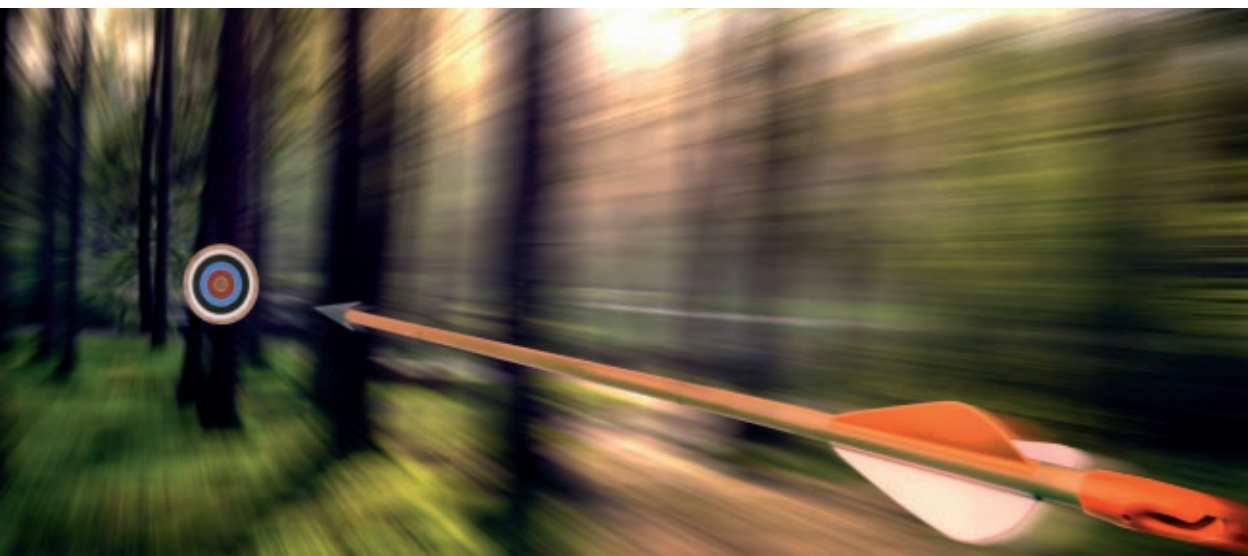




Vetenskapsrådet

## REACHING FOR SCIENTIFIC EXCELLENCE IN GENDER RESEARCH



# **REACHING FOR SCIENTIFIC EXCELLENCE IN GENDER RESEARCH**

## **Conference Report**

**Editor: Hillevi Ganetz, PhD, the Swedish Research Council's  
Committee for Gender Research**

REACHING FOR SCIENTIFIC EXCELLENCE IN GENDER RESEARCH

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# PREFACE

One of the tasks of the Swedish Research Council is to support gender research and promote gender perspectives in research. The Swedish Research Council has appointed an interdisciplinary committee, the Committee for Gender Research, which has a proactive and policy making role. The Committee for Gender Research identifies problems in the area of the integration of gender studies and also issues related to scientific quality and internationalization.

In October 2005, the Swedish Research Council's Committee for Gender Research, in collaboration with the Swedish Secretariat for Gender Research, and the Nordic Institute for Women's Studies and Gender Research (NICK), organized the conference "Reaching for excellence in gender research" in Saltsjöbaden. The present publication presents the lectures and discussions from the conference.

In European research policy, there is a growing emphasis on support of scientific excellence. It is therefore vital, both for researchers and for those responsible for assessing the quality of research applications, to critically examine – and actively help to define – the concept of "excellence". In the conference we wanted to build on conclusions presented in the EU report *Gender and Excellence in the Making* (2004) and to make progress in developing the quality and excellence of gender research.

How is the concept of excellence applied, especially in relation to gender research, in the various disciplines and research organizations that currently mediate research funding? What advantages and problems come from our current interpretation of the term excellence? How can scientific excellence be developed among scholars, and among gender scholars in particular?

The Swedish Research Council's Committee for Gender Research wishes to express our gratitude to the lecturers and all the participants. Our hope is that the discussion will continue and that it will make easier both the integration and the internationalization of Swedish gender research.

**Gunnel Gustafsson**  
*Deputy Director General*  
*The Swedish Research Council*

**Britta Lundgren**  
*Chairman*  
*The Swedish Research Council's*  
*Committee for Gender Research*

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# INTRODUCTION

The concept of excellence has been a tremendous success in academia, and in the Swedish Committee for Gender Research we were curious to know whether this concept would be applicable in gender studies? Can we be excellent? Or have we already reached the level of excellence that is possible because of our long-term pioneering work, originality, reflexive criticism, great impact on society, culture and politics, research grants and world wide known scholars? Maybe the title of the conference should not have been “Reaching for Scientific Excellence”, but rather “Scientific Excellence in Gender Research”. All the same, we chose a more modest way of reasoning and kept the title “Reaching for...”.

It is important to remember that the concept of excellence cannot be seen as something external to its users. When a certain researcher, research project or an institute is valued as excellent, it is a procedure within well established social relationships and different knowledge hierarchies inside the scientific community. This does not mean that it is wrong or that the evaluation procedure is bad, but it implies that we have to learn about cognitive reasoning, about notions that we might take for granted and that serve as guidelines in research councils, among university managers or the peer-groups that make the decisions.

