in fact, when you look at the data that is mentioned in single digit percentages of tenure review packets... So I think it's probably similar when it comes to the choice that people have been making, where they would like to have their things published. It's sort of a common thing that people put out there as like, we don't really have this choice. But in fact, there's maybe a lot more choice than they realize.

Alex: If I could speak ...

Julia: Yeah yeah.

William: And one more piece-

Julia: Sorry, let's hold off on the other piece for the moment.

William: Okay.

Julia: Alex, do you want to comment on that?

Alex: Yeah, well actually, the student before this podcast who was telling me about her yoga class, another student in that same little coffee I was having, coffee chat, she was saying in response ...

Julia: This sounds very improbable, that you just happen to have ...

Alex: I know, I know.

Julia: ... conversations with people that are so relevant to the podcast.

Alex: Well I couldn't help but brag that I was going to be appearing on the Rationally Speaking podcast, and they asked why. And so Elsevier came up.

And then this other student, she said, "Well in my field, there's not really much choice available besides Elsevier, like the leading journals in personality science all seem to be Elsevier." In my particular field, we do have a couple excellent open access journals, fully open access journals. But that's very spotty.

And the traditional open access journal that goes back in history that people traditionally venerated because of its age, because of the self reinforcing cycle of "Well, the old great scientists from the previous generation, they published there, and so that's where we want to publish."

So you get this inertia, with journals. It's very hard to displace. So I think that speaks to why.

And as William pointed out, this kind of prestige hierarchy has been maintained. And Elsevier was very smart. Decades ago, there was an executive there who went around and had the foresight to buy up lots of these journals. Such that Elsevier now often does own the most prestigious journals. The most prestigious, not necessarily because of Elsevier, because they've often been that way for decades. But because of their age.

And to me, it is difficult, under the current system, to figure out the value of things.

So another end run around the system that provides open access immediately is the posting of pre-prints. So that we separate out more cleanly these services that William and I are discussing, into a point where we just... since it was the taxpayer that did pay for my research, just make it available on the internet, I'll do that. I'll post it to what we call a "pre print server."

And then all the value that publishers might be adding can happen after that.

William: Yeah, I think that's great. It's a great model. And several people at Elsevier agree. In fact, that's why we acquired SSRN, which is a pre print repository. And have since expanded that, from the social sciences, into biology and chemistry. I think that's a great model. And Elsevier is incentivized as an organization now to make that happen.

Coming back to the point about revealed preference: If there aren't options, and there is a large desire for there to be options, then what is the disconnect? Is it true that there is a demand? Or is it more actually true that maybe the reason that it's not there is that there's not that much of demand?



I think it's an interesting empirical question that we don't have the answer to.

But as a company, you put things out there. And you see if it is successful as a product. And it survives or fails based on whether or not people pick it up.

Julia: Well, there are also monopolies.

William: Yes, well, there are. And that was the piece I was going to raise. So since you mentioned it --

Julia: Sorry, let me just let Alex respond, then you can go.

Alex: I'm glad you mentioned monopolies. Because yeah, I view the journal ownership as not being these different journals that you can choose among. Although as that student mentioned, in her field, she doesn't see an alternative to Elsevier. And for example, in the review journals that I would publish in my field, there doesn't seem to be any alternative to Elsevier.

But let's put that aside and talk about just individual journals, assuming that you are in a field where you have choices besides Elsevier. The journals, you can think of them as monopolies. Because they're not a commodity, they're not substitutable goods. It's not a situation where -- because of this prestige hierarchy, as a researcher, my goal is to publish ... I mean, my goal if I want to speed my career as much as possible, is to publish in the most prestigious journal.

And so people are willing to do anything for that. It doesn't matter what the price differential is for that. In fact, most researchers don't have any idea what the difference is in prices among different journals.

Julia: Yeah, there is that weird disconnect about who is making the decision about which journals to subscribe to, or which journals to submit to.

Alex: Exactly. It's librarians.

Julia: And who's paying for the subscriptions.

Alex: And even if they did know the price -- and as you said, they're not even paying for the price -- to them, the incentive is "I want to get promoted, I want to get the next grant so I can do my life saving science. So I want to have my CV looking as good as it can, so I'm just going to first publish with the most prestigious journal."

