

Quotas are questionable

Measures to give women a fair chance in science should be based on evidence, warns **Isabelle Vernos**, or they could make matters worse.

In Europe, only 36% of mid-ranking professors, and 18% of full professors, are women, despite equal proportions of men and women at the undergraduate level¹. To address the problem of gender imbalance, the European Commission (EC) has committed to reaching 40% female participation in its advisory structures for Horizon 2020, the European Union's research-funding programme for 2014–20. The EC has also proposed a mandatory quota of 40% for women on non-executive boards of public companies.

But statistics collected by the European Research Council (ERC) suggest that quotas are no magic wand to bring about gender equality in research and academia (despite tentative successes elsewhere, such as for company boards in Norway). Quotas might even make matters worse by overworking already-stretched female scientists. Instead, a range of bottom-up and top-down measures are needed to effect lasting change in the structures and culture of science.

THE ERC EXPERIENCE

The ERC, launched in 2007, provides up to five years of funding for scientific-research projects chosen by peer reviewers through a transparent competition system. So far, women make up a disheartening 19% of the ERC's 3,500 grantees and account for just 25% of the nearly 35,000 applications received by the ERC to date; 29% of applicants for early-career grants, and only 15% of those for advanced grants, are female.

In 2010, the ERC implemented some recommendations — made by its gender-balance working group (GBWG) under the excellent leadership of outgoing chairwoman Teresa Lago — such as increasing the window of grant eligibility for applicants who have children (the US National Science Foundation adopted similar measures in 2011). The number of female applicants for ERC grants has increased, but so has the number of male applicants — the gap has not narrowed.

Another concern is the lower success rate of female applicants for ERC grants: 10% on average, versus 12% for men. This general trend has been observed in other funding schemes, including the European Molecular Biology Organization² and the international

Human Frontier Science Program³. Despite several studies on the issue, the reasons for these disparities are still elusive^{2,4}. The dearth of women in academia's upper ranks

creativity and productivity, and scientific excellence requires steely focus and lots of time. Female scientists are more likely than males to bear domestic duties^{2,5}, making their time already stretched. My estimate, based on the proportion of ERC grantees who are women, is that the burden of panel participation would be three or more times higher for these women than for men in equivalent positions. That said, concerted efforts should be made to identify qualified women for all posts.

Given that measures taken to date have had limited impact, some argue that mandatory quotas are the best way to accelerate gender balance in research (see page 42). I disagree. There are many pockets of good practice — such as mentorship programmes, family-friendly policies and transparency in recruitment — and these should be expanded. Further solutions must also be sought. The GBWG has commissioned a study, called ERCAREER, to examine the career paths of young female and male scientists. Another study, to begin this year, will look into possible sources of

gender bias in the ERC's evaluation processes.

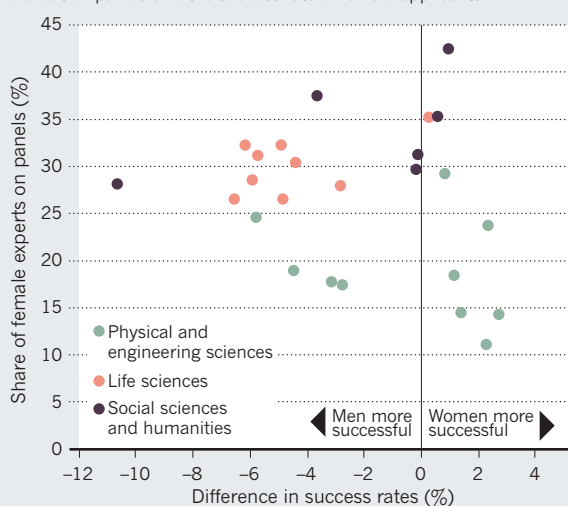
Progress towards improving women's representation in science is too slow. More efforts are needed to understand the reasons for gender disparities and to recruit, retain and promote excellent female scientists — and thus increase the research talent pool and power scientific progress. Europe's future success requires a society that recognizes talent and offers equal opportunity to all — through evidence-based measures. ■

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1. European Commission. *She Figures 2009: Statistics and Indicators on Gender Equality in Science*. (European Communities, 2009).
2. Ledin, A., Bornmann, L., Gannon, F. & Wallon, G. *EMBO Rep.* **8**, 982–987 (2007).
3. Langfeldt, L. *Review of the Human Frontier Science Program's Initiatives 2000–2005*. Working Paper 26/2006 (NIFU STEP, 2006).
4. Moss-Racusin, C. A., Dovidio, J. F., Brescoll, V. L., Graham, M. J. & Handelsman, J. *Proc. Natl Acad. Sci. USA* **109**, 16474–16479 (2012).
5. Martinez, E. D. *et al. EMBO Rep.* **8**, 977–981 (2007).

GRANT GAP

Aggregating data for 2008–12, the European Research Council found no correlation between the percentage of women on its evaluation panels and the success rate of female applicants.



translates into their scarcity on committees, and it has been argued that this gender imbalance could be feeding back into the lower success rate of female applicants for funding schemes and positions.

I do not think this is so — at least not at the ERC. We have found no correlation between the success rates of female applicants and the gender balance of evaluation panels (see 'Grant gap'). Nor have we found that female applicants are more successful when the panels are chaired by women. Other studies have found that women fare worse than men in evaluations⁴, even when applicant gender is undisclosed to evaluators⁵. These findings suggest that a quota system for staffing evaluation panels will not lead to more grants for women.

Worse, quotas would place greater demand on the small pool of female scientists who would serve on these panels — possibly enough to hamper their career progress. Scientists are evaluated on the basis of

