Correspondence

Mega mine threatens Amazon's rainforests

Citizens of French Guiana in the Amazon rainforest are debating whether the territory should host a huge gold-mining project. A decision from Paris is expected imminently. France's President Emmanuel Macron has declared that such projects will be allowed only if they are exemplary in terms of their environmental and economic ramifications. In our view, this project fails on both counts as currently proposed.

The Russian–Canadian Montagne d'Or mining company plans to extract about 20 kilograms of gold while discarding 80,000 tonnes of matrix every day. Situated between two protected biological reserves, the proposed 800-hectare mining site hosts some 1,558 plant and 546 vertebrate species. The area is also rich in archaeological sites, including 15 sanctuaries built by ancient American Indians.

According to the World Wildlife Fund, the consortium would earn more than €3 billion (US$3.5 billion) over 12 years, of which only 2% would go to French Guiana. The taxes generated by the project would be outpaced by public subsidies, in exchange for just 750 local jobs.

At a time when France is about to officially recognize the importance of preserving biodiversity in its Constitution, it would indeed be paradoxical to authorize this mega-mining project.

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Apply data science to benefit society

The translational aspects of data science — the analysis of big data — promise to benefit individuals, science and society. They stand to open up new lines of enquiry in computer science, statistics, ethics, data governance, cognitive psychology, organizational behaviour, information science, sociology and behavioural economics. With an overflowing treasure chest of big data, the time is ripe to tackle the crucial questions that can help translational data science to realize its potential (see, for example, go.nature.com/2nz2qzw and go.nature.com/2kjxa67).

Because it bridges the gap between foundational methods and practical application, translational data science stands to further the study of data-science methods (see D. Donoho *J. Comp. Graph. Stats* **26**, 745–766; 2017). It should also democratize the data-science process and provide knowledge that can inform practical discourse among stakeholders (see also M. Zook *et al. PLoS Comput. Biol.* **13**, e1005399; 2017).

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Authorship: update to contributorship

The identification of thousands of authors who publish more than 72 papers a year challenges the concept of authorship (J. P. A. Ioannidis *et al. Nature* **561**, 167–169; 2018). Although two of us (G.D.S. and M.K.) fall into this hyperprolific category, we agree.

We suggest that moving from an authorship to a contributorship model (M. Munafò and G. Davey Smith *Nature* **553**, 399–401; 2018) would better reflect the many and varied contributions to large, complex, long-term and management-intensive projects in modern science. Like the credits that roll at the end of a film, the role of each of the many people who contributed would then be recognized (M. K. McNutt *et al. Proc. Natl Acad. Sci. USA* http://doi.org/gc8dnb; 2018). Authors can act as equivalents of film director, script supervisor, second assistant camera, casting director, lead, extra, production accountant or gaffer. As contributors to a research manuscript, they might be credited as, say, data generators, hypothesis constructors, analysts, literature reviewers or evidence-synthesizers.

Today's large teams of physicists and biomedical consortia famously produce high-quality results. The collaborative and multi-disciplinary nature of these huge groups means that their authorship lists are very long. In our view, outdated authorship conventions for such team efforts should be consigned to the past: team science and contributorship are the future.

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Authorship: count best, not most

Jobs, promotions and grants are awarded largely on the basis of research productivity. As long as that productivity is defined by quantity (see, for example, J. P. A. Ioannidis *et al. Nature* **561**, 167–169; 2018) rather than quality, the scientific literature is at heightened risk of contamination by inconsequential or even fake results.

There is another way. When scientists are nominated to the US National Academy of Science, or for prizes such as those awarded by the Lasker or Shaw foundations, they are typically asked to summarize their achievements in fewer than 1,000 words and to append a list of up to just 10 supporting publications. In my view, assessments of researchers' performance that similarly focus on their most relevant work and its importance would be more meaningful than simply counting a profusion of thinly sliced papers.

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Boring speakers talk for longer

Dull talks at conferences can feel interminable. Or could it be that they really do go on for longer?

I investigated this idea at a meeting where speakers were given 12-minute slots. I sat in on 50 talks for which I recorded the start and end time. I decided whether the talk was boring after 4 minutes, long before it became apparent whether the speaker would run overtime. The 34 interesting talks lasted, on average, a punctual 11 minutes and 42 seconds. The 16 boring ones dragged on for 13 minutes and 12 seconds (thereby wasting a statistically significant 1.5 min; t-test, $t = 2.91$, $P = 0.007$). For every 70 seconds that a speaker droned on, the odds that their talk had been boring doubled. For the audience, this is exciting news. Boring talks that seem interminable actually do go on for longer.

To avoid banality, speakers should introduce their objectives early on and focus on pertinent information. They should avoid trite explanations, repetition, getting bogged down by irrelevant minutiae and passing off common knowledge as fresh insight.

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