And the most prestigious journals have been the most prestigious journals, for the most part, for many years, because of this self reinforcing cycle, that you just want to be part of the club that the most prestigious journals last year were part of.

So it's not a functioning market at all. The people who are deciding where the resources go to, that is the researchers who are sending articles to journals, they don't know what the price is of those journals.

And those journals are not substitutable. So the economist Ted Bergstrom at University of California Santa Barbara, he describes it as an inelastic demand situation. So his analysis is that Elsevier and other large, traditional publishers have been able to consistently increase the subscription prices to these outsized profit levels. Because the economic, technical term being that the demand is *inelastic*. Meaning that it almost doesn't matter what you charge, these people want it so badly that they'll pay whatever.

William: Well clearly, they hit the context that we're having this conversation in, where we're very clearly getting the signal. Actually, there is a lot of price feedback. And there is a whole lot of price feedback that is currently happening, right now, this very moment. So I don't think that that analysis is quite correct.

But what it sounds to me like you're saying is that there's a bit of a principal-agent problem here. And I think that's probably true, that there is a disconnect.

So, the question is, how do you give ... So, the posit that most researchers just want to do their research. That's their priority, right? And, they do the publishing and the applying for grants and other stuff because they have to. But, really, if they could be left alone and to have all the resources they need to do their work, you wouldn't hear from them again. That's just what they would be doing until they finally had something wonderful that they wanted to come up and share with the world.

So, I would really like to get more to that kind of place, where we give the researchers the freedom and have worked for quite some ... did quite a lot of work on helping to get more efficient allocation of the grants to ... of the grant money so that researchers can spend more of their time doing research and less of their time dealing with the administrative stuff.

Alex: I agree with you, William, that yes, it's changing. It's changed. But, it's taken a long time. You've seen these mass cancellations in Germany, potentially in Holland for a while, in California.

Julia: When you say "mass cancellations," you mean institutions-

Alex: Of Elsevier specifically. Yeah, yeah, institutions-

Julia: ... canceling their contracts.

Alex: Yeah, so the University of California system being one, but in other countries, it's often many more universities together bargaining as a large consortium with Elsevier, and then ultimately saying, "We're going to cancel our subscriptions en masse."

But, that's only happened in the last five to ten years that, yes, yeah, I agree with you, William, that this price feedback has started.

But, unfortunately, it's come too late, at a point where ... well, not too late, but at a point where already the prices have reached the breaking point. You didn't see that before. And if you look at it historically, I think what's happened is that it's just taken so long to educate researchers because the universities are not gonna ... They don't wanna stick their head out there and cancel the subscriptions of the researchers if the researchers are going to go into revolt.

It took the education of researchers to understand the nature of the business model and realize: although, yes, a lot of these Elsevier journals the University of California canceled are the top journals in their field, they can now get behind the university administration in saying, "No more. These price rises have just gone on too far, and the value that Elsevier is providing is just not worth it."

William: People have been saying that for years. Like, for 20 years now, people have been saying, "Oh, we've reached the breaking point. We reached the breaking point." And, I don't know how to answer that in the context of a market economy other than like, "Let things happen."

But, you're absolutely right that these cancellation... conversations, I'll say. Because in a lot of cases, the negotiations are still going on. And Elsevier's continuing to provide access, for example, to ... even to the University of California, while the conversations are going on, but they're framed as, "Oh, this is the end. It's finally ... It's a cancellation win."

That's actually not the case. It's really just a negotiation tactic that happens more these days.

Julia: William, can I ask if you think ... I feel like I remember seeing you on Twitter say something about the interests of Elsevier being aligned with openness. And I wanted to ask about that, because it doesn't seem obvious

to me that they would be aligned. Like, it ... I don't know. I mean, one thing that seems like evidence against that is that Elsevier has campaigned against openness in the past.

William: Well, they have.

Julia: Like, they supported bills that have tried to restrict access. Or tried to prevent federal funding agencies from requiring research that was federally funded to be made open access.

William: Oh, yeah, and if you want to see all of that stuff, you can go to the Wikipedia page and read about the like-

Julia: It's full of color, yeah.

William: You know, read about the things that happened, for the most part, 10, 15, or longer years ago. What Elsevier's been doing more recently ... And, the reason I brought up the piece about "researchers just want to be in their lab doing their research" is because they're not paying attention to this stuff.

