

The Seer of Science Publishing

Vitek Tracz was ahead of the pack on open access. Now he wants to rewrite the rules of peer review

LONDON—“Nobody reads journals,” says science publisher Vitek Tracz, who has made a fortune from journals. “People read papers.” Tracz sees a grim future for what has been the mainstay of scientific communication, the peer-reviewed print journal. Within the next 10 years, he says, it will cease to exist.

This prophecy ought to carry weight. Over the past 3 decades, Tracz, chairman of a conglomerate called the Science Navigation Group, has helped transform the world of science publishing. His most notable creation to date may be BioMed Central, the first for-

Tracz “always has many irons in the fire; he likes to experiment. That’s unlike the rest of science publishers who are quite conservative and work on standardizing, consolidating, and reducing costs,” says Matthew Cockerill, managing director of BioMed Central, which Tracz sold in 2008. By contrast, he says, “Vitek doesn’t believe in business plans, but in ideas.”

Now, the revolutionary, who calls himself “shy” and “un-neat,” is stirring up what could become one of the biggest controversies yet in scientific publishing. Tracz is setting out to shake the very foundations of contemporary science by abolishing anonymous peer review.



Michelin Guide of science

Tracz was born in 1940 in a Polish village then occupied by the Soviet Union, and soon afterward his family joined relatives in Siberia, where his father worked in a mine. After the war they made it back to Poland, where Tracz, as an undergraduate at the University of Warsaw, tried his hand at architecture for a year and then switched to mathematics. Before he completed his degree, Tracz’s family emigrated to Israel, where he continued his math studies. A year later, he moved to London and studied cinematography at the Slade School of Art. He put down roots and launched Medi-Cine, a company that made educational films for medical doctors. His enthusiasm for filmmaking soon waned, however. Tracz sold Medi-Cine and started up Gower Medical Publishing, which printed full-color medical atlases (at a time when most textbooks were in black and white) and assembled slide collections for lecturers.

Tracz grew bored of textbooks, too. In the early 1980s, he saw an opportunity to create something truly novel. That was the *Current Opinion* journals, publications that offer comprehensive reviews in biology and medicine. Tracz likens them to “Michelin Guides”: “There is a problem with the quantity of literature, just like with the quantity of restaurants available out there. You need some [expert] advice and selection, especially when you’re outside your territory,” he says. He later sold *Current Opinion*’s biology journals to Elsevier, and its clinical journals to Rapid Communications of Oxford, which became part of Thomson.

profit open-access publisher. The pioneering site, founded in 2000 in London, has grown into an empire with more than 250 biology and medicine journals in its stable.

BioMed Central earned Tracz a reputation as a visionary. “He’s one of the most important publishers of the last decade,” says Michael Eisen, a biologist at the University of California, Berkeley, and co-founder of the Public Library of Science (PLOS), a nonprofit open-access publisher that launched its first journal in 2003.

Tracz was quick to grasp how the rise of the Internet in the 1990s could transform scientific communication. In 1996, he launched BioMedNet, an online club for biomedical researchers that included a library of scientific papers and a news service called HMS Beagle, named after the ship that Charles Darwin sailed on to South America. “We had a community of 1 million scientists, biologists, and doctors. It was incredibly popular,” Tracz recalls. Two years later, at the height of BioMedNet’s popularity, Tracz sold the site for an undisclosed sum to publishing giant Elsevier, which closed the site in 2004.

Unleashing a juggernaut

As Tracz formed and spun off companies, the “whirlwind,” as one colleague calls him, understood that scientific publishing, as we knew it before the Web, was doomed. Instead of every library stocking a paper journal, a single freely accessible copy of an article or journal was “enough for the whole world,” Tracz says. “The monopolistic power of the publisher suddenly disappeared. So we started thinking: ‘What does it mean? What can we do?’”

Tracz embraced open-access publishing, a movement that blossomed in the late 1990s among scientists and librarians who were angered by the high cost of journal subscriptions at a time when the Web was in principle lowering production and distribution costs. In that ferment, Tracz launched BioMed Central. “Our task was to demonstrate the [system’s] viability for commercial publishers to take it on and switch their model,” Tracz says. After dismissing advertising as a revenue source, the BioMed Central team hit upon the idea that has driven the growth of open-access publishing ever since: making up for lost subscription income by charging authors—or their funders—a publishing fee.

