

Wednesday 28th October, CBU Women in Science Symposium

The newly formed Equality Committee at the MRC Cognition and Brain Sciences Unit (CBU) has recently begun to address issues relevant specifically to women in science. This was motivated by the Unit's recent quinquennial review, in which the Subcommittee noted the balanced numbers of men and women at PhD and junior research levels at the Unit, but an absence of women at senior levels. Following the recent retirements of Karalyn Patterson and Barbara Wilson, and Kim Graham's move to Cardiff University, of approximately 21 CBU scientists at the Band 3 level or above, none are women. The Subcommittee concluded that while the Unit had attempted to recruit women to Programme Leader and Programme Leader Track positions, more needed to be done to explore ways to engage women scientists at a senior level.

Although the situation is particularly problematic at the CBU, the bigger picture for women in science both in the UK and elsewhere is far from balanced. The under-representation of women at senior levels does not adversely impact only 50 percent of the population, but all of us. Whereas good employment practice benefits everyone, bad employment practice disadvantages women in particular. Furthermore, there is clear evidence that diversity within a workforce is beneficial to an organisation's overall performance. The CBU Equality Committee is thus proud to have recently hosted our first Women in Science Symposium for both the CBU and wider MRC and Cambridge scientific communities. The event, which was held on Wednesday 28th October in the CBU Lecture Theatre, was motivated by the idea that women in science must support and encourage one another. The symposium celebrated and showcased successful women senior scientists who have been associated with the CBU at some point in their career.

A packed lecture theatre of 80 early to mid-career scientists and PhD students listened to speakers share their wisdom and experiences of particular challenges they have faced as women, strategies they have developed to overcome these, insights into things they might have done differently, and suggestions on how to balance family life and career. The inspirational speakers were as follows:

Prof Barbara Wilson, OBE (Retired Senior Scientist, MRC CBU)
Prof Dorothy Bishop (Wellcome Principal Research Fellow, University of Oxford)
Dr Bundy Mackintosh (Senior Lecturer, University of East Anglia)
Prof Sophie Scott (Wellcome Senior Research Fellow, Institute of Cognitive Neuroscience, University College London)
Prof Sue Gathercole (Head of Department of Psychology, University of York)
Prof Kim Graham (Professor of Cognitive Neuroscience, Cardiff University)
Prof Nilli Lavie (Professor of Psychology and Brain Sciences, University College London)
Dr Elisabeth Hill (Senior Lecturer, Goldsmiths, University of London)
Prof Anne Cutler (Director, Max Planck Institute for Psycholinguistics, Nijmegen)
Prof Vicki Bruce, OBE (Head of School of Psychology, Newcastle University)
Prof Karalyn Patterson (Retired Senior Scientist, MRC CBU, Research Fellow, University of Cambridge)
Dr Jenny Brookman (Chair, Cambridge Association for Women in Science and Engineering (AWISE))

Several common themes emerged during the day:

- None of these top female psychologists had followed a prespecified career plan; rather, they had taken opportunities as they arose and each had achieved success in an individual way which often did not follow what might be considered a conventional career path. Many had started from unpromising backgrounds. We heard examples from women who began their career as mature students and from women who had experienced a range of demanding caring responsibilities (for parents, children, or spouses) or other reasons for a career break (illness,

bereavement). Success seemed a consequence of finding a congenial environment and making the most of the situation one found oneself in, rather than striving for the glittering prizes.