The concept of excellence runs the danger of being “black boxed”, which means that it is very hard to question, very hard to challenge and very hard to change. But as certain as the construction of an aeroplane – with its black box containing hidden truths about its journey – the concept of excellence is at work in gender research today. If excellence is becoming a black box, and if this conference reveals more of that hidden dimension, we have been successful.

## **There were three major questions for the conference:**

- 1) How are the concepts of scientific quality and excellence applied within various fields of research, including gender research?
- 2) What are the advantages and/or problems caused by the present understanding (focusing on gender research)?
- 3) How are the concepts of scientific quality and excellence developing within the research community and among gender researchers?

**Britta Lundgren**

*Professor in ethnology, Head of Umeå Advanced Gender Studies at Umeå University and chairman of the Committee for Gender Research at the Swedish Research Council.*

# THE CONCEPT OF EXCELLENCE IN A HISTORY OF SCIENCE PERSPECTIVE

Sven-Eric Liedman

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The concept of excellence in science is at the same time very old and of recent origin. Scientific endeavours have always been valued in different ways; but to talk of “excellence in science” as a homogeneous concept, open to different kinds of evaluations and even quantifications, is a novelty.

To study excellence in the history of science is above all to look at how scientific work has been criticized in different times and milieus, but also to see how the history of science has itself paid more attention to some results than to others; in short, what we have to look at is what is remembered in the textbooks in the history of science and why.

It is important to keep this in mind when comparing what is said about excellence today and what was said yesterday and the day before yesterday. Present-day rankings of different kinds have almost no direct classical counterpart. In history, we have normally the benefit of hindsight; but this benefit is only partly accessible in relation to excellence in science.

Another important introductory remark must be made. We learn from history that different kinds of prejudices are present in science too. Scientists are only ordinary people, and their institutions are made by men. The history of science is full of examples of prejudices about gender, race and religion, and the history of science itself is not free from such prejudices. Many important contributions have been forgotten by history, and often oblivion is marked by the same kind of prejudices.

Recent research has demonstrated, for example, how many important women scientists have been neglected by historians. We have no right to think that we – in our evaluations of contemporary research – are free from these kinds of prejudices. We must always have a critical attitude to what is presented as objective results. Something important might be forgotten, something mediocre hailed as being of highest quality.

After these introductory remarks I will give a short sketch of history. Ideas of what is good and bad belong to competitive situations where different directions, schools or theories struggle for attention, appraisal and, most of all, resources. In ancient Greece we can find example of such competition. In the writings of Aristotle – to take just one example – we find a vivid po-



lemics directed most of all against the Platonists. Aristotle had founded his own school, Lykeion, whereas the students of Plato still remained in Plato's old school, the Academy. All schools were eager to have the elite among their students, the real intellectual aristocrats (from Greek *aristos*, the best).

But we also find examples in antiquity of kings and other mighty persons who tried to found first-class scientific and scholarly institutions. The most prominent example is of course the Museion in Alexandria, where resources given by the Ptolemeian kings made it possible for excellent people to gather in the library and other institutions. Posterity can also see how seminal this institution was. Among the heads of the Museion were such people as Eratosthenes, an excellent natural philosopher who in a remarkable way made an almost exact calculation of the dimensions of the Earth. Other first-class contributions were made by such an eminent scholar as Kallimachos, who was also the head of the Museion during a period.

The Museion is probably a better example of cooperation than of competition, in the way that excellence almost always is the result of cooperation. Nothing is known about the criteria for becoming a member of the Museion, but can surmise that it was an honour to get a position there. People were coming from distant places in order to work there.

In fact, the Museion did not have any real counterpart for many, many years. Some important schools of different kinds were founded in the Islamic world, most of all the Quran Schools at the great mosques, in the Christian world and at the universities in the 12th and 13th centuries. There, an idea of excellence can be said to have developed, but this idea was very far from that typical of the scientific world today. The standard was classical, i.e. there was a definitive pattern of excellence that could be found in ancient times. This meant that there were no living scholars who could reach the intellectual height or greatness of the old paragons, be it Plato, Aristotle or Ptolemaios. In medicine, Hippocrates had to be read by future doctors along with Galen and the only newcomer, the Iranian scholar Ibn Sina (called Avicenna) from the early 10th century. Ibn Sina wrote in Arabic, but his texts were translated into Latin. The best scholars were those who came closest to the classical standards or – as we who are living in modern times would prefer to say – those who could develop fruitful ideas on the basis of the old paragons.

There was no idea of scientific progress, which is so central to us; what man could ever hope to know had been described in classical times. The ideal of scientific progress emerged only slowly. From this time on, we have a chance to identify with the dominant ideas of excellence in science. The universities were not the places where such conceptions belonged – more so, the new academies that developed in the 16th, 17th and 18th centuries in

Italy, Britain, France, Germany, Russia, and Sweden. In the academies, it was always self-evident that anything that was presented ought to contain some absolutely new knowledge, some knowledge that had not been presented earlier.

The Royal Society in London and the Académie des Science in Paris became the two paragons for all other academies of science. In the English case all the fellows of the Society were seen as Gentlemen of Science, which means that there was a certain status connected to the fellowship. *Mutatis mutandis*, the same can be said about the other academies.

The academies published transactions and proceedings of different kinds. Originally, it was not difficult to get published there, but after a few decades the standards became higher. There was a certain status connected with publication.

The proceedings were one of the sources of the modern flora of scientific and scholarly journals. But there was also another one, still more direct. This was scholarly correspondence. Just to take one name, the German Gottfried Wilhelm von Leibniz was seminal in this process. Leibniz, who mostly wrote in Latin and French, can be seen as the hub of the scientific and scholarly world around 1700. His letters were circulated among many others than those to whom they were addressed, and hence they were read by many scholars.

