

Few authors report financial interests

Any promising discovery—be it a drug, software advance, or novel catalyst—can attract investors willing to help transform that inspiration into a bankable product. Journal readers are often understandably curious, therefore, whether authors exaggerate a claim of research success in hopes of increasing financial gain. This has been prompting publications to develop financial-disclosure guidelines for their authors. However, a new study finds, in more than 70 percent of journals with such policies, not a single author reported such financial ties in 1997.

This might mean that the vast majority of reported work had no corporate influence or bias. More likely, says Sheldon Krinsky of Tufts University in Medford, Mass., authors are simply failing to report potential conflicts of interest. Indeed, research that his team reported last year showed that some 34 percent of all Boston-area authors who published papers in 14 major journals during 1992 had financial stakes in the outcome of the research—even though none disclosed those stakes in the articles.

Krinsky and L.S. Rothenberg of the University of California, Los Angeles have now updated their study and expanded its focus to 1,400 of the research community's high-profile journals. By 1997, they found, 215 publications had a formal financial-disclosure policy for their authors. The pair then examined every article published in 210 of these journals. The other five were not available to the researchers.

The 184 journals in the group that were peer-reviewed published a total of 61,594 articles. In only 327 articles—just 0.53 percent—did any author acknowledge a potential for financial gain from the reported work. When Krinsky and Rothenberg included articles published in the non-peer-reviewed journals, the disclosure rate was still just 0.55 percent.

Their new survey turned up an equally provocative highlight. Five biomedical journals required authors to check off a box alongside a formal statement that best characterized their commercial ties. On average, Krinsky and Rothenberg found, 13 percent of the authors filled in boxes indicating they had at least the potential for direct financial gain from their research.

Because “there is no reason to believe that these journals have authors who are more involved than usual in commercial activities,” Krinsky concludes that such “templates are especially effective at eliciting disclosures.” —J.R.

Cost estimates rocket for uninvited guests

Not counting any havoc wrought by little green men, alien species like weeds and rats cost the United States at least 75 times more than previously reckoned, say Cornell University ecologists.

David Pimentel's group estimates that damage from and controls for nonnative species top \$122 billion a year. In 1993, the now-defunct congressional Office of Technology Assessment (OTA) tallied a total of \$97 billion in such costs, spread over 60 years. “When I saw that number, I knew it was far too conservative,” Pimentel says. Among other omissions, OTA “didn't touch weeds or plant pathogens.”

His list of aliens and their costs, in fact, is topped by weeds. They claim \$29 billion in crop-yield losses and controls yearly. Next come \$23.5 billion for nonnative crop diseases and \$19 billion for rat damage. There's about one rat per person in the country, the researchers say. Cats get listed, at \$6 billion, for killing some 200 million birds a year—that's two apiece. Live-stock losses and medical costs for treating bites put dogs on the list too, at \$136 million. Other aliens account for \$35 billion.

If Pimentel couldn't find numbers for something, he didn't count it. Overall, he says, “it's a conservative estimate but still bad enough.” Money spent keeping aliens out of the United States, he says, “can be returned many times over.” —S.M.

What will ease the pain? Ask a frog

It's hard to do pain research without causing a little, well, pain—or at least what passes for it. Moreover, because “cells don't feel pain,” such studies must be conducted in whole animals, explains Craig W. Stevens, a pharmacologist at the Oklahoma State University College of Osteopathic Medicine in Tulsa. With the aim of finding test subjects that feel less discomfort, he's leaped into research on what he believes is the first nonmammal “guinea pig” for analgesia, the leopard frog.

Unlike vision, “pain is more than a pure sensory perception,” he says. At least in humans, he notes, it can evoke all sorts of ancillary responses, including emotions. Such responses trace to parts of the brain not found in critters from earlier in evolutionary history, such as amphibians. So, reasons Stevens, frogs' capacity for pain is probably smaller than mammals'.

For his studies, he places a drop of vinegar on a frog's thigh and watches for a characteristic wiping response, indicating irritation. If it doesn't occur, he places two drops on the opposite thigh. He keeps switching legs and upping the dose until the frog attempts to wipe the vinegar off. Then he delivers an analgesic drug to the animal and runs this acid test again.

In contrast to humans, who have three types of brain receptors for pain-inhibiting opiate drugs, frogs possess just one. Yet “the amazing thing,” Stevens finds, is that the frog's receptor responds to analgesic drugs that work on any of the three human receptors. Also, relative potency of analgesics in frogs matches that in mammals. He concludes that the frog's receptor must be ancestral to the trio of receptors in mammals and that studies with these amphibians “eventually will lead to a better understanding of the molecular mechanisms of how opiates work.”—J.R.

Good parents still make the difference

Are parents who put a lot of effort into sensitive, warm involvement with their child negating the benefits when they wave bye-bye at the day care door?

“One fear that parents have is that children in child care might lose out” on advantages derived from home, says Alison Clarke-Stewart of the University of California, Irvine.

Her latest results should reassure parents. Confirming previous work, she says that, overall, a good family influence “is not lost.”

The influences on language and cognitive development is one issue addressed in the National Institute of Child Health and Human Development's study of 1- to 3-year-olds. Clarke-Stewart and her colleagues are analyzing how more than 1,300 families care for their children, ranging from alone with Mom to platoons of toddlers in centers.

Clarke-Stewart studied home backgrounds, videotaped mothers, and tested kids for language and cognitive development. She compared a group of youngsters who stayed with Mom all day to youngsters who went to day care full-time.

Overall, the power of a good home predominated. Regardless of care arrangements, higher scores correlated with the more affluent homes and the mothers whom researchers ranked as warm, sensitive, and more positively involved.

Clarke-Stewart did notice other cases where the quality of day care made a difference. For children from average homes, high-quality care seemed to boost development and lousy care stunted it. However, effects of good or poor day care seem modest compared with home influences, she reports.

As part of the same research initiative, Cathryn L. Booth of the University of Washington in Seattle and her colleagues rated care in nine states and extrapolated the results to the whole country. Booth says the study is unusual because it relied on direct observations of children and caregivers. About 53 percent of U.S. child care ranks as “fair,” Booth estimates. About 8 percent of care ranks as “poor,” 30 percent as “good,” and 9 percent as “excellent.” —S.M.