- All of the women were motivated by a strong enthusiasm for psychology and a generally optimistic approach to life. Several commented on the important role played by parents or partners in encouraging them to pursue academic careers.
- The beneficial aspects of cultivating self-confidence and the courage to take measured risks were highlighted; it was felt that such qualities would contribute to a successful career. For example, agreeing to give an invited talk before feeling completely 'ready' to do so, or having the courage to embark upon a collaboration where one might not have otherwise, could often open the door to further opportunities. Equally, the decision to move to a different department within the UK or abroad, was something that many of our speakers had done several times, despite the complications that this sometimes created for their family life.
- They did not approve of a macho culture of long hours, nor of excessive focus on publication rates or getting grants as a means of enhancing one's C.V. The emphasis rather was on doing science well for its own sake, with the view that a good reputation would follow from this. A return to core values was recommended, where one writes a paper to communicate an idea rather than simply to boost the number of published papers and where one applies for a grant to secure funding for quality and interesting research rather than as an end in itself. Similarly, it was felt that one was more rather than less effective by following a schedule that allowed time for non-academic activities. Many also acknowledged that for factors such as those noted above (maternity leave, caring responsibilities, illness), women (and sometimes men) could be left with extensive gaps in their C.V. during which productivity was significantly reduced. It was suggested that there should be some mechanism in place that allows those in this situation (and this typically means women) to provide some 'context' for these periods. For example, a common sense approach, where a grant for example is 'frozen' for the period someone is unable to work and then restarted, would be very helpful, and something that the Research Councils could pilot immediately.
- Those who had children noted that this had affected their careers more than would be the case for a man, but it was evident that a happy, productive and high-powered career was compatible with family life where there was adequate support. Indeed, for some women, each of the two roles provided a welcome change from the other. It was also noted that caring for elderly parents, as well as children, tended to be a task that fell to women more than men. In general, the speakers felt that attitudes of academic managers had improved greatly over the past decades, and were more accommodating than those in other areas such as business. An advantage of an academic career was the flexibility that it provided in terms of working hours. Nevertheless, more than one speaker commented that there remained difficulties for women who wished to work part-time, as this was usually achieved by maintaining teaching and administration duties, while removing any research component from their workload. In addition, adequate support for women upon return to work from a period of maternity leave, child-rearing or other career break is essential. This support could come in many shapes and forms: e.g. access to mentoring, flexible working arrangements, appropriate share of computing resources, provision of childcare facilities at conferences. There was also some discussion but no resolution about the optimal timing of career breaks, and whether these were best taken early or late in one's career. A relevant book authored by Ottoline Leyser, 'Mothers in Science: 64 ways to have it all', also details the variety of ways in which 64 senior women

scientists have managed to successfully combine family life with their careers. A pdf copy of the book can be found here:

<http://royalsociety.org/page.asp?id=1782>

- Few felt they had experienced frank discrimination, though there were some clear examples of stereotypical perceptions of women that persist throughout their careers, even after they reach senior positions.
- Two speakers recommended Virginia Valian's book *Why So Slow* as a balanced appraisal of research into gender inequalities. This book explains the lack of females in top academic and professional positions in terms of schema theory: subtle but empirically demonstrable differences in how men and women are perceived that have small but cumulative effects. It is thus important to be aware of these schemas, especially as these biases and attitudes persist for women in senior positions. (A copy of Virginia Valian's book will soon be available in the CBU library.) A video link to one of Virginia's seminars outlining the problem and some of the evidence can be found at <http://mitworld.mit.edu/video/80/>, and equity materials useful for reflection and action at the individual and organisational levels can be found here: <http://www.hunter.cuny.edu/genderequity/equitymaterials.html>.
- Others noted specific possible differences between men and women, for example, women on average may patrol their behaviour more closely than men. This may in turn have adverse effects on women's progression, with women asking fewer questions in seminars or committee meetings due to marked concerns about what others may think. Similarly, proportionally fewer women apply for fellowships from the funding bodies such as the Wellcome Trust, possibly for similar reasons, as applying for these prestigious fellowships can require extremely high levels of confidence.
- The discussion of Valian's argument led to an examination of publication practices and the importance of blind reviewing. There is evidence to suggest that double-blind reviewing can lead to increased acceptance rates of submitted papers where the first author is a woman scientist. Furthermore, there was consensus that women who publish with powerful males as co-authors may lose out because it is often assumed that the women have not made a significant intellectual contribution. At least two speakers gave concrete examples of how this had affected their career. It was noted that it is important to establish an independent publishing track record, though this is not always easy. Because first and last authorship positions tend to be far more important than other authorship positions, it is important for women (and men) to argue for an 'author contribution statement' to be included on a publication where they have made a significant contribution without achieving first- or last-author status.
- Promotion practices may also disadvantage women, if decision-makers rely on individuals putting themselves forward, rather than an even-handed scrutiny of all potential candidates. Managers should recognise that the self-image of women often makes it difficult for them to put themselves forward for promotion, as this kind of assertiveness and sense of entitlement is not part of the female schema (men are raised to expect rewards for their efforts, while women are raised to offer work and time for love, see reference to Virginia Valian above). Discussion of promotion naturally led to views on accountability regarding the criteria used for promotion (and hiring). It was also suggested that if women find it difficult to be promoted in a system where, for example, significant time spent on administrative or pastoral duties are not taken into careful consideration, the promotion criteria must be examined carefully at policy level with an eye to future modification of these.