As soon as science and scholarship were seen as progressive, men of science started to struggle about priority. There is a well-known tendency in the history of science that important new results are presented by two or more scientists almost simultaneously. But who was first? There is much envy in this world – one must not idealize it. It was also a milieu where women, who were prominent contributors in the sciences, were made invisible, or almost so. In fact, they could play an important part for their contemporaries, but very soon they fell into oblivion because of a very male selection made by the historians of science. A good example is Anne Conway, an important participant in the philosophical and scientific debate in the 1660s and 1670s but then soon forgotten. Only in the last few decades her real importance has been clarified, along with that of many other women.

The university system was reformed in the early 19th century – first of all in Prussia, where the architect of the reform was Wilhelm von Humboldt. At Humboldtian universities, research became a duty for all professors, and in fact also for fully trained students. Earlier, research was not compulsory, and only lectures and examinations were compulsory for professors. At the Humboldtian universities, laboratories and seminars were necessary tools for research.

In this way, universities became a more competitive milieu than earlier. Some university professors become famous, others not, and some were seminal and good enough to find excellent students who came from far away places to their seminars or laboratories. Some universities were seen as more prestigious than others.

The scientific journals got a form where we can find ourselves at home. It became more and more important for scholars and scientists to publish monographs and articles.

In the 20th century, with the enormous increase in the number of students and universities, scientific journals and scientific awards, the trend not only continued but accelerated – especially after the Second World War. There were more or less implicit ideas of eminence in the scientific world. Now the mass media also started to play a part – science made its breakthrough in the popular imagination; Albert Einstein was seen as the greatest scientist all categories, at least after his popular breakthrough in 1919, after the eclipse of Mercury. Women, until then a small minority within academia, became more numerous; today they form a majority – at least among students – in many parts of the world. But almost everywhere the majority of professors are still men. The proportions of Nobel Prize winners in terms of gender are well-known, where women make up a tiny minority.

Evidently, there was a rather widespread notion of scientific excellence already a few centuries ago. However, it is only in the last few decades that there is a real ranking of excellence. It started as a ranking of universities in the Anglo-Saxon world, and in Britain, in the hands of Prime Minister Thatcher, University ranking became an efficient tool to close down low-ranking universities, or to cut down their resources to a minimum.

It also became important to rank departments, groups of scholars and even individuals. And we may ask – what is the problem with this? Excellence is nothing new. New is, however, the idea that quality can be easily quantified. Excellence is a quality. One must quantify a quality, and how is this to be done? Yes, we all know it: by citation indices, by evaluations made by colleagues, by awards etc. There is a system: a publication of an article in *Science* or *Nature* give a certain number of points, in a more peripheral journal substantially fewer, for so-and-so many citations another amount of points, and for a Nobel Prize extremely many points.

I agree that such systems may be of help for hiring people or even for allocating resources. But if the system is dictatorial, it might be disastrous. There are also substantial differences between different branches of science; it may be appropriate for some natural sciences, but mostly they are inappropriate for the humanities, where there are not enough interesting quantities so that one can quantify quality in any reasonable way. Here

high-ranking normally means “known by colleagues and highly esteemed by them”. Sometimes you must let quality just remain a quality and not try to find some number for it.

And even in the sciences, it might be harmful if the ranking systems become too influential. My favourite example is Barbara McClintock, the prominent American geneticist. Her theories about the heredity in corn did not fit the absolutely dominant trend in genetics and microbiology, where the revolution caused by Watson’s and Crick’s double helix set the agenda. McClintock was totally marginalized and hired only by extremely low-ranking institutions. She had to publish her research results in marginal journals, and if paid attention to at all, she was seen as latecomer whose ideas belonged to the past. According to herself, the fact that she was both a maverick and a woman contributed to her marginality. But, finally, when she was almost in her seventies, the importance of her research was appreciated by influential colleagues; she was “discovered” and eventually published in a decent way, duly quoted almost everywhere, and awarded more and more prestigious prizes, including the Nobel Prize – at the age of 81!

This is a moving Cinderella tale – but also a reminder that excellence may be inaccessible to all those quantitative measures that are used for ranking scientific endeavours. There are many Cinderellas around today, and we cannot be sure that they will ever be discovered. Hence, we must be aware that too strict a system of evaluation may be an extra obstacle to them.

# EXCELLENCE: A QUESTION OF GENDER?

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The representation of women in the sciences changes much slower than one might expect in relation to women's general achievements in the educational system. Women are still under-represented in the academic world. Only 15 percent of professors in Europe are women (European Commission 2003: *The She Figures* 2003). In the USA 25 percent of professors are female.

The career paths of men and women in almost all branches of the sciences have been investigated with the goal of unraveling the complex interactions between institutional arrangements and personal preferences. These investigations have produced new knowledge and understanding of the "gender of careers." (Harding and McGregor 1995; Sonnert and Holton 1996; Valian 1998; MIT 1999; European Commission 2000; Etzkowitz et. al 2000; Xie and Schauman 2003; Probert 2005).

One issue that remains central to current research is whether the achievements of men and women are assessed on the same basis. And is there evidence of a gender bias in the definition and measurements of scientific excellence? We define gender bias as the often unintentional and implicit differentiation between men and women that situates a person of one gender in a hierarchical position above another as a result of stereotypical images of masculinity and femininity, thus steering the assessment and selection process or the gendered structure of the scientific system. In this case, I use the concept of "measuring scientific excellence" broadly, understanding it to include the assessment of products and producers in review processes for papers, research proposals, and the selection of candidates for prestigious positions.