The concept, or the model, people have in their heads of Elsevier, I think, is still that 10-years-ago model. Elsevier, in recent years they bought Mendeley, which was a tool that ... I was one of the early employees that helped researchers to find and share and collaborate on research. They've bought a preprint repository, SSRN. They bought a publication platform and a university services suite of tools called Bepress over there in Berkeley. And a number of things.

All of those are the things that they're moving in a services direction. And since they're moving in the services direction, their interests are becoming more aligned with that of the researcher because they're providing researcher services directly.

So, there's the publishing concept of Elsevier, as a publisher, which is what a lot of people still think. And then there's what Elsevier actually is now, which is this information services business. They've become that over recent years.

Julia: I see.

William: And, people just kinda need to update a little bit on what has been happening.

Julia: Interesting.

Alex: Okay, I'll tell you how much I have not updated. So, I haven't seen, William, your tweet that Julia was referring to, but I did see Elsevier's statement in response to the University of California's subscription cancellation. And, the first sentence of that statement was, "Elsevier has, first and foremost, the interests of researchers and students at heart."

Which, I felt it's just sort of insulting my intelligence. I mean, come on.

Julia: I mean, I feel that about every business... Every business makes statements like that. Like, Facebook "genuinely cares" about my friends.

Alex: Yeah, but look at Facebook, "Oh, we're connecting the world." Okay, at least it's a vague, kind of feel good statement. They're not trying to tell us, "Oh, yeah, our interests are exactly aligned with you."

The public relations way that you should be dealing with a situation where you're trying to maximize profits is not... No one's going to believe if you say, "We have, first and foremost, the interests of researchers and students at heart."

As a corporation, we know you're responsible to your shareholders. They have their own interests. Researchers and students have somewhat different interests.

William: So, this gets a little bit into the long-term versus short-term perspective and -- sorry, I didn't mean to cut you off there. But, I've heard a version of this same argument over and over again, and so I'll just jump to the end, if you don't mind.

So, it is absolutely true. I mentioned I have this kind of dual perspective thing that I can bring into play, and I can totally get why like say, "Oh, this is ridiculous. Nobody's gonna believe this. They're all about their shareholders."

But, who are the shareholders of Elsevier? They're pension funds. They're these very slow, stable funds that just want something that has metronomic performance in the market. And that's basically what Elsevier has done, has been like a couple percent increase a year steadily, year after year.

And, that's who the shareholders are. So they very much have a long-term perspective. And they want these kinds of things... They want us to be aligned with the transformation of the industry. Not just being a publisher, and like being one among many things that the library deals with, but being a company where we have so many touchpoints across the research life cycle. Not just at the point of publication, but at the point of figuring

out what you should be reading, figuring out what kind of experiments you should be doing, hosting your data, collaborating as you're doing your work, discussing things at the pre-print level.

All of those kinds of things -- which is the core of open science, right? -- all of that stuff is, right, directly square where Elsevier is going as a company.

So, from the inside, it makes sense to talk about that, and that's why I'm trying to bring out this dual perspective thing and say, "I get how you would not get that, not knowing what I know. But knowing what I know about what's actually going on, it really does ring true to me that that's what they are in fact trying to do."

Julia: So, in the interest of time, I want to summarize what seems to me to be the cruxes of disagreement. And then I guess each of you can briefly comment on my summary, and then we'll probably have to wrap up.

William: Okay, sounds good.

Julia: So, William, you've talked about the value added by Elsevier. Both in terms of just, "Look at the value we're providing. Editors do all these good things, increasing the signal-to-noise ratio, and enforcing standards, and you can see this ..." I guess, presumably, you would say, "Just look at the quality of the journals produced by Elsevier versus journals that aren't."

And, then you can also see, you claim, that those valuable services are being valued by people, because of revealed preference. Like, people are in fact choosing to submit their articles to Elsevier, and they're choosing to purchase subscriptions.

And, then as I see it, the argument that Alex is making is that it's not that no value is being provided. But that if you unbundled everything and basically allowed institutions to purchase subscriptions to single journals, and not whole packages of journals, and if you separated out all the different services you're providing -- and, I guess, didn't own the copyright -- but instead just provided all the value that you say you're providing, and allowed people to purchase it separately, that the landscape would look very different. And Elsevier wouldn't be charging as much. And the purchasing decisions people would make would look pretty different than they currently do.

