Sci-Hub: More Trouble Than It's Worth?

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"Resolved: Sci-Hub is doing more good than harm to scholarly communication."

That was the proposition for a debate chaired by Rick Anderson at this year's Researcher to Reader (R2R) conference. R2R has never been one to shy away from controversial topics, and this year proved no different as Daniel Himmelstein, a postdoctoral researcher from the University of Pennsylvania, squared off against Justin Spence, Co-founder at Publisher Solutions International.

The Researcher to Reader conference takes place in London in the last week of February every year. The conference began as the annual meeting of the association for subscription agents. Despite that organization ceasing to exist in 2015, the conference has continued independently and has evolved into a collaborative forum for publishers, librarians, researchers, technologists, and funders to discuss aspects of the scholarly supply chain as a whole. Bringing together such a diverse range of perspectives results in exchanges of views and a level of discourse that is hard to find elsewhere.

With Sci-Hub being such an obviously emotive topic, the format of the Oxford-style debate was helpful in maintaining structure, so the viewpoints could be fully heard and considered. The session started and ended with votes on the motion, so we could see which of the speakers persuaded more people in the room.

To make sense of the votes, a little context is important. About half of the attendees this year were publishers, with the second and third largest groups being technologists and librarians at 16% and 15%, respectively. We had a healthy number of researchers at just less than 10%, with some consultants, distributors, and various others rounding out the mix. It's not surprising then, with a strong anti-piracy sentiment among publishers and some librarians, the initial vote came out 60-40 against the resolution. For those of you doing semantic gymnastics in your head right now, that means a moderate majority of people voted that Sci-Hub is a bad thing.

Dr Himmelstein, supporting the resolution, spoke first. If you read up on the #R2Rconf Twitter thread, you'll learn that his defence of Sci-Hub was energetically given and passionate. During the opening statements, however, he was accused of focusing on arguments against the subscription business model and the commercialization of scholarly communication. Himmelstein isn't the first and certainly won't be the last person to conflate arguments against for-profit publishing with arguments for open access (OA). This is a shame because this position ignores the systemic issues that prevent faster transition to OA, and that it has often been non-profit publishers that face greater challenges in adapting to OA while remaining financially sustainable.[1]

In reality, Himmelstein didn't just focus on OA arguments, he also made a very interesting point that Sci-Hub strengthens the hand of libraries and addresses a fundamental power imbalance in the market. He's right that a power imbalance does exist. Libraries cannot practically unsubscribe from core titles and choose a different publication because we're often dealing with primary research here; articles, and therefore journals, are frequently not interchangeable. That is to say, the market can be viewed as a series of micro-monopolies, which creates a lack of price elasticity. As Himmelstein put it, Sci-Hub enables a 'credible threat of cancellation.'

Himmelstein also asserted that digital workflows have reduced the cost of scholarly publishing. While there are quite a few studies that attempt to ascertain the true underlying costs of publishing, most studies underestimate it, as Cameron Neylon points out in his 2015 blog post; the lifecycle costs of infrastructure are generally undercounted.[2] The scholarly communications infrastructure has ever-increasingly complex non-functional requirements (things like content retention, security, and interoperability). To further complicate the picture, incremental costs vary from

journal to journal and are strongly associated with rejection rates[3]; a problem increasingly faced as scholarship becomes more global.

One thing is for certain, scholarly publishing isn't getting any cheaper to deliver. Spence sought to capitalize on this mistake by highlighting that Sci-Hub compounds this fundamental misunderstanding. This line of argument is also problematic because the question isn't whether disseminating information costs more money today than when we printed magazines, shipped them in boxes, and called it a job done, but whether it's right to charge readers for that information, and by extension, exclude those without adequate funds from accessing it.

After a while, the debate moved on from the rather muddy intersection of economics and technology, and the question started to become framed around a moral quandary. That is, whether it's okay to commit a crime, be disruptive, or even destructive in the interests of a greater good; do the ends justify the means? Spence asserted that theft is theft; it's a crime, and it isn't justifiable. That position seems to me to be too absolutist; there are many instances in history when people broke the law and were justified in doing so. On the other hand, Himmelstein asserted that breaking copyright isn't theft because it's not depriving anybody of anything. The redefining of theft as only applying to physical objects seems to be going too far in the other direction. Intellectual property clearly has value in any society that has evolved past the Stone Age.

As Catriona MacCallum (@catmacOA) said during the Q&A, the fundamental question as framed comes down to whether the scholarly publishing market is distorted enough that disruption is warranted and justifiable. I'd personally say that disruption would always be justifiable by legal means, or at least, it's always justifiable to try. If a market is being abused, then people will jump at an alternative, and incumbent players will suffer or go out of business. The key factor being whether the market is actually being abused. In other words, a good test for whether an industry deserves to be disrupted is whether it works when you try.

The question, therefore, becomes: At what point does the use of illegal methods to disrupt an industry become acceptable? That's a judgement call and depends on the magnitude of the harm caused by the disruption.

Even in cases where demonstrably bad actors are disruptive, the eventual outcomes can be positive, even if the actions of disruptors are entirely unacceptable. Take the actions of the original labour unions and groups like the Luddites, that engaged in sabotage and sometimes serious criminal damage but led to the rise of the legitimate labour movement and social reform. Can the same be said for Sci-Hub? Is this disruption to our industry forcing us to face up to asymmetries in the market that will make us evolve our products and business models to better serve the market and be more sustainable? Will disruption create openings for new and innovative ideas? Will the exposure of security flaws lead to a hardening of our systems that will make us more secure in the future? Maybe.

Maybe not.

And here's the rub. We don't know how much harm Sci-Hub is doing and so have no idea whether the ends will eventually justify the means. We don't know how they're funded, although it's fairly obvious that the donation button on the site isn't raising the sort of money an operation like Sci-Hub would need. Given the political situation in Russia, it's likely, although not directly provable, that there is some level of political involvement. Russian authorities' information warfare capabilities are well-documented,[4] and it would be naive to think that the organizations that sought to sway the outcome of the 2016 general election[5] are not interested in login credentials for Western academic institutions that include hospitals, nuclear research labs, and other sensitive installations.

Apart from official sponsorship, there is plenty of evidence that Sci-Hub uses hacking, phishing, and other nefarious approaches to gain access to university systems. In of itself, that's pretty bad, even if Sci-Hub claims not to be using access to university systems for reasons other than downloading articles. The real problem is that Sci-Hub is making login credentials available to others, as evidenced by Andrew Pitts' investigation.[6] Logically, they're likely to be selling those credentials, and based on the evidence Pitts gathered, it's likely to be criminal gangs who would use those credentials for anything from blackmail to espionage.[7]

When it came time for the final vote, the motion didn't carry, but Himmelstein persuaded a few people, with the split shifting to 55-45 against. Himmelstein, therefore, was declared the winner.

So, is Sci-Hub doing more good than harm? Well, we don't know. There is some good coming from it. It's shaking up the scholarly supply chain and causing the scholarly communications infrastructure to harden its security. Fundamentally, it's creating a test to see if the market is actually being abused to the point where faster, more radical change is needed. As for the harm, we don't have full knowledge, but we do know a bit about how serious the risks are. In my opinion, that's a more disturbing situation to be in.

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