



## **The Problem With Paper Mills**

**Interview with  
Joris van Rossum, Director of Research Integrity  
STM Association**

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**KENNEALLY:** Misinformation and disinformation are hardly limited to election campaigns. Fake science is overwhelmingly common and can be even more dangerous than fake news. A vote for the wrong party may be consequential, but a decision to take the wrong medical treatment can be deadly.

Welcome to Copyright Clearance Center's podcast series. I'm Christopher Kenneally for Velocity of Content.

Fake research papers, often associated with fake authorship, threaten to overwhelm the editorial processes of scholarly journals. No matter what the discipline, fake papers are damaging to the trust that researchers and other readers have in what they read. In clinical medicine, fake papers may also waste taxpayers' money and potentially risk the public health.

In June, the STM Association and COPE, the Committee on Publication Ethics, reported on the problem with paper mills, the sources of manufactured manuscripts submitted to scholarly journals for a fee on behalf of researchers with the purpose of providing an easy publication. Joris van Rossum is STM's director of research integrity, which is organizing a major initiative to combat the problem of paper mills. He joins me from Amsterdam. Welcome to the program, Joris.

**VAN ROSSUM:** Thank you, Chris. Good to be here.

**KENNEALLY:** Well, the term paper mill is one that's becoming unfortunately increasingly common in scholarly publishing. But tell us what it's about. What is a paper mill?

**VAN ROSSUM:** A paper mill generally is a commercial enterprise – and some of them are actually quite sizable and quite highly professional – that manufactures manuscripts. Those are submitted to journals on behalf of researchers, as you said, for the purpose of providing an easy publication for those authors or offering those authorships for a fee.



KENNEALLY: Tell us more about how this all works, then. If I'm an author, and I would like to advance my career by being published, I go to one of these paper mills. What am I expecting them to want from me, and what do I get in exchange, then?

VAN ROSSUM: Yeah, we actually identified several models that these paper mills use, but the most common method that we've found is that a paper mill is produced or written by paper mill staff. It can be a totally made-up paper. It can be plagiarized, pulled together from different manuscripts, or even just republishing an existing paper.

Once the paper is submitted and accepted, then it is listed often on a website. So it's offered for sale. And then the offer is to buy authorships – so the first, the second, and actually those have different prices as well. The prices vary in terms of who's the first author, but also in terms of the impact factor, of course. The higher impact factor, the more an author has to pay.

Then the authors are assigned an email address, but actually the paper mill does all of the correspondence. Some of this correspondence is actually surprisingly professional how they manage to do this. Sometimes, they also manipulate the review process. So they often have placed email addresses in the database of these journals, or they recommend, let's say, reviewers that are part of the paper mill. So they will offer favorable reviews to these papers.

And then once a journal publishes the paper, often we see that those paper mills will, again, target the same journal. So once they've found a journal that is willing to accept them, then often these journals are flooded with others as well.

This is more the individual case. You also have special issues that are often used. Special issues often offer the opportunity to submit a manuscript with a specific subject area which is attractive for these paper mills, but also we see it in conference proceedings that often a lot of papers are submitted to these, and unfortunately in some cases are published.

KENNEALLY: And the motivation for authors, as we said, is career advancement. But in some cases, there's also been financial incentive to work with paper mills.

VAN ROSSUM: Of course, the publish or perish and the pressure to publish plays an important role. But in some countries, that is even more, let's say, severe than in other countries. In some cases, professionals need certain publications to advance their careers – for example, clinicians that have to have a certain number of publications – which is, of course, creating pressure to use these paper mills. Sometimes in general to advance your career, it's, again, coupled to publications in certain reputable journals.



So what we see in, for example, clinicians in China is a very important case. They need publications. They don't have the time. They work very hard. So in those cases, it's often tempting to make use of paper mills. It is an incentive problem as well for general academics, for specific professionals. So various reasons that people unfortunately are making use of these services.

KENNEALLY: Have you identified certain countries as the sources for these fake papers?

