

# A ROBIN HOOD IN THE WORLD OF SCIENCE: ALEXANDRA ELBAKYAN

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## WHO IS ALEXANDRA ELBAKYAN?

Alexandra Elbakyan was born in 1988 in Almaty, Kazakhstan. As a child, she was interested in natural sciences and computer programming. During the secondary and high school years, she learned various programming languages. She was 16 years old when she developed a software that could be considered as a prototype of Sci-Hub and started downloading the neuroscience books for free. Unlike many of her friends who target universities in Russia, she decided to continue her education in Kazakhstan and was accepted with a high score to the Kazakhstan National University, Institute of Information Technologies. She was interested in brain-computer interfaces here, and she chose this topic as her final project. However, she realized that most of the academic papers demand high fees and that free access to scientific publications is substantially limited. With the experience she gained, she developed the Sci-Hub when she was 23 old. Thus, she has enabled many researchers around the world to download the academic papers for free. She preferred to continue her research on open data and study the historical background of the problem. In 2019, she earned a master's degree in Linguistics at the Saint-Petersburg State University.



Alexandra Elbakyan

**First of all, as scientists, we would like to express our gratitude for providing us Sci-Hub, as an infrastructure. For many scientists, especially in low-income countries like Turkey, access to scientific knowledge is very limited. Concordantly, Sci-Hub rapidly changed our practices of reaching scientific knowledge. Is there any remarkable difference in regard to accessing Sci-Hub depending on the income of the countries?**

I don't know, because I did not do an investigation to check if there is any correlation with income. The only noticeable correlation is population number. Highly populated countries such as India and China are also the top in Sci-Hub statistics. But Sci-Hub is also very popular in high-income countries, United States are always in the top 10 or even top 5 by number of requests. There is a widespread MYTH that Sci-Hub matters only in those countries that cannot pay for subscriptions.

That is not true, in fact the reverse is true, there is often higher interest in high-income countries in Sci-Hub than in low-income. Why? Because low-income countries simply do not have science at all! Hence Sci-Hub is of no interest to them.

The high prices for scientific journals should not be paid because are not justified, they are simply the result of broken system, that allows publishers to extract money by restricting access to knowledge. Academic publishers currently rob the society both for money and for knowledge. And scientists started to talk about this trouble in United States back in 1990s. They were the first country to encounter that problem. Open Access to knowledge matters in all countries. There is a big mistake to think that it belongs to 'poor' countries only.

**Discussions on open-access science in the world predates Sci-Hub. However, the transformational potential of those discussions was limited. It was lack**

**of power that could stop publishing monopolies. Sci-Hub, through its intervention to the field, forced the monopolies to find a solution. They had two choices: either stopping Sci-Hub or trying to make a profit from the ecosystem created by it. They could not accomplish the first. Nowadays, they are trying the latter one establishing “high quality” open-access journals. What do you think of the paradigm changes created by Sci-Hub on the processes of academic publishing?**

Of course, if Sci-Hub is running then publishers can no longer run their business based on restriction access to knowledge, they must switch to another models of operation, such as expensive Open Access journals that you mentioned.

**Recently, we witnessed some journals, namely Nature and Cell, increased open-access fees. To justify it, they claim that open-access fees are paid by funding agencies, not by scientists, which is not true for many countries. How should we deal with such misuse of public funds?**

Do not publish in Nature and Cell! The situation when everyone wants to publish in three top journals is not healthy. Some prominent scientists have talked about it and urged researchers to stop being mad about publishing in Nature, Science and Cell only. There are alternatives. For example, a Nobel Prize laureate Randy Schekman published his opinion:

How journals like Nature, Cell and Science are damaging science.

<https://www.theguardian.com/commentisfree/2013/dec/09/how-journals-nature-science-cell-damage-science>

Yes, it can feel hard to take off dependence on top journals, but the system needs to change.

**Especially during the pandemic, we experienced how crucial it is to access scientific knowledge easily and rapidly. Many scientific teams studied in collaboration and opened their knowledge to the world. Even the publishers had to remove paywall for those certain articles about coronavirus. This also shows us how essential is the role played by Sci-Hub in scientific production. How did the pandemic affect access to Sci-Hub?**

During the lockdown time, the number of unique visitors to Sci-Hub increased about 100,000, it was 500,000 before but became 600,000. Universities were closed and researchers worked from home. Even when your university provides some subscriptions, it is very hard and cumbersome to use it from home, while using Sci-Hub to access a paper is fast and easy, as many scientists' report.

The articles about coronavirus were read 10-100 times more than article on other topics in medical journals, as I have calculated.

