Good News, Bad News

After the first year in a new job, one can measure both its joys and its tribulations, and then compare each against one's expectations. Herewith an editorial-length summary of my own attempt at that.

As to expectations, mine were high. Coming to *Science* provided an opportunity to sense what was exciting, both in areas of science I had known earlier and in others that were new. Thus it has been equally astonishing to learn from contemporary neurobiologists how molecular signals are employed in making appropriate connections, and to watch geologists reconstruct the early history of Earth dynamics. Heady stuff, for one who found the specificity of connections mysterious as a neurobiologist in the '70s, and whose undergraduate teachers thought the continents stayed put.

The other fulfilled expectations came from my colleagues, a superbly accomplished staff of editors and science journalists. But we could not do without the unpaid volunteers in the scientific community who write, review, and contribute Perspectives for us—all as labors of love. Few enterprises are as favored with pro bono help as we are. In all these ways, my engagement with the current generation of scientists has been almost entirely uplifting.

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But the "almost" in the last sentence is there for a reason. The disappointments have been less frequent than the rewards, but just common enough to concern me—as well as my colleagues at *Science* who have lived with them for longer than I have. A few examples from our experience this year will suggest the scope of the problem.

An author sends us a paper purporting to contain original work, but fails to include a copy of another paper, under consideration elsewhere, that reports most of the data included in the *Science* submission. Another writes to ask why a paper with his name on it had been submitted to and then published by *Science* without his knowledge or consent; upon inquiry we are told by the corresponding author that the complainant's name was included "as a courtesy." An obviously pseudonymous e-mail arrives, claiming that the work in a paper submitted by a colleague in the same institution is seriously defective, perhaps fraudulent; when challenged for further information, the e-mail's author apologizes and retracts the charge. A scientist attacks the methodology of a rival's published paper at a press briefing, with the stipulation that these claims are "not for attribution." A referee, engaged to review an article on a confidential basis, sends a copy of his review, along with the original article, to several dozen colleagues and friends on the other side of the debate.

Now, none of these incidents is novel; none, perhaps, is even an occasion for great moral outrage. These are not conscious frauds, like the occasional paper that has to be retracted because some of the data were falsified. (We had one of those this year, too.) Since we all know that such things happen, why call attention to them now?

The reason is that their frequency appears to have increased. I think I know why. The universe is larger, and in the "hot" fields like molecular biology the competition—for funds, for appointment, for tenure, and for prizes—is more intense. And the advantages that accrue to publication in a prestigious journal are correspondingly large. In some countries, governments allocate prize money and promotion directly to researchers who publish in *Science*. In the United States and Europe the rewards are more subtle, but nonetheless real. Whenever a prize is sufficiently attractive, there is likely to be competition among the aspirants.

In some respects, research competition is healthy: It can accelerate progress, as it did in the case of the two human genome projects. It can also exact costs of the kind I have outlined, and we have experienced too many of these in this past year. Our task is to maintain a level playing field for all who publish with us. When we discover transgressions, we can of course take action, as we have in some past cases: by rejecting a paper, by communicating with the author's institution or the funding agency, or by barring future submissions. But we'd rather not, preferring instead to work with our authors, readers, and reviewers to sustain a scientific community in which the good news far outweighs the bad.

Donald Kennedy