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This is a so-called personal version (author's manuscript as accepted for publishing after the review process but prior to final layout and copyediting) of the article, Hearn, J., 2012:, 'Men, masculinities, gender equality, and excellence in science', *Facultas Verlags- und Buchhandels AG WUV-Universitätsverlag, Vol. 1, pp. 75-86.*

https://www.meduniwien.ac.at/homepage/fileadmin/HP-Relaunch/pdforganisation/gleichbehandlung/Veranstaltungen/Tagungsbaende/Tagungsband_Exzellenz_diskussion_2012_web.pdf#page=75

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**Men, masculinities, gender equality, and excellence
in science**

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ABSTRACT

In recent years there have been major policy developments and policy debates on both the search for excellence in science, and the need for more effective gender mainstreaming and gender equality measures. However, these two sets of initiatives have usually been promoted rather separately from each other, whether at organisational, national and European levels. The move to “excellence” may involve both intended and unintended consequences, including those relating to gender relations, biases and inequalities. Gender relations, gender biases, gender inequalities in the construction of “excellence” can occur in terms of:

- Individuals: Who does what in science, including women’s participation;
- Organisations: Gender in organisations, organising, and cultures of science;
- Knowledge: Gender in research process and knowledge production in science.

These processes of gender relations, gender biases, gender inequalities are not only about women, but equally the gendering of men and masculinities, including men’s domination of the scientific leadership. Changing this situation means changing men, not changing women to “fit in”. Gendering – of men and women – is also intersectional, complicating the picture further.

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1 INTRODUCTION

Women constitute the majority of undergraduates, but a minority of researchers, and a small minority – 13% in 2007 in the EU-27 – of heads of science institutions (EC 2009b). Yet research and academia more generally frequently present themselves and are presented as (gender-)neutral, purely intellectual and meritocratic activities. Rather, academic life is incessantly, perhaps inherently, gendered: practically, organisationally, structurally.

In addressing gender (in)equality, women are still often seen as the problem, with the complementary solution: change women! More recently, gender relations have been seen as the problem, with the solution: change gender relations, or gender mainstreaming. Far less usual is to focus on men as a problem, or to suggest changing men might be the solution or part of the solution.

In recent years there have been major policy developments and policy debates on both the need for more effective gender mainstreaming and gender equality measures, and the search for excellence in science. However, these two sets of initiatives have usually been promoted rather separately from each other, whether at organisational, national and European levels (Hearn et al. 2010). Both gender equality and excellence in science are not only about women, but changing men too. Gender relations, gender biases and gender inequalities are about not only the gendering of women, but equally gendering of men and masculinities.

Promoting gender equality in science is now strongly on the agenda of major stakeholders: including leading universities, such as MIT (1999); national research councils and major funding organisations; high profile journals, such as “Science” (2000), and “Nature” (2009); international organisations, for example, the United Nations and its agencies, such as UNESCO (Harding/McGregor 1995), OECD (2006), and the European Union (ETAN 2000; EC, 2004, 2008a, b, 2009a, b).

At the same time excellence in science is being pursued, one might say is becoming almost an obsession, by way of positive valuation of quality, production and “outputs”, not just quantity. This involves peer review assessment of quality of research products, as part of ‘certified knowledge’. In many fields bibliometrics dominate, even with their problems in terms of comparability, language use, and how to assess innovative and multi/inter/trans-disciplinary research. In many ways the search for excellence is a

truism: the good of the good; the value of value; the excellence of excellence. Yet defining, measuring, recognising, awarding excellence are social processes, subject to social gender patterns and dynamics (Rees 2011). Interestingly, the cases for gender equality and for excellence in science are remarkably similar. They both involve: the realisation of individual potential; the search for greater social justice; the best use (or non-waste) of resources; and the enhancement of knowledge itself.

Meanwhile, at the same time as these dual trends, there are other profound influences in research, in terms of the spread of neo-liberalism, cutbacks, accountability, and what might be seen as an emerging “new gender-neutrality”. Ranking of universities, researchers and research groups is now routine in league tables and other scales. Intensification and turbo-academia is in place. Moreover, networks and partnerships between universities and research groups are increasingly important, as part of internationalisation.

In this paper I consider three aspects: approaches to critical gender research on men and masculinities; applications of such approaches to understandings of men and masculinities in science; and actions, namely what is to be done – collectively, organisationally, individually – about men in science?