## Framing the problem

In his seminal work on the ethos of science, Robert K. Merton (1942) states that for science to be fertile and productive, scientists must be judged by their work alone, winning status and membership within the scientific community solely on this criterion. From this perspective, the scientific

forum is the institution most capable of evaluating the results of research. Accordingly, the quality of research proposals and products should be assessed by peers.

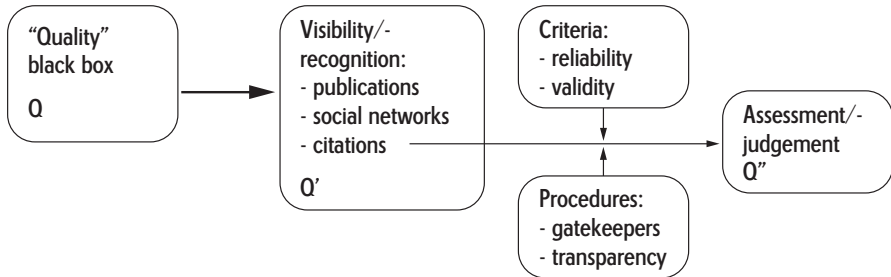
Disinterestedness and objectivity are cornerstones of the scientific ethos. As early as 1976 Bourdieu called this claim of objectivity and disinterestedness one of the strongest myths of contemporary science (Bourdieu 1976). According to him this myth functions to hide specific interests of individual scientists and scientific communities. The idiosyncratic and situated character of assessment systems is one of the major flaws in the expected neutrality of judgements. Three decades later, however, we still see a strong “neutrality” claim in evaluation systems, which are anchored in peer reviews. Consensus seems to argue that this system – however imperfect – is the best available.

In 1997 Wennerås and Wold published their groundbreaking *Nature* article on sexism and nepotism in the peer reviews of research grant applications to the Swedish Medical Research Council (MRC). The article showed that the peer review system is not as “neutral” as it claims to be. Male applicants and researchers who had links to one of the evaluators were more successful in their applications to the MRC for post-doctoral research grants than other applicants. Even though the quality of the proposal was an important factor in assessing the scientific competence, gender and connections with one of the members of the evaluation committee influenced the assessment as well.

Wennerås’ and Wold’s results questioned a central belief and the validity of scientific selection procedures. A science ruled by non-scientific judgements concerning the performance of scientists lacks in objectivity. In this context, the supposed attribution of “excellence” primarily to male scientists becomes problematic for all scientists. By its nature, scientific excellence is difficult to grasp. It is neither a “universal fact” nor a “natural given”. It would be misleading to treat excellence as a simple, easily measurable characteristic, like height or speed. Instead, it is a composite of many skills – carefulness, originality, clarity, complexity etc. – achieved through a process of training and networking, of accumulation and resources.

Moreover, before being judged and assessed, these qualifications must lead to visible and acknowledged achievements. The assessment of excellence depends on the importance that is attributed to each of these characteristics. It is a social, highly contextualized construction, and therefore vulnerable to different kinds of bias. According to gender specialists, this situation is precisely where the influence of gender enters the picture. The figure below gives an idea of the complex relationship between “quality” of an individual – the black box – and the outcome in measured “excellence.”

The diagram below gives an idea of the complex relationship between “quality” of an individual – the black box – and the outcome in measured “excellence”. Gender bias can exist in each one of these aspects and in transitions from one stage to the next.



## Criteria

Quality is almost never measured directly. It is measured with indicators – representations of quality that are believed to reflect scientific quality optimally. Bibliometric data is used as a proxy for excellence, quality, and ability. Assessing the reliability of judgements requires first an understanding of the relationship between the actual quality of individual researchers (Q) and the representations of scientific quality in publication lists Q'. This relationship could be weaker for women than for men, for several reasons.

### Gender differences in productivity

Since the 1970s many studies have addressed the issue of gender and publications, the so-called “productivity puzzle” (Zuckerman 1987). On average, women tend to publish fewer articles than men (Long 1992; Zuckerman 1987) but – according to Schiebinger (1999) and Valian (1998) – with each paper being more substantive. Papers published by female scholars are cited more frequently than papers written by male scientists who are more “productive”.

Recent studies show that productivity is related to academic rank. The lower productivity of women can be explained by the fact that their professional ranks tend to be lower than are those of men. In addition, there are important differences between the scientific fields in terms of women’s participation and in terms of publication rates and citations. Discipline-



specific publication traditions can explain the existing gender differences in productivity. Within the same category, there is apparently no significant gender difference (Bordons et al. 2003). If numbers of publications are corrected for position, the difference becomes minimal; full professors (of whom the majority is men) produce more publications in less time than juniors and people who have temporary contracts. In addition, the stereotypical idea that this is generally related to women's family responsibilities has not been confirmed (Fox 2005).

### More is better?

A scientific career presupposes long working hours, which creates a rather lopsided work–life balance that is difficult for both men and women to attain. The ideal type is essentially a male model of practice, full-time devotion, emphasis on early achievement, and exclusive identification with science, without any other social obligations. The way scientific excellence is measured creates a specific atmosphere in which competition leads to high numbers of publications – but not necessarily to good science. Although 50 percent of the part-time scientists in the UK are male, the female scientists who work part-time are more likely to experience negative effects on their positions; they are “time poor” (Rees 2004). In general, male part-timers are approaching retirement and thus do not fear for their careers. In fact, they are “time rich”. Good indicators of excellence should take into account the fact that time-poor people can still be excellent scientists, and should measure scientific output not only in cumulative terms, but also in relation to the amount of time devoted to research.