It was a “shrewd” move, says Derk Haank, CEO of Springer Science+Business Media in Berlin. “Vitek made the very wise decision to harness the energy of a ‘movement’ and build a healthy, sustainable business based on it.” In a sign of Biomed Central’s robust health, Springer bought the venture from Tracz in 2008 for an undisclosed sum.

Tracz not only made a business of open access; he also proselytized on its merits. He served on the board of PubMed Central, the U.S. National Institutes of Health’s (NIH’s) online repository of biology and medicine articles, gaining a platform from which he pushed governments and research funders to mandate and fund open-access publishing.

With the open-access juggernaut gaining momentum, Tracz turned his attention to the “other big problems” in science publishing, starting with what he calls the “impact factor poison.” Impact factor measures the average number of citations for each paper published by a journal, and is used as a measure of a journal’s prestige. Critics like Tracz note that impact factor doesn’t reflect the quality of individual papers and, as such, gives little guidance to scientists—or to those making funding or recruitment decisions.

“The impact factor is both problematic and idiotic,” Tracz says. PubMed’s user research, he says, indicates that scientists search for papers that answer their questions, no matter which journal they are published in.

As an alternative metric, Tracz in 2002 launched Faculty of 1000, a directory of biology articles selected, rated, and commented upon by a handpicked group of 5000 experts. This summer, Tracz’s Science Navigation Group started a similar venture, *F1000Trials*, for clinical research.

Scientists say that they use the site, which has since added medicine articles and changed its name to *F1000Prime*, to discover important papers outside their field of expertise, although the site’s metrics for flagging and scoring articles have not caught on widely. But that may be about to change: In August, PLOS added *F1000Prime* data and scores to its article-level metrics—

the citation data, social media usage, and comments that serve as indicators of quality and impact.

A heretical idea

In another bold strike, Tracz is taking aim at science’s life force: peer review. “Peer review is sick and collapsing under its own weight,” he contends. The biggest problem, he says, is the anonymity granted to reviewers, who are often competing fiercely for priority with authors they are reviewing. “What would be their reason to do it quickly?” Tracz asks. “Why would they not steal” ideas or data?

Anonymous review, Tracz notes, is the primary reason why months pass between submission and publication of findings.

“Delayed publishing is criminal; it’s nonsensical,” he says. “It’s an artifact from an irrational, almost religious belief” in the peer-review system.

As an antidote, the here-tic in January launched a new venture that has dispensed altogether with anonymous peer review: *F1000Research*, an online outlet for immediate scholarly publishing. “As soon as we receive a paper, we

publish it,” after a cursory quality check. Peer review happens *after* publication, and in the light of day. *F1000Research* selects referees, who post their names and affiliations alongside their critiques. Papers become like wikis, with reviewers and authors posting comments and revisions as the need arises.

F1000Research requires authors to submit the full data set underlying a paper—not just selected graphs or analyses. Readers “don’t just want the narrative of what you think you found, but what you actually found,” Tracz says. What authors get in return, he says, is ownership of data from the moment of publication. The price of publishing in a traditional journal now could be steep, Tracz argues, as scientists could lose priority for a discovery. He also sees a role for *F1000Research* in publishing orphan studies: negative findings (see p. 68) and incremental advances that most journals ignore.

“When Vitek told me about it at the beginning, I told him it’s kind of crazy,” says David Lipman, director of the NIH’s National Center for Biotechnology Information, which is home to PubMed Central. But Lipman says that he is starting to come around as *F1000Research* takes shape. “You can see examples on the site of perfectly solid articles,” says Lipman, who now calls it “a very attractive option” for researchers. Critics, however, have questioned the reliability of publishing before peer review. On The Scholarly Kitchen blog, Kent Anderson, a former executive at *The New England Journal of Medicine*, described *F1000Research*’s publishing model as “surreal” and “topsy-turvy.”

Tracz acknowledges that in reshaping peer review, he’s taking on a sacred cow. “There will be some growing pains,” he says. But his maverick ideas tend to become mainstream over time. “At the beginning of open access,” one colleague says, Tracz “was ridiculed by other [publishers].” No one ridicules open access now.

“He’s not radical,” Eisen insists, “just sensible. Sensible doesn’t [usually] happen in scientific publishing.” The coming years will see whether open peer review is sensible—or too radical for most researchers to stomach.

—TANIA RABESANDRATANA

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