Approaches: Critical approaches to men and masculinities

Much of science continues to be pre-scientific in failing to notice that men are gendered beings, socially constructed and reproduced, not just agendered, “neutral” adults, citizens or people. Many women and a relatively few men have noticed that men can, first, be gendered, and, second, studied in a different, more critical way. Most men (social) scientists continue to ignore this. Mainstream, malestream, science and knowledge continue without bothering to gender men. There continues to be a very large body of research that may be called ‘normal science’ where men study non-gendered subjects or men without noticing they are men.

The approach outlined here is conceived as Critical Studies on Men (CSM) (Hearn 1997). Studying men is in itself nothing new and nothing necessarily radical, progressive, feminist or profeminist. Libraries are full of books by men on men for men. In CSM, men are the critical object of concern; men are gendered; men are examined critically; and such studies can be done by women and men, collaboratively together or separately. CSM have developed historical, cultural, relational, materialist,

deconstructive, anti-essentialist studies on men; men are seen as part of historical gender relations, through a variety of analytical and methodological approaches (Kimmel et al. 2005).

Critical Studies on Men arise from several key challenges to and critiques of men, primarily from feminism, but also gay and queer scholarship, and men's responses, particularly men's profeminist responses to feminism and debates on gender relations; they are part of the broader body of critical theory. However, in focusing on men there is a danger of re-excluding women. In its simplest form, the reference to "Critical" in CSM concerns the question of power, usually men's power. While there are many ways in which power functions, flows and re-forms, it is difficult to avoid the fact that in most societies, men are structurally and interpersonally dominant in most spheres of life. This may be called patriarchy, or historically differentiated patriarchies. Such an approach does not downplay the differences amongst and between men in terms of age, class, ethnicity, sexuality, and many other differences, including their relations with women. Rather it emphasises the complex interplay of unities and differences between men. Men vary massively in their power in relation to women and children and their locations within power relations.

This broad approach seeks to "name men as men" (Hanmer 1990; Collinson/Hearn 1994). It asks such questions as: what makes a man? What makes a real man? What is masculinity? Do men have a sex/gender? How does the social construction of men and masculinities affect science, research, academia and other activities? Men are gendered too!

Applications: Men, gender and excellence in science

So, what has all this to do with science? (Hearn 2004) Is it odd or obvious to talk of men in science, and men of science? The history of science is often presented very much as a history of men, but without noticing the gendering of men in this account; even now the notion of scientist may be taken for granted to indicate a man scientist.

Most analysis and policy development in research and academia, and often even that concerned with gender, continues not to gender men explicitly and not to make explicit men's part in reproducing gender inequalities. There has been growing recognition of the importance of critically focusing on men in academia as part of its gendered analysis. The organisations of science and higher education have certain characteristic

features. They remain incredibly hierarchically gender- and age-differentiated institutions, often with a more fixed layer of professorial men, and shifting, temporary populations of women and men members. The higher the status of the university, there is often a greater proportion of male academics to be found working there, especially at high levels. There are sharp gender shifts from the levels of postgraduates and contract researchers to higher levels in academic hierarchies. Many academic areas, especially in science and technology, remain at the high, particularly the professorial, levels very largely male, functioning as male oligarchies. Moreover, these organisations often have a specific combination of formality and informality, along with intense emotional dynamics. They are also slow to change, especially at senior levels. The construction of “excellence” is part of this organisational world.

Seeing excellence through the lens of gendered men involves recognising a number of levels of analysis. First, the historical homogeneity or homosociality of research management has been endemic in universities. Second, universities can be seen as sites of men’s specific organisational or departmental cultures, including the ‘gentlemen’s club’, ‘the family’ (patriarchal, paternalist or otherwise), ‘the men’s room’, ‘the boys’ gang’ (sporty, intellectual, hi-tech). Within different disciplines and departments, there are different gender climates and cultures, in terms of history; tradition; social organisation; curricula; relations between staff, staff and students, and students; awareness of gender. The greater the domination of men, the more the site is likely to be presented as gender-neutral; the more (male) homosocial, the more it may appear to those there as a gender-neutral environment. Third, specific interconnections between men’s power and managerial power have been analysed in university settings. Martin (1996) has catalogued how men maintain managerial power, especially in appointment and promotion process. Martin (2001) has also examined how ‘normal working practices’ may be conflated with men’s working practices. Fourth, universities can be understood as sites in which different specific masculinities are produced and reproduced. Collier (1998) has outlined some of the ways of being both men and academics, for example the Sexual Predator; the Nutty Professor; the Administrator; the New Entrepreneur; the Young Man in a Hurry; the Infantilised Intellectual; even the Profeminist.

