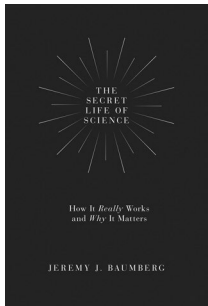


The jungle book



The Secret Life of Science: How It Really Works and Why It Matters

Jeremy J. Baumberg

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Jeremy Baumberg once asked me, “What would you like for us scientists to do differently?” I often think back to that moment and all the answers I, as an editor, wish I had given. This is a difficult question, mirroring the silent consensus among those working in research that the scientific enterprise is approaching a breaking point. Baumberg’s take on his own question, provided from the vantage point of a scientist, professor of nanoscience and head of the nanophotonics group at the Cavendish Laboratory in Cambridge, is discussed in his new book, *The Secret Life of Science*.

The professional world of science is a strange beast, without a doubt. Anyone who has attempted to explain peculiarities like strings of short-term post-doc contracts or professional yet unpaid peer review to outsiders has probably seen some puzzled faces. At the same time, and possibly because of the tremendous impact of science on everyday life, the role and responsibility of scientists tends to be misinterpreted or even abused — mostly by those not involved in science.

Baumberg knows this all very well. With *The Secret Life of Science* he sets to familiarize these outsiders with the inner workings of science, while taking an opportunity to reflect on its future. His approach is nothing less than scientific: take a step back, give a holistic presentation of the competing aspects, identify shortcomings and suggest remedies.

So, what is science? The book casts it as a fairly isolated but very lively ecosystem fed by funding agencies and made up of researchers at various levels scattered across universities and industry, editors and journalists. Each of these parties fights internally: journals compete for attracting the best papers, journalists sprint to get to the best cover stories first and researchers yearn after permanent positions and

grants. But there are plenty of bitter feelings between parties as well. However, all these co-dependent groups are heavily intertwined to form a web that starts with public money and ends with the public enjoying technological developments or reading about exciting discoveries and getting inspired to enter the ecosystem.

The book is clearly written with those that are not part of this ecosystem in mind. Its chapters exhaustively describe the people involved in the science world, their aims and motives, but most importantly the reality they have to deal with. Baumberg assumes an objective and critical position of all aspects of the life of a scientist, but the underlying tone is that the science bubble is close to bursting.

Indeed, many elements are at odds. Governments have identified research as a solid investment and are pouring more money than ever into it, but are also demanding quick results in return. How is this compatible with the unpredictability that governs the path of discovery? Although no one really directs science, Baumberg identifies a connection between the stories that resonate in the media and an endless appetite for ‘cool science’ with the research direction a scientist chooses to follow. Publishing output is sadly but appropriately branded as the ‘bitcoin’ of science.

The narrative of the book is fairly dry: I was expecting a few more personal stories, of which I am sure Baumberg has plenty. Major events that shook up the ecosystem and redefined many of its functions, like the Wakefield or Schön scandals, were mentioned only in passing or not at all. Nevertheless, I found Baumberg’s honesty refreshing: he doesn’t hesitate to disclose that research is more political than ever, that the peer-review system (for papers or grants) is both a blessing and a curse, and that diversity in terms of funding schemes or university roles is in decline.

I particularly enjoyed the chapter about conferences — which I suspect might not really resonate with the outsiders — and their failing purpose. Baumberg’s bitter realization is that they exist solely because funders provide money for travelling, and that scientists travel to the other side of the world to impress their peers but without staying long enough to actually discuss science with them.

Baumberg feels that the demise of science will promptly come from the ever-increasing competition for funding, which essentially promotes ‘bandwagon science’ and the more

aggressive researchers. The book concludes with a few ideas on how to restore the beauty of science — the most interesting part for me.

Some of these suggestions are no strangers to insiders, like increasing the ties between industry and academia, or the need to replace the *h*-index with more meaningful metrics (although no solid alternatives are put forth). Redefining the role of conferences and limiting their attendance naturally follow the arguments made in earlier chapters. Managing the incredible amount of information that is floating around with AI or establishing ‘science curators’ are also interesting suggestions. But Baumberg’s bottom line is that there are just too many researchers. In order to maximize their impact in society by decreasing their competition and the time lost in writing unsuccessful proposals, one would simply need to restrict their number.

Coming from a professor, who can undoubtedly appreciate the value of PhD students and post-docs for the system, this assertion was shocking and eye-opening at the same time. Strictly speaking, it would solve the problem of having insufficient funds for everybody, as well as the difficulty in absorbing PhD graduates. Baumberg thinks it would also leave space for distinct approaches towards research to emerge again. But is limiting the number of students compatible with the more romantic idea of science being open to all? Probably not, and in some sense it is ironic that in order to save science from its ever-increasing corporate nature, we have to resort to such business-like tactics.

While like almost anyone working within the ecosystem I am familiar with the reality the book exposes, I enjoyed *The Secret Life of Science*. The book strikes a nice balance between exposing the gears behind the science machine for those unrelated to it, and pushing those caught up in the gears to let go for a moment and look at the bigger picture. Besides making an attempt to educate the public, Baumberg also issues a call to arms to his fellows. Their response remains to be seen. But, in the meantime, I advise all new PhD students to read this book before willingly stepping into the jungle. □

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