VAN ROSSUM: Yeah, that's very difficult. You can say that it's concentrated in some countries, but it's also not in one particular country. And of course, the problem is they are opaque. They know what they're doing. In most cases, they don't advertise what we're doing. So it's quite difficult, actually, to identify where they are.

KENNEALLY: Of course, any fake paper is going to be a problem. But in scholarly publishing, what's the scale of the paper mill challenge here? Are we talking about something that is really beginning to undermine the entire field?

VAN ROSSUM: The problem we identified and the concerns we have is that it threatens to overburden the editorial process. Fortunately, we do a lot already. Most publishers have research integrity teams and teams that screen content. Of course, there's a lot of volunteers, the so-called sleuths that identify problems with articles, and they notify the publishers, sometimes leading to retractions of those papers. But the scale is getting challenging.

Of course, publishers have done a lot of research. We have done a meta-analysis based on the research from those publishers, and what we've found is that the range of percentage of submitted manuscripts coming from paper mills ranges from 2% to sometimes 46%. That has to do, indeed, with the subject area. But also, as I mentioned before, once a paper mill finds a journal that is likely to accept a paper, then they often tend to submit more papers there.

KENNEALLY: Joris van Rossum with STM Association, tell us more about the Integrity Hub and how it is going to address the problem of paper mills.

VAN ROSSUM: So the key word in the problems we face is collaboration – collaboration, first of all, with publishers. The Integrity Hub was launched to allow us to collaborate on the level of knowledge exchange. So simply having publishers together and sharing our experiences, for example, with paper mills is extremely beneficial. But also, collaboration on level of policies and standards and ensuring that we have a unified approach towards these paper mills. But also, for example, developing interoperability standards, allowing screening tools to be easily connecting to journal platforms. And collaboration, last but



not least, on the level of technology – again, technology playing such an important role nowadays in detecting integrity issues.

So collaboration among publishers is extremely beneficial. It allows us to build platforms that can basically screen submissions across publishers. It allows us to build training sets. It allows us, of course, to create scalable AI, really essential in the problems we're facing today.

So we launched Integrity Hub – we announced it in December. We had our first proof-of-concept release in April of this year. And we have at the moment over 20 publishers participating, which is really a great achievement. And again, very importantly, not just, let's say, the larger publishers, but also the midsize publishers, sometimes publishers that only publish one journal. Because the threat, of course, is that, let's say, the smaller publishers do not have the resources as the large ones have to make use of technology, to have specialized teams. So we want to really make sure that these integrity issues – that basically the solutions we build are accessible to everyone in the community.

**KENNEALLY:** Joris van Rossum, are publishers alone responsible for addressing the problem of paper mills?

**VAN ROSSUM:** Actually this is a challenge for the entire scholarly community. What we really want to do is ensure that we tackle this problem at the root. The worst solution is retractions, right? That's really what you want to prevent. It's very cumbersome, and often it already leads to damage – people reading those papers or building on research that is simply false. Screening them at submission is very important.

But again, eventually you want to prevent people having to make use of these services. That means that we have to collaborate with funders, with institutions, of course, with researchers themselves, taking away the incentives I just talked about, ensuring that there's proper training, ensuring that governments, for example, do their part in terms of ensuring that those paper mills cannot operate. So a very important recommendation in our paper mill research paper that we developed together with COPE, as you mentioned, is really that collaboration. Also, we're planning some seminars, some meetings, bringing together multiple stakeholders in the ecosystem, ensuring again that we do everything we can collaboratively to prevent this.

It's not just something that publishers can solve. Yes, we play an important role, and we're very happy to do that. But again, in order to prevent the issues, collaboration is key.

**KENNEALLY:** Joris van Rossum, director of research integrity with the STM Association, thank you so much for joining me today.



VAN ROSSUM: Thank you, Chris. It was great to be here.

KENNEALLY: That's all for now. Our producer is Jeremy Brieske of Burst Marketing. I'm Christopher Kenneally. Thanks for joining me on Velocity of Content from CCC.

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