EMBO reports

editorial

# Decisions, decisions

Our paper is accepted for publication, our grant application is successful, our topic of interest is added to a funding programme, we receive an invitation to speak at an important meeting. These events—which are, to a certain extent, beyond our control—have a significant impact on our careers. The reality is that our professional lives are often shaped more by the decisions of others than by our own choices.

Consequently, we should understand the processes that lead to these decisions. However, there is often a lack of interest, and a lack of transparency, in the steps leading to the final verdict. I am surprised at how many authors have little understanding of the different systems that journals use to assess scientific manuscripts. The use of peer review is common to all, but the term covers quite diverse practices. I once had a paper accepted so fast that the decision must have been made by only one person on the day it was submitted. Such a positive response is rare, and never questioned. But when the reverse happens, and a manuscript receives mixed reviews, the bias of one person can have disproportionate consequences.

Peer review is typically anonymous. I am in favour of this because it allows the reviewers to speak frankly rather than couch their comments in layers of political correctness. Still, other factors might play a role when referees provide their opinion on a manuscript. They might have heard a presentation of the work at a conference and noted the reaction of the participants. The author's affiliation might also encourage bias. Editors currently have no reliable way of recognizing or removing invisible prejudice from reviewers' assessments; therefore, their final decision on a manuscript, which ultimately affects the quality of the author's CV and job prospects, can be made in an unsatisfactory way. There are alternatives being tested, but I am sceptical that they will prove any better.

Much of the above also applies to the procedure for awarding grants. Selection committees often judge not only the scientific quality of a proposal but also how it matches their views of the granting scheme's purpose. Most scientists abhor questions about the "societal relevance" of a proposed research project, particularly in cases in which the scientific quality of the application comprises less than half its total score. There might be some subjectivity when judging the quality of a scientific proposal, but there is usually no objectivity in anticipating its societal benefits. In addition, non-scientific factors have a role: committee members might subconsciously favour a scientist from a well-known institute over a new group from a lesser-known location. Working on a trendy subject might also help, and being known by a committee member could make all the difference.

So scientists might receive grants to carry out work that they are passionate about and that support their careers. Or they might end up below an arbitrary cut-off point and have to struggle to continue or else pick a topic that is more easily funded. Having lived from such grants for more than ten years in Ireland, when the country had almost no science funding, I empathize with those whose research is defined by funding opportunities rather than by their own determination.

The grant system itself is shaped by policy makers who decide on which topics to support financially. Here, a single word might open up new opportunities when the committee decides that a subject is appropriate for funding. How do these words appear? Often it is by matching the programme to political needs and, of course, through open or subtle lobbying (Gannon F (2006) Wanted: a strategy for European science. *EMBO Rep* **7:** 457). Again, factors beyond scientists' influence inevitably decide whether their research projects are funded. It is interesting that the meeting of the European Competitiveness Council on 24 July was broadcast live on the worldwide web, so members of the public were able to follow the process of decision-making. It would be fascinating if these broadcasts were extended to include other policy discussions.

In science, as in life, success breeds success. An accepted manuscript makes it easier to receive a grant, which helps to raise a scientist's profile and increases the chances of being invited to speak at conferences. An upcoming attendance at a meeting stimulates a scientist's lab to wrap up its research in time; questions raised during the meeting help to shape the manuscript, the publication of which will raise the scientist's chances of getting a new grant or position. Again, decisions made by someone else—an editor, a board member, a meeting organizer—have an impact on scientific careers.

So when you meet a colleague whose career seems to have plateaued, think about the many reasons why they might not have reached stratospheric heights. Perhaps a referee for their last paper suggested a 'specialist' journal for the work, or an editor felt that the topic was not 'hot' enough for a top journal. Or maybe their last job application was unsuccessful because a member of the selection committee did not recognize the journal in which the paper finally appeared.

It is not only careers that hinge on such fragile unscientific strings, but also the overall direction of scientific research. Those who make decisions must recognize their responsibility. They must ignore all subsidiary considerations; good science comes from different and sometimes unlikely addresses. Projects to tackle unlikely topics can be more interesting than the mere addition of another component to a well-sketched pathway. Decisions should be based on the quality of the science, and made without bias or preconceived concepts. History shows that this is the best way to sustain areas of research that will be important in the future. For scientists, it is the only way for careers to develop fairly and fruitfully.

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