### Research agenda

Conducting good research is not enough to become acknowledged as a good researcher. It depends largely on the chosen research topic. Some research issues are more likely to lead to “excellent” positions than others. Some fields and issues are marginalized, and researchers engaged in issues that are not on the research agenda run the risk of under-evaluation.

As a social institution, science has traditionally been dominated by (white and socially privileged) men, and their views of what is important and relevant (European Commission 2003: *The She Figures* 2003). We can expect that this fact has a strong impact on what is going to be the dominant discourses and established research agendas and paradigms. “The scarcity of women in senior positions in science inevitably means that their individual and collective opinions are less likely to be voiced in policy and



decision-making processes” (European Commission 2003: *The She Figures* 2003:73). This also means that women’s contribution and influence in setting the research agenda is limited. If we welcome more women in science, it is necessary to reflect on epistemologies and research topics.

This raises the question whether women have specific research interests. Addis (2004) suggests that the interests of men and women do not overlap completely. In for example the economic sciences in Italy, women appear to be more interested in social issues such as development economics or in specific methodologies such as narrative analysis. According to Allmendinger and Hinz (2002) the interest that female scientists show in gender issues is the main reason for their relatively low scores in research applications.

Bibliometrics may be gender biased if the measurements and underlying criteria reflect the scientific activities of men and women differently. A citation index that focuses primarily on the natural sciences and covers only 20 percent of the journals in the social sciences and humanities has limited validity as a measure for the achievements of female scientists. The citation may reflect practices so different as to render the counting meaningless or biased.

## Social production of excellence

Talent and merit are not the only factors that determine whose papers will be published or whose application will be approved; these judgements are also affected by social capital (by which I mean access to resources and positions of power), especially in the current situation of overproduction of publications. Publications alone are insufficient to distinguish oneself as a scientist; publications must be read, discussed and cited. A work needs to be visible to be communicated (Mahlck 2001).

Participation in academic networks is important, and having the right formal and informal connections is apparently crucial to a successful career trajectory (Kemelgor and Etzkowitz 2001). Scientists pay most attention to well-known or already established researchers. Due to a lack of social capital women scientists run the risk of under-citation.

From this point of view, citations are by-products of participation in larger networks as well as measures of intrinsic scientific quality. They do not mirror “quality” in an unambiguous way but rather represent a mixture of “quality” and “social embeddedness”.

# Procedures

## Gate keeping

According to the ETAN report, gatekeepers are generally middle-aged male academics. Women are clearly under-represented as gatekeepers, due to their under-representation in the power structures of academia. There is some evidence that there is a gender difference in views of interesting research (Allmendinger & Hinz, 2002; Addis, 2004). Women seem to be more sensitive to socially relevant issues and more focused on gender issues. From this point of view, we can expect an unintended influence on the success rate of female scientists.

## Stereotyping, transparency, and accountability

A central question is whether similar achievements are assessed differently for men and for women. Social psychological research shows that gender is clearly a factor in assessment procedures, largely because of unintended stereotyping (Banaji & Greenwald 1995). Several experiments on gender-based double standards conducted by Foschi clearly indicate a double standard in assessment processes (Foschi 1996 and 2005). These gender-biased judgements appear to be pervasive: both men and women apply double standards when working as evaluators of themselves and of others.

Further – and more importantly from a strategic point of view – Foschi's research shows that the effects of double standards decreased when the assessors are held accountable for the results by making the assessment public and known to the assessed. Providing explicit standards rather than allowing assessors to generate and use their own criteria reduce the gender bias. Double standards flourish when assessments, assessors, and criteria are not made public, thus leaving much room for subjective and uncontrolled judgements.

# Conclusion

The central premise of the evaluation process – the best will win – is not fully realized. There seems to be a discrepancy between discourse and actual practice. Although meritocracy and innovation are at the heart of the scientific value system, many of the elements in the actual functioning of the system cause an unintentional tendency towards conservatism (Rip 1997).

Moreover, excellence is not a personal trait, nor a direct reflection of merit. It is also partly a product of a stimulating environment, of encouragement and a well functioning network.

What needs to be done? Firstly, we need a better understanding of the dynamics that take place during assessment and selection. We need more research on psychological and sociological aspects of gender-specific career orientations and on competition in academia. Furthermore, we need to design a multifaceted action plan for five to seven years on mentoring, assessors' training, role models, transparency and accountability. Most effective would perhaps be to give very concrete rewards for those departments and organizations that are successful in attracting more women in senior positions. Change has to occur at both individual and institutional level. If we want to realize meritocracy – and I am convinced that we do – we need to abolish all these unintended biases and realize women's potential as much as possible. And we need to do it quickly.

