

Study: Fraud growing in scientific research papers

SETH BORENSTEIN - AP Science Writer - Associated Press

Fraud in scientific research, while still rare, is growing at a troubling pace, a new study finds.

A review of retractions in medical and biological peer-reviewed journals finds the percentage of studies withdrawn because of fraud or suspected fraud has jumped substantially since the mid-1970s. In 1976, there were fewer than 10 fraud retractions for every 1 million studies published, compared with 96 retractions per million in 2007.

The study authors aren't quite sure why this is happening. But they and outside experts point to pressure to hit it big in science, both for funding and attention, and to what seems to be a subtle increase in deception in overall society that science may simply be mirroring.

Fraud in life sciences research is still minuscule and committed by only a few dozen scientific scofflaws. However, it causes big problems, said Arturo Casadevall, a professor of microbiology at the Albert Einstein College of Medicine in New York. Casadevall is the lead author of the study which looked at the reasons for 2,047 retractions among many millions of studies published in journals and kept in a government database for medically focused research.

Fraud was the No. 1 cause of retractions, accounting for 43 percent of them. When fraud was combined with other areas of misconduct, such as plagiarism, it explained about 2 out of 3 retractions, the study found.

"Very few people are doing it, but when they do it, they are doing it in areas that are very important," Casadevall said. "And when these things come out, society loses faith in science."

Prominent retractions that Casadevall cited for fraud include a notorious British study that wrongly linked childhood vaccines to autism, nine separate studies on highly touted research at Duke University about cancer treatment, and work by a South Korean cloning expert who later was convicted in court of embezzlement and illegally buying human eggs for research.

Casadevall said he was surprised because he didn't set out to study fraud. His plan was to examine the most common avoidable errors that caused retractions. What he found was that 889 of the more than 2,000 retractions were due to fraud or suspected fraud.

While other studies have shown a rise in retractions, no previous study has found

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scientific misconduct as the leading cause, said Nicholas Steneck, director of the research ethics program at the University of Michigan, who wasn't involved in the Casadevall study. That shows a need for better, more honest reporting of retractions by the science journals themselves, he said.

He and others also said the findings suggest there may just be better detection of scientific fraud overall.

Most "scientists out there are well meaning and honest people who are going to be totally appalled by this," Casadevall said.

The study was published online Monday in the Proceedings of the National Academy of Sciences, which had the second most retracted articles for all reasons, behind only the journal Science.

The publication with the most fraud-based retractions was the Journal of Biological Chemistry. PNAS ranked fifth.

Casadevall said that even if society as a whole has become more deceptive, "I used to think that science was on a different plane. But I think science is like everybody else and that we are susceptible to the same pressures."

In science, he said, "there's a disproportionate reward system" so if a researcher is published in certain prominent journals they are more likely to get jobs and funding, so the temptations increase.

"Bigger money makes for bigger reasons for fraud," said New York University bioethicist Arthur Caplan. "More fame, more potential for profit... Some of the cheating and fraud is not too dissimilar to the cheating and fraud we've seen in banking."

Science historian Marcel LaFollette, author of a book about science fraud "Stealing into Print," said researchers can't prove that more people are lying in general in society, but they get the distinct feeling it's happening more. And in 2006 an Associated Press-Ipsos poll found that while most people say they don't approve of lying, 65 percent of those questioned said it is OK to lie in certain situations.

The world has become accustomed to lying and forgives politicians when they do it in relationships, LaFollette said. But it's different when it's a doctor, scientist or an engineer because people can get hurt, she said.

Casadevall and Caplan pointed to the 1998 study in Lancet by Andrew Wakefield temporarily linking childhood vaccines to autism — a study later retracted because it was found to be what another scientific journal called "an elaborate fraud."

"Think about the damage society took when mothers started to question vaccines," Casadevall said. "That's damage and it's still going on."

Reached at home in Texas, Wakefield, who was banned from practicing medicine in

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his native Great Britain and whose claims are contrary to what prevailing established medical research shows about vaccine and autism, said: "There was no fraud and to use this and to use me as a poster child of fraud really compounds that error."

Casadevall said his work is about science trying to clean its own house. And because it's about fraud, he said he did one extra thing with his study: He sent reviewers not just a summary of their work, but all the data, "so they can check on us."

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