These processes in turn contribute to constructions of excellence in science. Gender relations, gender biases, gender inequalities in the construction of “excellence” can occur in terms of:

- Individuals: Who does what in science, including women's participation
- Organisations: Gender in organisations, organising, and cultures of science
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First, the individual assessment and selection of people may be gender biased. This may mean scoring men higher than women. Eliminating bias in assessment and selection is central to the idea of 'quality'. Research has been conducted on the differential letters of recommendation about women and men (Madera et al. 2009). A more complex process is raised by a study of publication records of 168 life scientists in ecology and evolutionary biology, showing clear discrepancies in publication rate between men and women in early careers, with consequences for subsequent citation. The use of the apparently neutral h index as a measure of research performance (number of papers published, h, by a scientist where each paper has received h or more citations) favours men. The h index is highly correlated with quantity of research output; women scientists assessed in this way are likely to suffer in comparison with men (Symonds et al. 2006). Indeed men still tend to publish more papers than women, a trend consistent across scientific disciplines, even after accounting for mitigating factors (Ding et al. 2006).

Second, there are gendered organisational biases, for example, in the organisational cultures of science. These may include the undervaluing of women's social capital, leadership and networks. Bias in the organisation of the work of science may result in an unequal division of responsibilities and the awarding of status, with men claiming top leadership and gatekeeping positions. An especially important issue is the widespread nature of men's homosociability and cultural cloning (Essed/Goldberg 2002) in science and research, that is, reproducing more of the same, by gender, ethnicity, organisational culture. Homosociality refers to men's greater valuation of men and preference for men and men's company. As Lipman-Blumen (1976) put it, "men are attracted to, stimulated by, and interested in other men"; "Men can and commonly do seek satisfaction for most of their needs from other men". Networking is crucial to many scientific careers, and thereby the social construction of scientific excellence. Men's cultures in university and science evaluation organisations need to be open to explicit examination, discussion, critique and change.

Third, there are gender biases in knowledge and knowledge production, and in research processes when constructing hypotheses, selecting methodology, and disseminating results. Examples may include assuming the same impact for women and men in studies of physiology, or taking male body as norm and women as deviations from that norm. Another example is from engineering, where the car seat belt was initially designed for men and not for pregnant women, using “male” crash test dummies rather than “pregnant dummies” (Schiebinger/Schraudner 2011). Examination of anatomy texts for the last 100 years shows that nearly all images, figures and explanation use ‘male’ as the norm, even when discussing female properties. In radiation studies, the Standard Man (middle-age white US American) is used to calculate radiation doses for women and men, despite the fact that women need much lower radiation doses than men. Cardiovascular disease has often been presented as a male disease, but is in fact a major disease of women; while osteoporosis is sometimes seen as a female disease, but is a major disease of later male life. Until the late 1990s it was often assumed that results will apply equally to men and women and women were routinely excluded from studies, but now evidence shows that in many areas this assumption was wrong, for example, regarding pain.

As reported in the recent review prepared by the EU genSET project (2009, 10):

In the field of pain research, at least 79% of animal studies published in the journal “Pain” over the preceding 10 years included male subjects only, with a mere 8% of studies on females only, and another 4% explicitly designed to test for sex differences (the rest did not specify). Given the substantially greater prevalence of many clinical pain conditions in women vs. men, and growing evidence for sex differences in sensitivity to experimental pain and to analgesics, a consensus report recommended that all pain researchers consider testing their hypotheses in both sexes, or if restricted by practical considerations, only in females. It is invalid to assume that data obtained in male subjects will generalize to females (Greenspan 2007).

Women have been frequently excluded from drug trials, so that in some cases withdrawal of drugs has had to occur later. The net effect of such gender biases in medical research and education is that some women suffer unnecessarily and die (Schiebinger 1999).

Actions: What can be done?

The gendering of universities and science institutions is as much about men as about women. It is important to examine men’s constructions and constructions of men and masculinities within evaluations of scientific excellence and academic merit. This applies to both men’s part as evaluators and applicants, and more generally throughout the process, in gendering: the evaluator(s); the chairs of evaluating bodies; the

evaluating institutions; the applicant(s); the applicant institutions; the proposals; the criteria used in evaluation; the decision-making process; the outcomes. There is not just one quick fix to be had here.