## References

- Addis, Elisabetta (2004): "Gender in the Publication Process: Evidence, Explanation and Excellence" in *Gender and Excellence in the Making*, 93–101, Brussels: European Commission.
- Allmendinger, Jutta & Thomas Hinz (2002): "Programmierte (Un-)Gleichheit? Geschlechtsspezifische Chancen bei der Bewilligung von Forschungsanträgen" in *Zeitschrift für Soziologie*, 31, 275–293.
- Banaji, Mahzarin R. & Anthony G. Greenwald (1995): "Implicit Gender Stereotyping in Judgments of Fame" in *Journal of Personality and Social Psychology*, 68, 181–198.
- Bordons, María et al. (2003): "One Step Further in the Production of Bibliometrics Indicator at the Micro Level: Differences by Gender and Professional Category of Scientists" in *Scientometrics*, 57, 159–173.
- Bourdieu, Pierre (1976): "Le champ scientifique" in *Actes de la Recherche en Science Sociales*, 2, 3.
- Brouns, Margo & Elisabetta Addis (2004): "Synthesis Report on the Workshop" in *Gender and Excellence in the making*, 11–32, Brussels: European Commission.
- Cole, Stephan (1998): "How Does Peer Review Work and Can It Be Improved?" in *Minerva*, 36, 179–189.
- Etzkowitz, Henry et al. (2000): *Athena Unbound: The Advancement of Women in Science and Technology*, Cambridge: Cambridge University Press.
- European Commission (2003): *The She Figures 2003*, Brussels: European Commission.
- European Commission (2000): *Science Policies in the European Union: Promoting Excellence Through Mainstreaming Gender Equality* (ETAN report), Brussels: European Commission.
- Foschi, Martha (1996): "Double Standards in the Evaluation of Men and Women" in *Social Psychology Quarterly*, 59, 237–254.

- Foschi, Martha (2005): "Gender and the Double Standards in Competence Assessment" in V. Maione (ed.) (2005): *Gender Equality in Higher Education: Miscellanea. Third European Conference Genoa*, 13–16 April 2003, 140–148, Milan: FrancoAngeli.
- Fox, Mary F. (2005): "Gender, Family Characteristics and Publication Productivity among Scientists" in *Social Studies of Science*, 35, 1, 131–150.
- Harding, Sandra & E. McGregor (1995): *The Gender Dimension of Science and Technology*, Paris: UNESCO.
- Kemelgor, Carol & Henry Etzkowitz (2001): "Overcoming Isolation: Women's Dilemmas in American Academic Science" in *Minerva*, 39, 239–257.
- Latour, Bruno (1987): *Science in Action: How to Follow Scientists and Engineers Through Society*, Cambridge/Massachusetts: Harvard University Press.
- Long, J. Scott (1992): "Measures of Sex Differences in Scientific Productivity" in *Social Forces*, 71, 159–178.
- Mahlck, Paula (2001): "Mapping Gender Differences in Scientific Careers in Social and Bibliometric Space" in *Science, Technology and Human Values*, 26, 167–190.
- Massachusetts Institute for Technology (1999): *A Study on the Status of Women Faculty in Science at MIT: Women Faculty of Science*, Cambridge/Massachusetts: MIT.
- Merton, Robert K. (1942): *The Sociology of Science: Theoretical and Empirical Investigations*, Chicago: The University of Chicago Press.
- Probert, Belinda (2005): " 'I Just Couldn't Fit It In': Gender and Unequal Outcomes in Academic Careers" in *Gender, Work and Organization*, 12, 50–73.
- Rees, Teresa (2004): "Measuring Excellence in Scientific Research: The UK Research Assessment Exercise" in *Gender and Excellence in the Making*, Brussels: European Commission, 115–120.
- Rip, Arie (1997): "Higher Forms of Nonsense" in *The Future of the Peer Review System*, 27–52, The Hague: NWO.
- Sonnert, Gerhard & Gerald Holton (1996): *Who Succeeds in Science? The Gender Dimension*, New Brunswick, N.J.: Rutgers University Press.
- Schiebinger, Londa (1999): *Has Feminism Changed Science?*, Cambridge/Massachusetts: Harvard University Press.
- Valian, Virginia (1998): *Why So Slow? The Advancement of Women*, Cambridge/Massachusetts: MIT.
- Wennerås, Christine & Agnes Wold (1997): "Nepotism and Sexism in Peer-Review" in *Nature*, 22, 341–343.
- Xie, Yu & Kimberlee A. Schaubman (2003): *Women in Science: Career Processes and Outcomes*, Cambridge/Massachusetts: Harvard University Press.
- Zuckerman, Henriette (1987): "Persistence and Change in the Careers of Men and Women Scientists and Engineers: A Review of Current Research" in Laurinda S. Dixon (ed.) (1987): *Women: Their Underrepresentation and Career Differentials in Science and Engineering*, 123–156, Washington: National Technical Information Service.

# SUPPORTING RESEARCH OF HIGHEST QUALITY

**Arne Johansson**

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In this lecture I will illustrate different aspects of the review process and the search for excellence in science. In Sweden approximately half of the research funding is administrated by the Swedish Research Council. Our main task is to support research of the highest quality, so finding excellence in science is obviously crucial to our activities.

Areas of responsibility for the Swedish Research Council are research funding, research policy and science communication. The first task is the most important, but in the last few years the Research Council has played a more significant part in research policy. Today, we communicate more with the research community, and the Council has become an important channel to the Government, for those who want to influence long-term Swedish science policies.

The budget per year for research funding is around 2.5 billion Swedish crowns. The amount will increase in the next four years, and thus the research resources will be administered to a larger extent by the Research Council. The Scientific Council of Natural and Engineering sciences is given around 1 billion Swedish crowns per year for supporting basic research of highest quality.

