

The idea factory

Science will benefit most from a combination of youthful innovation and hard-won experience.

These are confusing times for senior scientists in India. Those who read the *Hindustan Times* would last month have seen an encouraging message from the science and technology ministry. A draft note sent to all government ministries, the newspaper said, proposed raising the retirement age of government-employed researchers from 60 to 65. Scientists beyond 60, it said, are still productive and contribute to the scientific wealth of the nation. Most encouragingly, it claimed, the global average age of “top scientists” is 70.

Yet, Indian Prime Minister Narendra Modi seems to have a different agenda. Late last year, Modi’s office refused to grant permission for four lab directors at the Defence Research and Development Organisation to have their contracts extended past the usual retirement age. Modi, commentators say, wants to encourage young blood and fresh talent. He wants five of the research organization’s

laboratories — including those that work on metallurgy, lasers and cryptography — to be headed by scientists aged 35 or under. At present, many young researchers go elsewhere, discouraged by the lack of opportunities in an organization dominated by the older generation.

Such bench-blocking is a problem for scientific organizations across the world. Last week, *Nature* reported on an initiative from the US National Institutes of Health (NIH), which for years has watched the average age of its grantees creep upwards (see *Nature* 518, 146–147; 2015). The NIH has proposed a system of emeritus grants that will pay senior scientists to wrap up their research and close their labs, thereby freeing up money for the next generation.

If the young scientists waiting for their turn at the top table are growing impatient, then a study suggests that they have a strong case. As we report on page 283, analysis of some 20 million biomedical papers published over the past 70 years suggests that younger researchers are more likely than older researchers to be working on innovative topics. Out with the old? Not so fast: if you are good enough then you are old enough, certainly. But the latest analysis also suggests that the most productive groups teamed a young researcher with an old(er) hand. There is an age-old problem here, but it is not necessarily old age. ■

ANNOUNCEMENT

Nature journals offer double-blind review

Starting in March, *Nature* and the monthly *Nature* research journals will offer an alternative to conventional peer review. Authors will be able to request that their names and affiliations are withheld from reviewers of their papers — a form of peer review known as double blind. At present, the process is single blind: reviewers are anonymous, but they know the authors’ identities.

Alternatives to the conventional peer-review process are often proposed. Some have suggested fully open reviews, in which the names of both authors and reviewers are known. Proponents of open peer review see its transparency as a way to encourage more civil and thoughtful reviewer comments — although others are concerned that it promotes a less critical attitude.

By contrast, advocates of double-blind peer review suggest that it eliminates personal biases, such as those based on gender, seniority, reputation and affiliation.

Both systems are already in use across scholarly publishing, but there is no consensus on which is best. *Nature* experimented with open peer review in 2006, but at the time, despite expressed interest, the uptake from both authors and reviewers was low and the open reviews were not technically substantive. Views about open peer review are probably still evolving as several journals continue to experiment with variations on this practice. Opinions about double-blind review, however, are remarkably consistent.

In one of the largest studies on peer review — a 2009 international and cross-disciplinary survey of more than 4,000 researchers — 76% of respondents indicated that double blind was an effective peer-review system (A. Mulligan, L. Hall and E. Raphael *J. Am. Soc. Inf. Sci. Technol.* 64, 132–161; 2013). (By comparison, open and single-blind peer review were considered effective by 20% and 45% of respondents, respectively.) Our own surveys confirm that double-blind peer review is a popular option. Importantly, this sentiment is widely echoed in conversations that our editors have had with young scientists worldwide. These conversations

demonstrate a widespread perception that biases based on authorship affect single-blind peer review.

The decision to offer double-blind review has been much discussed. Editors of *Nature* journals have previously resisted it for several reasons. Some were sceptical of its efficacy, some were concerned about the potential difficulty of recruiting referees, and some still saw it as their responsibility to mitigate the biases that this method tackles.

All editors take this responsibility seriously and will continue to select reviewers carefully and consider their comments. They will also continue to honour reasonable requests from authors to exclude particular reviewers, regardless of the chosen method of peer review. But by definition, unconscious biases may be difficult to identify and to control. Several studies have detected involuntary biases, notably based on gender, in other areas of the scientific enterprise, such as in the hiring of laboratory staff, citation habits and speaker line-ups at conferences.

Since June 2013, *Nature Geoscience* and *Nature Climate Change* have allowed authors to choose between double-blind and single-blind peer review at submission. The uptake of the double-blind method has been much lower than the enthusiasm expressed in surveys suggested it would be. No more than one-fifth of monthly submissions to these journals are choosing the double-blind route. No substantial effects on the quality of reviews have been detected. The positive reactions to the trial from surveyed authors are a big part in the decision to start offering double-blind review at *Nature* and the *Nature* monthly journals as well. (*Nature Communications* will join later.)

How will it work? The responsibility to render the manuscript anonymous falls to the authors. Clearly, keeping their identities from reviewers will not always be possible, especially in small and specialist fields. We also continue to promote policies that support researchers who wish to release data early and to discuss their work with their peers before publication, through conferences or by posting research on preprint servers. These routes to publication also compromise anonymity. That is why the double-blind process is optional on all titles. We expect that some authors will choose it because of concern about biases, others purely on principle.

We will keep this initiative under review, and we, of course, welcome comments from authors and reviewers. ■