

## 14 A Free Piece of Cake

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Being a final year PhD student in the UK is not easy. Challenges in modern research seem to be insuperable not only in the UK but in most of the Western world. My institute gave me access to countless journals and articles paying quite a considerable amount of fees to let me have this privilege. Yet, this is not enough. I always need that one article which is not there. I have to place an interlibrary loan, or an online article request on the system. The article usually arrives after one week, too late for all my literature research. Sometimes even later than that, I receive the temporary access to a PDF version for just few hours and cannot fully explore its content. I found this process quite frustrating, but this is not because my institute library is not efficient—librarians are helpful and accommodating—but it is often impossible to read a single line of a desired article without paying a large fee and have trouble to ask for a temporary access to this.

I must admit being guilty of using the help from colleagues in other universities to quickly obtain a research paper that is essential for me to read through immediately. I have most certainly found benefit from articles that were shared on platforms such as bioRxiv (pre-print platform for biologists) and Researchgate (social network for scientists). The latter is gaining momentum among scientists all over the world that can share and communicate their latest results, asking for suggestions and protocols useful with their research. Social media for researchers are becoming essential in my studies. Community platforms where I can search and download published articles uploaded by the publishing researchers is starting to be crucial in my everyday “latest article” search routine. Twitter is recently becoming much appreciated. Scientists can post their articles on social networks like this (certainly worth mentioning LinkedIn and sometimes Facebook) and tweet about their findings, increasing visibility and knowledge that is often translated in consequent citations. For this, Twitter is a fantastic tool for researchers. I am looking at Twitter every day to increase my knowledge of the latest article published in my field and tweeting about my research. Social media are useful because every day more senior researchers are signing up and sharing their latest interests in papers and funding available. Looking at this, I am personally inspired and tend to look at what they publish and investigate these funding opportunities that might be of my interest. Twitter’s wide-open door on research communities is a tremendous chance for global

researchers to interact and connect building up a real source of information for science and research.

These thoughts drive me back to a couple of years ago when I have been visiting a German research institute for some time of collaborative work with a group of similar research interests. There, I have experienced a new freedom: They were subscribed to journals which I did not have access to back in the UK. At the same time, German researchers were experiencing my identical issue, as they could not access journals that I could read in the UK instead. During that time a true shared knowledge was possible only thanks to the fact that I was there. This was liberating. I could research articles which I was looking for for months and never got to read, explore journals that published interesting research for my area of interest. This was simply amazing. Indeed, we manage to outsource and share reciprocal benefits of the use of different research journal platforms. From this, a new idea came out and we started working on something new, never seen before, a new biomaterial of orthopaedic use that could be mixed with stem cells, printed in three dimensions and then implanted into patients affected by moderate or severe bone loss. We managed to further investigate this new material and get out with a simple, yet efficient and innovative technique.

I believe that my personal experience that I listed here is the perfect summary of what “open research” means, as something available to everyone to benefit from and that can further advance the scientific knowledge.

Open access research is not a recent achievement, but lately it has become an essential aim for many journals. As an urgent need, numerous scientists are starting to publish papers via this open system. Being open and free has drastically increased articles visibility. Particularly on Twitter, researchers are posting free of prejudice their latest open access papers for people to download and further retweet and share. This is particularly useful not only for scientists who crave for the latest news on their research field but also for lay people who dare to sneak-peek the scientific innovations before being released by the press. An open article is more than just a scientific report but can be a free “piece of cake” for everyone to enjoy, a research work that is available and freely shared with other peers looking forward to doing research for the mere reason of further advancing world knowledge. Research groups are always more often close with secret protocols that cannot be replicated. However, research that cannot be repeated somewhere else using same resources and protocols is not true research. What is the purpose of this if someone on the other side of the globe cannot use the protocol listed (or partially listed) on your research paper to reproduce what you have created or discovered and maybe save a life? Openness should bring

people to collaborate and share, to get more interested in each other's work, free of boundaries of outsourcing new possibilities and unexplored approaches to science. This should bring collaborations, a free exchange of ideas and ways of investigating science that can only be beneficial for the whole scientific community. Only with clear and transparent research methods that can, as a result, show open outcomes, we can further improve our understanding of the reality and gain boundless benefit for humankind.



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