Rather unusual in an international comparison is that the Swedish Research Council is based on a “bottom up procedure” in the scientific community. A majority of the members of the Research Council are elected from the universities in a procedure where all the universities may have electors, which in turn elect the members of the Research Council. The Scientific Councils elect their own secretary generals. The majority of the members on the boards are active researchers, and even the secretary generals are expected to continue their research careers. The Research Council supports positions, research projects and, influenced by the international trend, also centres of excellence. The organization includes three scientific councils and two committees.

The network for research funding involves many people. The staff at the head office in Stockholm consists of 140 employees. The members in the scientific councils are about 90 people from the scientific community; the

peer review groups engage about 400 people. Furthermore we have other committees that involve 300 people in Sweden, and we also engage about 200 experts, partially from Sweden, partially from abroad.

Last year we received 2,274 applications in the natural and engineering sciences, and the main task for the peer review panels is actually to reject proposals. The competition is tough; each year almost 80 percent of the proposals are rejected, and thus about 20 percent are accepted. The projects that are funded are often given substantially less money than the amount people applied for.

In certain areas peer review is sometimes combined with a criterion of relevance. There used to be a specially allocated fund for the support of long-term basic research with energy related aspects. As a consequence of a political agreement we would receive 50 million crowns per year for what was then a small research area, biodiversity. The first couple of years it was difficult to find high-quality research projects, and even to get sufficient numbers of applications. Since then the scientific quality and the numbers of research projects in the field have increased a great deal. This shows that this kind of political pressure can be effective, in that it can give rise to rapid development in a chosen scientific field. I think this might have some bearing on excellence in gender research, in the sense that it is important to have a “protected” pot of money where the relevance issues at least are considered to be very important, if one wants to construct a fairly new area.

When reviewing proposals we try to give equal weight to (on a 1–5 scale) research competence and merits (based on CVs and publications records) and to the quality of the research project. One should not think that the quality of applications is measured only by the quality of the researcher, related to numbers of citations and publications. Actually, the outcome can be very different from the ranking of scientific competence, and this is an aspect that we have worked on a lot since the Research Council was formed in 2001. Before that time (at least in the natural sciences) the tradition was to look at CVs and publication records to a very large extent.

In examining the quality of the research projects we do not have simple indicators such as numbers of publications and citations. The evaluation process is more intuitive. It is often based on scientific traditions in different fields, which also means that it can be somewhat conservative in this respect.

The scientific councils are also expected to look at scientific renewal and to support young researchers, a task in which the panels have been successful. Last year 25 percent of the proposals that were funded came from researchers younger than 40 years old. The third step in a quality assessment is an assessment of feasibility, which is not given any weight in the quality

grading, but could influence the priority of the projects. For example, there are some high risk projects where the feasibility is low, but which it could still be worthwhile to sponsor.

So – do we usually find the best projects? Do we find the best scientific quality? Do we miss projects of very high quality? Of course, there is always the risk that we miss the really new ideas, and ground-breaking research is extremely hard to find. If we look at recent examples in the history of science, there is Feigenbaum in physics, who did not receive any funding for seven years and was almost kicked out from his university, but when he finally published his results, he was awarded a number of prizes almost immediately for his findings on period doubling, etc., with relevance for chaos research. Another example is Darwin, who was considered a very poor student. His father was constantly complaining about him and he did not succeed in his medical and law studies. Finally he took a degree in theology. When he tried to get his book published in *The Quarterly Review* he was told that he should focus on something more useful instead, such as pigeons. But his book has never gone out of print since then.

It is important to reflect on this at a time when the trend is to support strong research environments. We try to find the ground-breaking ideas and give a lot of money to those who have the potential to take a significant step forward in certain areas. Sweden is one of many countries experimenting in this area. Here, we plan to give up to 10 million Swedish crowns per year to groups over a ten-year period. Supporting strong research environments will have a strong influence on the restructuring of the universities, but we are not very certain about the effects. I hope this leads to a debate about how we might support a variety of research at the same time as we spend a lot of resources in certain areas.

Besides giving an average grade on the research competence and quality of research projects, we also allow ourselves to change priorities, for example if a person already has funding from the Research Council. We can also give a higher priority to a project from considerations of gender aspects, mobility of researchers, potential of young researchers and interdisciplinary aspects.

There are 21 peer review groups in the natural and engineering sciences. The group members are experts and researchers in the field. We try to avoid having closed communities, and the process in the review groups is often complemented by an open procedure with international researchers invited into the groups. We have changed the Council's tradition in the direction of a more rapid exchange of group members and larger numbers of reviews from international experts. Nowadays, we also try to engage experts from outside Sweden as evaluation group members. One reason for this is to avoid conflicts of interest in assessments.



Each application is read by three to five experts and discussed in the review group, either in the group or in a combination with people inside and outside the panel (and with the possibility to take in international reviewers). The names of the members of the review panels and the external reviewers are public.

We try to have an equal portion of men and women in the peer review groups, but we do not always succeed. On the board of the natural and engineering sciences, the number of women and men is the same, which is good since there are definitely many more male researchers in these scientific areas. Usually about 17 percent of the applicants in the natural and engineering sciences are women, and this is probably also true of the portion of female researchers in these sciences. The review groups *do* include women but some fields are dominated by men.

Let me come back to the criterion of relevance that I mentioned before. We used to have so called relevance groups looking at applications in both energy research and biodiversity. These groups consisted of active researchers, but also of other kinds of experts from relevant organizations and public authorities in the field, for example the Swedish Energy Authority. In these types of reviewing, the ranking is strongly influenced by the relevance grade, so this is apparently an instrument that could be used to protect a new field.