**Academic publishers claim that you act in bad faith with the data you obtain through identity theft. How would you respond to that claim? Have the passwords that you got ever been used maliciously?**

Universities give their researchers and students passwords that they can use to access the university library remotely. Sci-Hub uses many such passwords to automatically download research journals and store to its database. Such passwords are shared on the Internet on various online forums, both free and paid. Yes - these accounts are illegal, but personally I think that access to research journals is the most precious thing you can extract from such passwords, they are generally useless for other purposes. You can use such password to login to the university library and sometimes to view student schedule and marks. I do not see any real danger here.

Of course, publishers are trying to use this argument against Sci-Hub, but so far, they have not provided any real case when there was any damage done.

**There are many people with the technical capability to create Sci-Hub. Would you comment on the conditions that contributed to the fact that it was you, but not someone else from Western countries, that took this courageous and historic step. We observe open-access movements more frequently in former Soviet countries. Do you think it is reasonable to consider Sci-Hub, or more generally formations like Libgen, as a legacy of Soviets which produced science for people?**

There are also many people with the technical capability to create Facebook, but it was created only by Zuckerberg. I personally think I could create Facebook, but I would never want to do such project: it doesn't fit my personality. Like many other things, programming is creative and personal, not technical only. There are many good programmers in the world who work in banking, in finances, in shopping and etc. because they find these areas more interesting, and perhaps more profitable, than some pirate science library. Regarding technical skill, from childhood I've been always kinda of 'computer genius'. At the age 14, I could easily do more advanced things than guys who were older than me, most people that I met in university have been much worse than me in programming skill. So, I've been one of the top programmers, but still I found creating Sci-Hub challenging. Of course, on the planet Earth, there are many people who have the same and higher skill, but they are not 'very very many' and they are already employed in other areas: programmers are paid good in many companies such as Amazon, Google and others.

Of course, it does matter also that former USSR has much less strict copyright law implementation than for example United States, where such project as Sci-Hub would never been possible. It also does matter that in the USSR there was kind of Science and knowledge cult and remnants of this cult remained after Soviet fall. USSR was one of the top countries in Science, in best times Russian language even competed with English in science. There are not many other languages who did it. At the moment of Sci-Hub creation, communism ideology has not yet fallen completely, and communism is very conducive to the idea of sharing and free stuff. It does matter also that Sci-Hub is a tool to get access to Western journals while being located in former USSR itself. Why would we bother about Western companies' copyright? and so on.

So, it was a combination of factors that led to emergence of such projects as Sci-Hub and LibGen in the former USSR.

**How do you define your political position? How would you relate your political affinity with the philosophy behind Sci-Hub?**

I personally love the idea of Communism, although I have a more general view of Communism not restricted to Marxism only. Sci-Hub is communist project. The first version of Sci-Hub had an 'easter egg,' there was a small hammer and sickle picture, and if you hovered a mouse over it, then a text would pop up that said:

The communist society ... is based upon common ownership of the means of production with \* free access to articles \* of consumption

That old version of the website with this hint is saved in Web Archive:

<http://web.archive.org/web/20130317005840/http://sci-hub.org/>

The communist ideology always emphasized society built on the basis of science, most Science and Research Institutes we have now were built in USSR time.

Communists implemented mass education projects: everyone should study, not only the rich ones. In the past, science and education were often a privilege of the rich, while ordinary people did not have such a chance, they had to work starting from childhood. When communists came to power after the Revolution, it all ended, now everyone had the equal right to education. That resonates very much with what Sci-Hub is doing: offering knowledge to everyone, not only the rich ones who can pay expensive subscriptions.

Today, science became a private property of large corporations such as Elsevier. Sci-Hub's goal is to bring

science back to people, because science is common and belongs to everyone.

Yet another argument comes from what science is. Science in its essence is a codified rational knowledge, that can be expressed by word. Words are the means of communication. Hence communication is inherent to science, and the goal of communication is to make something common - not private. Science and private property are contradictory things.

**What about your background? I guess you do not remember Soviet Era. How was the political condition you grew up in? Actually, this question is about the environment that prepared you for today.**

The USSR had fallen in 1991 but communist ideology remained everywhere and was very strong. Today in 2021 it is much weaker, but it took 30 years. Personally, for me the word 'communism' has always meaning of 'Good' in philosophical sense (as in Plotinus).

That is one thing, another is the Internet. When the Web was created, many people shared music, videos, books and other things, but then it was termed to be illegal and such free sharing on the Internet started to be prosecuted because of 'copyright laws'. Many people voiced their opinions against that, against copyright and for the Internet freedom. That was the atmosphere where my views developed.

**Do you have family stories concerning the October Revolution?**

No. The Revolution was quite a long time ago, for example my grandma told me that her father was 5 or 6 years old when it happened. A mortally wounded White Army officer ran into the house, where he was staying with other kids. That was quite frightening and they hid behind the stove. His two elder brothers took part in Civil War and bragged about having known Chapaev or even dancing with him (although that is likely to be a legend). After the Revolution, they returned to Ukraine to Kiev, while her father remained in Russia.

