

SCIENCE AND MONEY

CIENCIA Y DINERO

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As with any human endeavour, science has always had a complex relationship with money and power. It is no secret that research costs money and that good funding makes it possible to do research properly. However, larger grants do not necessarily make for better science.

People use science to make technology, but technology often becomes its wayward daughter and goes rogue, running circles around science and defying its methods, principles, and ethics. Technology happens to make money much faster and in larger quantities than the science behind it could dream of. Many scientific endeavours depend on specific, costly technology. However, must science bow to technology's orders?

Things get even more complicated when it comes to the value or quality of science. The price of this complex relationship between science and money is that science sacrifices its commitment to truth. At some points and places, this compromise is subtle and indirect; at others, it is blatantly obvious. Evidence-based science also seems to be a great idea, but its filters and selections are not immune to culture and we soon find that "evidence" is synonymous with large samples and generous funding.

The scheme is like the slice of psychological science that research and publishing represent. Money is necessary, and we are still trying to work out whether it is a necessary evil. For a while, the influence of money on research and publishing was subtle and indirect. Better funded projects could afford, for example, larger samples, and tended to produce more statistically significant results and, therefore, get published faster and in more prestigious journals. There was an unwritten rule we all knew. Third-world, non-English speaking, and poorer researchers had to settle for smaller projects which, based on not-so-hard data, yielded not-so-significant results that had to be content with being published in less prestigious. In theory, we all could contribute to scientific truth, but in practice, most of us could not afford to.

Then there were trends such as one method being better than another to arrive at the truth, one journal being better than another and a certain type of researcher being better than others. At the top were double-masked, randomised control trials at the top of the list, which are the only way to find and publish the truth for some. Everything was set for a run of money-driven publishing. Those in 'better' journals got more readers and, therefore, more citations and more points and, you guessed, more money.

Open access science seemed to have come to the rescue: the chance for many more people to reach a broader and not so rich audience and access to more science without paying for it, but has fallen short of its promise. Open access was a good idea, but like its predecessors, it soon got caught up in the financial maelstrom.

But now, whoever has more money gets read. We have finally reached the pay-per-view version of science. You have to pay a ransom if you want your article to get out there. An article gets read and cited, not because its content is more valuable or because its methods are more rigorous, but because the author and its institution had the money to cover the publishing fee. The way this skews science and published materials is a blow from which science and its commitment to truth may take years to recover.

But none of this is a secret. We have known this for as long as we have been in contact with science. Could we, individual scientists, break free from the grasp of money? Can we remember the mechanics of publishing and citing and recall that the most cited article is not necessarily the one closest to the truth? Can we, as peer

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reviewers, really avoid being dazzled by the funding behind a researcher and pay attention to the method and applicability of findings? Is there any hope for science?