24 Open Sesame!

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"Open Sesame!" yelled Ali Baba. He then made his way meticulously into the secret cave and took a bag of gold coins home to his family. This is a snippet from the legendary tale of Ali Baba and the forty thieves which was narrated by Antoine Galland in the 18th century. Imagine the amount of "gold" the world we would be able to reap if research were made open and free!

During the First Annual Address to Congress in 8 January 1790, former President of the United States George Washington mentioned, "There is nothing which can better deserve your patronage, than the promotion of science and literature. Knowledge is in every country the surest basis of public happiness". This was a resonating quote from the great George Washington on the importance of science and technology and he has since established a quote that endured centuries.

I am a postdoctoral research scientist working on ecotoxicological risk assessments of ionic liquids in Malaysia. My day-to-day life includes a lot of reading and analysing manuscripts to keep myself abreast with the current knowledge and trends in my field. I greatly rely on open research so that I can access these scientific platforms from anywhere I am. Open access databases have been my best friend even when I am away from my institution. The freedom it gives me to be able to access literature from wherever I am located has certainly been a high! It can only be my hope that one day all research materials are made free and accessible to the public wherever they may be. These are my views on the global benefits of open research.

The idea of open research is to provide a platform designed to make scientific processes and results transparent while making it accessible to people outside the research niche. This includes making research materials and data freely available online to the public. However, debates surrounding open research have garnered much attention from many viewpoints and some say that these views are multifaceted. There is a definite lack of consensus regarding open research. I, as a scientist, firmly believe that openly disseminating knowledge in science will reap benefits. The benefactors include students, researchers, industries, developing countries, entrepreneurs and publishers.

Firstly, open research will increase greater public engagement in science. By making it accessible, scientific information is available to those who cannot access subscription content. This also includes new and young universities which may not have the access to funds or revenue to pay for subscription fees. Due to

the confounding price of journal subscriptions, even most well-funded institutions cannot provide their students with the complete scholarly record of all publication houses. Sadly, students at smaller colleges and universities must make do with their limited access to this scholarly information. Ironically, once their tenure at an institution is over, so is the access to these portals.

Without access to the latest data, the research and development industries cannot harness the latest scientific information that could potentially drive new areas of the economy. This would be particularly in industries who rely on up-to-date information to yoke new products and technology. On another note, science should be open for the whole society, so it may promote awareness among citizens. Access to journals is a major barrier for people in developing countries. With proper access to the latest ground-breaking research, citizens—especially in developing countries—may increase their general knowledge. This may also give rise to societies with a greater sense of intellect, which could in turn help to build trust and support for the generation of public policies and investments.

Open access articles are viewed and cited more often than paid articles, without a doubt. This, in turn, leads to an increased citation of that manuscript. Authors can be much more visible, and their area of study made to be more prominent. More discovery leads to more citations and mentions, and this leads to higher academic reputation and higher chances of potential funding and collaborators. New findings and ideas can be disseminated quickly, which serves as an impetus for knowledge.

Greater access to scientific inputs and outputs can improve the effectiveness and productivity of the research system. This may reduce duplication of data or "fake science". When a manuscript is published, the author is then aware that the manuscript is available freely for the entire world to see, which would create an awareness that they need to provide data as accurately as possible and without falsification. This will also inevitably reduce the hacking of manuscripts online through free hacking software.

Science has indeed sparked monumental advances in today's world. Without a doubt, fundamental and advanced research will be a pioneer to sustain the upcoming generations. Open science is inevitably worldwide, and we must take advantage of it. It can encourage collaborative efforts and is an incentive for knowledge transfer for a better understanding of challenges that require global actions, such as the issue of climate change. However, open research remains one of the numerous trials that the scholarly publishing system is facing.

There are always two sides to a coin. I choose to see open research as a beneficial win–win situation. What do you say?