**Are you currently affiliated with any political organization in your country?**

Nope. I wanted to join Communist Party or Pirate Party<sup>1</sup> in Russia a few years ago, but I'm unable to do this without citizenship.

**Could you please provide us statistics of access from Turkey?**

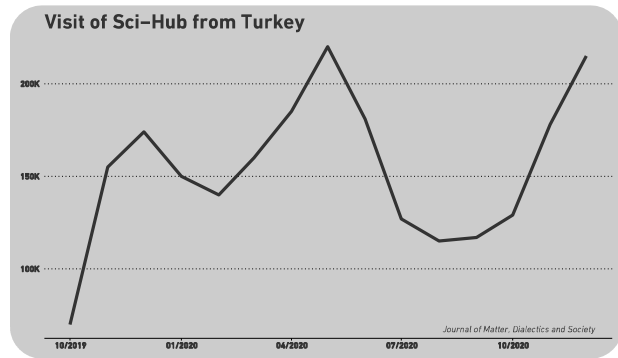
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<sup>1</sup> A political party founded to be the voice of those who adopt a policy of openness around issues of copyright and patents and are allergic to monetization of the field by companies. Following the first parties founded in 2006 in Sweden, USA and Austria, it spread to many countries. Supports a policy of transparency in matters of state and legislation as well. It is usually under the influence of liberal policies.

Most visitors came from Istanbul region - 1,28 million and Ankara region - 816,500 unique visitors total since

2011. See the graph for the number of unique visitors from Turkey by month. How much is that?

In 2017 Turkey had 1,380 researchers for each million people.<sup>[2]</sup> We can approximate that today this number is about 1,500 per million, and there are roughly 82 million people live in Turkey now, so  $1500 \times 82$  is 123,000 researchers in 2020, which would mean that more than 100% scientists in Turkey use Sci-Hub! Not only researchers use Sci-Hub, but also doctors and their patients to learn about diseases, curious people, school pupils, journalists, and others. So, the actual percentage will be somewhat less, but still, those are good numbers.



Number of visitors of Sci-Hub from Turkey.

**What happens in India about Sci-Hub? We are aware of ongoing trials and scientists resist against the trials. What is the current situation there? A potential positive decision could be precedent for other countries.**

Usually, I'm not aware of being sued in any country, for example I learned about Sci-Hub being sued in France from news after the website had been blocked. It's the same in other countries. This time I received documents to my email about upcoming hearing in Delhi High Court on December 21 - just 3 days before the hearing. Publishers asked for all-address Sci-Hub ban and if new address appears, it would also be immediately banned. I posted this bad news on Twitter, and it caused a big reaction from Indian researchers, many expressed their concerns in Twitter, some urged the government not to block Sci-Hub and etc. and I also was contacted by lawyers who offered to represent me in court. So, they appeared in court on December 24 and Sci-Hub was not banned but instead the hearing was postponed to later date in February, so we can provide documents required by the court. There is a big hope the decision will be in favor of Sci-Hub! India court had a case against

photocopier shop used by students a few years ago, and it was decided in favor of them.

**Sci-Hub Twitter account was suspended recently. Did they communicate with you? What is the official reason for this? And why now but not before? You have had this account for a long time.**

Yes, it came out of the blue. The official reason was that Sci-Hub account is breaking some Twitter policies, in particular 'counterfeit goods' policy. That's it, they provided no further details, but pointed out that decision is final and cannot be appealed. The block happened right after many Indian scientists protested against academic publishers on Twitter. So, the first reason can be that academic publishers noticed the Sci-Hub Twitter account as a danger, and asked Twitter to block it. Sci-Hub account in Twitter was more popular than accounts of Nature and other publishers.

Another reason could be political. On January, 6 protests happened in United States and after that Twitter blocked many accounts including account of Donald Trump himself. And Sci-Hub Twitter account was blocked around the same time! As far as you know, I'm suspected to be a Russian spy by US authorities and Sci-Hub Twitter had a big poster with Lenin pinned on its page. So that could be a request from US authorities. But we do not know the exact reason.

**What can we do for Sci-Hub apart from donations?**

Spread the word! Not many people know about the current big trouble in science and information access in general. Let's keep in touch, so I will let you know if I need some specific help.

2 <https://knoema.ru/atlas/%d0%a2%d1%83%d1%80%d1%86%d0%b8-%d1%8f/%d0%98%d1%81%d1%81%d0%bb%d0%b5%d0%b4%d0%be-%d0%b2%d0%b0%d1%82%d0%b5%d0%bb%d0%b8-%d0%b2-%d0%9d-%d0%98%d0%9e%d0%9a%d0%a0>