Does that seem like a good summary to you guys?

William: Well, the one piece that I was trying to put out there was we didn't get a chance to talk too much about the innovation side of things-

Julia: Right, yeah.

William: But, I do think it's important to say that there are examples of different models that are out there. I really want to see, in this unbundled world, if things would be more innovative or less. Because we've had Arxiv around for decades now and it still looks basically kinda the same way it always has.

Julia: Arxiv is just the site where-

William: Yeah, it's Arxiv.org. It's a place where physicists post their preprints, and they've been doing that for literally decades. And, the field of physics is far from the most innovative side of things.

And, so I really do think that the innovation point -- of like, is that actually going to make things better or worse? -- is an important thing to think about. Because there's a lot of reason to believe that a company with a profit motive, and incentive, and customers that it needs to please, which is why the services model is important.

And, I really wanted to get that perspective, the moving away from a publisher to more of a service provider. Because that makes them need to do this kind of innovation. It makes them more answerable.

I think it's going to resolve a lot of the problems people have. A lot of the issues that people bring up over and over, I think, are going to get resolved in this way.

And, maybe I'm too much of an optimist to think so. I certainly speak with enough cynics that are always like, "Oh, well, we've been asking for this for years and now Elsevier's trying to co-opt it." I'm like, "Well, what do you want? Do you want us to not do it or to do it?" So, it's a little bit of an issue where some people just don't like for-profit in general. And you have to be able to distinguish whether it's like, "We don't like for-profit, and Elsevier's an example of for-profit," and so we come up with slightly orthogonal reasons that we don't like Elsevier. Where, really, at the heart of it is that we just don't like for-profit enterprise. There is some of that.

But who can be more innovative than someone who has lots of money, who has a trusted, respected brand and is actually showing, I believe, empirical evidence that they are innovating in the way that the market wants?

Julia: Alex, do you have a reaction to my attempt to summarize the disagreement? And/or to William's take on the innovation point.

Alex: Yeah. Well, let's start with that. It's great that what ... It sounds like William and I are agreeing. It's great to hear William say that he's seeing a possible transition to a service provider as being the future.

And, we've both seen from the complexity of this conversation that as Julia, as you pointed out, unbundling is what we're gonna help expose any value that's being provided. So, that's really what I've been arguing for, is that the current business model is just a bit inverted.

I mean, it's kind of like Julia, William, if you became pregnant ... Maybe more likely in the case of Julia. Like, if you then went to an obstetrician and the obstetrician said, "Well, I'll deliver your baby for you, but what you need to do is let me adopt the baby, and then I'll lease the baby back for you to an annual fee." So, in other words, it's an ownership model where they have your creation, their baby.

In my case, some of my babies are scientific discoveries that I wanna just broadcast to the world, but they end up ... The publisher ends up owning it and leasing it back to me and my universities and my colleagues. So, yeah -

Julia: Whereas, in practice, what we want to do is share our babies with as many people as possible? Is that...?

Alex: Okay. Well, that's where the analogy stops.

Julia: Alex, one very last question, what's the name of the dog that was chiming in throughout the show?

Alex: Oh, could you hear?

Julia: Yeah, no. That's great. I-

Alex: It was on this side? Oh, you could hear Hugo, the dog?

Julia: Hugo! Okay. No, yeah, I wasn't complaining.

Alex: Was Hugo barking?

Julia: I just wanted his name.

Alex: Oh, I think the headphones I'm wearing are so soundproof, I guess, that I never even heard Hugo bark.

Julia: He was great. I thought he made some very good points.



Well, guys, thanks again. I really appreciate it. And, yeah, it was great having you both on the show.

Alex: Thanks, Julia. Thanks, William. Yeah, it was really nice to have this back-and-forth, and we found some points of agreement.

William: Yeah, I'm so ... Like I said in the email, I'm so glad to be able to sit down and have a mature, rational discussion that goes somewhere, that isn't like an experience where you have 15 other people chiming in with their points, you know --

Julia: Are you talking about Twitter? Are you sub-tweeting Twitter off of Twitter?

William: I'm sub-tweeting Twitter on a podcast, yes.

Julia: Right, yeah. All right. Well, this concludes another episode of Rationally Speaking. Join us next time for more explorations on the borderlands between reason and nonsense.