- Views were strongly divided on the issue of affirmative action. On the one hand, because schemas are derived from statistical abstractions, if the status quo of a male predominance in a field is maintained, then the schema that regards men as more natural in this role will persist. On the other hand, if the statistics are manipulated by increasing the ratio of women by artificial means, this would be perceived as unfair to men (nor do many women want to believe that they have been hired on this basis, rather than on the basis of merit). Mention was made of a system in place in Germany, where continued full funding of university departments and research institutes is made contingent upon meeting certain targets for the proportion of women faculty members. The importance of inspirational role models was also emphasised, and so ways must be found to increase numbers of women at more senior levels, though some speakers also made mention of men who acted as role models at points in their career.
- Anne Cutler emphasised that we must change the distribution and the statistics of the world around us in order to have real change in the way we react to the world, because this is how efficient human cognition picks up the regularities that surround us. She argued that we all, men and women, can make small changes at all levels that will alter the skewed distributions: invite women as key note speakers and session chairs at conferences, nominate women for prestigious prizes, place women on important committees etc. She also noted the importance of relevant research, e.g. Dorothy Bishop had detailed findings showing that the same article is rated more highly with a male vs. a female author (Paludi & Bauer, 1983). What this research shows is that two people who appear equal on paper are actually not equal if one belongs to a higher-status group (e.g. is male). Anne finally underlined the responsibility of us all, as psychologists, to know this research and to consider its consequences for policy and action surrounding appointments.
- A related point to the above idea is the assertion that women must take responsibility for being a role model at *all* levels of their career. This can include asking questions at seminars and meetings, taking on delegation responsibilities (e.g. taking visitors round the Institute), supporting and encouraging one another, even 'pushing' women junior researchers and students to do things they might not do otherwise, and encouraging women into leadership roles. Having access to a mentor at key stages in one's career can achieve similar effects, with the added benefit of the wisdom and guidance that can be gained from an established and senior scientist and the importance of inspirational role models (both male and female).
- Several speakers commented that women should capitalise upon their natural advantages – women often have good communication skills, women are skilled at conveying enthusiasm effectively, and panels are often eager to include a representative woman.
- Organisations such as Cambridge AWiSE and Athena Swan can play an important role in encouraging more women to reach senior levels in their scientific careers by providing opportunities for networking, advice on how to progress in one's career, information about funding, employment and legislation, and opportunities for formal or informal mentoring.
- Although those present found this an inspirational and informative day, it was noticeable that the meeting was not attended by representatives of MRC Head Office.

Despite many of the inequalities and obstacles outlined above, women have come a very long way since the early 20th century, when women had to fight for their right to higher education in a time when it was unusual for a woman to enter a profession. This shift in the statistical regularities around us means that a high proportion of girls and women in contemporary society believe that it is possible to study at university level and make educational choices accordingly. From this, it follows that it is the responsibility of our generation to push the boundary further and make it possible for the women of the 21st century to reach their full potential without having their sex perceived as disadvantageous.

The event, which received generous financial support from the CBU Director W. Marslen-Wilson and the MRC Head Office, was a great success with many asking for it to be repeated annually.

This report was prepared by Dr Fionnuala Murphy (MRC CBU), Prof Dorothy Bishop (University of Oxford), and Dr Natasha Sigala (MRC CBU and University of Oxford).