According to “Science Policies in the European Union: promoting excellence through gender mainstreaming” (ETAN 2000), the principles of gender mainstreaming in scientific institutions are: building equality into the culture and organisations; treating employees as whole persons; respect and human dignity (anti-discrimination); participation and consultation; and visioning. The main tools for realising these goals recognised by the Report are: gender equality indicators; gender proofing/gender impact assessment; building ownership of gender equality within all levels of the organisation; awareness-raising; and training. The ETAN Report promoted equal treatment and positive action combined with mainstreaming gender quality, with recommendations on gender monitoring for employers; member state laws on gender balance in decision-making; member state laws on access to public records; and removal of laws that impede women in scientific careers. The mix between gender mainstreaming, equal treatment and positive action needs development, including gender mainstreamed policy and practice on women in the student body, academia, scientific academies, funding, peer review, and policy-making (Osborn 2001). Science policy development needs to build in regular evaluation of successes and failures of both mainstreaming policies and specific actions; the development of gender expertise in science and research organisations; and the maintenance of gender watchdogs (Husu 2001).

What changes would be likely to occur if gender mainstreaming were to be more fully applied and developed in research and science? Some of the more important include:

- more direction of research funding to fields in which women are more represented, less for fields in which men are more represented;
- more research funding for research by women, so less for men; • more consideration of the gendered aspects of research, including use of sex/gender analysis in scientific knowledge production;
- more gender training for current and future researchers;
- holding senior management – in funding agencies, hiring and promotion, and journal editorships – accountable (Schiebinger/Schraudner 2011), with more

involvement of women in research funding decisions and as key research gatekeepers of excellence, so less involvement of men in such decisions and as gatekeepers of excellence, for example, as so-called 'independent' chair of committees.

There are many possible organisational actions following this perspective:

- considering that if there are more women in academic evaluation, then there will be less men there, and putting this on agendas for discussion;
- setting local and national targets for numbers of men in academic evaluation and chairs thereof (such as 50%);
- assisting the creation of a minimum mass of women in academic evaluation;
- changing organisations and academic evaluation, including men's unequal sponsorship of men and women;
- changing men who are in academia and academic evaluation to be anti-sexist;
- ensuring that men doing science evaluation have academic and professional knowledge on gender and power issues;
- changing men's research and teaching, including critical research and teaching on men and masculinity;
- reviewing long hours work culture;
- seeking temporary solutions to intractable problems;
- changing the quantity of men in leadership and the quality of men's leadership;
- changing dominant models of masculinity in academia more generally;
- challenging assumptions of gender-neutrality and gender-absence within the supposedly 'objective' mainstream and in scientific excellence;
- changing men at home: giving more priority to domestic/caring responsibilities;

- attending to issues of sexuality, sexual harassment, bullying and violence through changing policies and practices;
- attending to men's intersectional relations, for example, to age, class, sexuality;
- linking resource allocation to gender equality: for example, structuring training budgets in evaluation for men in inverse proportion to the ratio of men to women;
- seeking how men can assist in not blocking equal opportunities policies;
- asking men where they stand.

Men's practices in science can be seen as paralleling closely how men may respond to gender equality more generally: from outright rejection and hostility, to welcoming; from anti-feminist to unhelpful to facilitative to profeminist. Some men seek to act against gender inequality, support women, appoint feminist women, and critically examine men's own work, stopping various silences. Men move along such dimensions in gendered scientific practices according to political and organisational pressures and conditions. Explicit attention needs to be given to these issues in gender training, along with questions of male identity; men's prejudices; change in men's attitudes and behaviours; how organisations reproduces dominant male values; and ways of changing research organisations in these and related respects.

To reduce gender bias in the definition and measurement of scientific excellence involves all participants, both men and women, in the process. It involves not only women, but also changing men. There should be excellence in the practices of definition and measurement of scientific excellence, and not only excellence in science itself. The definition and measurement of scientific excellence is part and parcel of the very activity of science. Gatekeeping operates not just from the managers of research funds but all the time, every day (Husu 2004). Behaving in certain ways, as an academic, manager, administrator, teacher, for example, senior men's differential sponsorship of men and women or treating as gender-neutral clearly gendered situations, itself produces 'results', research, theory.

"Excellence" is not neutral. Informed, critical evaluation is needed at individual, team, departmental, institutional, national and transnational levels. In each case, it is necessary to ask: how do gender, women and men figure? What is the impact on and of

gender equality? Consistent leadership and transparent processes against gender inequalities and biases are required, including sex/gender analysis in knowledge production, to change men's privilege in science. Gender equality enhances excellence, Gender equality means changing men!

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