At the Swedish Research Council we have looked at the success rate for men and women in the evaluation process. The analysis was made by independent experts and shows that the success rates are equal for men and women for positions and general applications.

I would like to end with a few remarks. Independent relevance and scientific quality assessments have been crucial for handling relatively new research areas and other special areas. It is extremely important to include as much international assessments as possible in the measurement of research quality. One should relate to international standards and the international research front and try to involve international members in the review groups, as well as support researchers to collaborate on an international level.



# CONSTRUCTING SCIENTIFIC QUALITY

## Constraints and Biases in Grant Review Processes

Liv Langfeldt

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The point of departure in my lecture are some major conclusions that may be drawn from the literature and empirical studies of peer review (Mahoney 1977; Cole et al. 1981; Ceci & Peters 1982; Chubin & Hackett 1990; Cicchetti 1991; Travis & Collins 1991):

- Different reviewers often have substantially *different assessments* of the same research (regarding both applications and manuscripts) *in all fields*.
- Different kinds of *bias* may affect reviews.

I will discuss and illustrate these problems with results from different empirical studies of peer review, giving special attention to issues related to non-disciplinary areas such as gender research. Three different perspectives are used to elucidate the constraints and biases of peer review processes:

1. The role of peer review in the research community: reviewers as gatekeepers and the importance of reputation and networks.
2. Problems of uncertainty in assessing research quality.
3. Effects of various ways of organising peer review.

### Perspective 1: The role of peer review in the research community

Peer review is a central social control institution in the research community. It defines losers and winners in the competition for positions, for grants, for publication of results and for all kinds of awards. Used as a research policy tool, it has two major functions:

- It is supposed to ensure traditions and standards of research quality. The reviewers are the gatekeepers who ensure that the traditions and standards of good research are fulfilled.
- The implied competition for recognition and resources is also supposed to increase the quality of research, by providing everyone with incentives for doing their best.

Both functions have some malfunctions. Firstly, processes that distribute reputation and money give the awarded a better platform for obtaining more reputation and money (*the so called "Matthew Effect"*, see Merton 1968 & 1988). Secondly, using established researchers as gatekeepers to ensure quality implies some structural bias – towards the fields and directions that are represented among the gatekeepers.

This underscores the power structures in the research community. On the other hand, it may also open for peer review as an arena for communication and competition between different scholarly directions and opinions. This implies some particular challenges for non-conventional and interdisciplinary research.

### Challenges for non-conventional and interdisciplinary research

Peer review implies that the concept of quality, and the allocation of resources and honour, are defined and guarded by established and renowned scholars. Research in emerging fields and interdisciplinary research will often be assessed by researchers in established fields. Moreover, the inherent conservativeness in the review processes entails clear incentives for meeting established standards, and less incentive for doing unconventional research.

It should also be noted that interdisciplinary and unconventional research often lacks its own arenas for judging and awarding quality. The existence of such arenas may be taken as part of the definition of a scholarly discipline. To achieve status as a research discipline, one needs institutional independence in terms of one's own scientific journals, conferences, associations and university departments. This gives the authority to define and certify quality (Dahl & Sørensen 1997: 11–12). In other words, ownership of such institutions entails the ability to define the boundaries and direction of a research area through educating and certifying researchers and appointing candidates to academic positions, selecting manuscripts for publications and choosing members for various other kinds of certification and award committees.

Consequently, we may easily predict that interdisciplinary research will encounter problems in peer review as far as interdisciplinary research does not have independent arenas that define and award quality. Still, in existing studies of bias against interdisciplinary research in grant review we find little support for such worries. At least when using a very broad definition of interdisciplinarity or when the line between disciplinary and interdisciplinary research is defined by the evaluatees themselves, interdisciplinary projects seem not to have a smaller chance of getting funding than disciplinary projects (Sandström et al. 2005).

## Perspective 2: The uncertainty of assessments

The second perspective is inspired by the theory of uncertainty. A paper by George Akerlof called “The Market for ‘Lemons’: Qualitative Uncertainty and the Market Mechanism” (Akerlof 1970) can be used to illustrate uncertainty in peer review. A lemon is American slang for a bad second-hand car, whereas a cream puff is slang for a superb second-hand car. When we speak about food there is no problem distinguishing lemons from cream puffs; at a grocery you do not risk ending up with a lemon if you want a cream puff. Hence, there is no asymmetrical information between buyer and seller. But, when it comes to used cars, there is. The car owner has information about the quality of the car, but the buyer cannot be sure to get this information and consequently cannot know whether he pays for a lemon or a cream puff. What we need is some kind of guarantee or a professional third party to examine the car.

When it comes to research, this is the role of peer review. But the degree of uncertainty is much more fundamental than in the case of second hand cars. George Akerlof’s paper may illustrate the *fundamental uncertainty* in peer review. The paper was rejected by three journals before it was finally published in *Quarterly Journal of Economics*. And in 2001 Akerlof was awarded the Nobel Prize in economics for this article. In other words, a paper written in 1966–67 was refused by three journals, published by the fourth and finally awarded a Nobel Prize 34 years after it was written.

What information might we get through grant review, i.e. before this research is even done? All applications may look equally good, or those of the most original thinkers or most ambitious applicants may actually seem much more risky and less prepared than the average experienced applicant. There is not only *asymmetric information*, but also fundamental lack of information on all levels as the applicant does not know the result.

The rejections of Akerlof’s paper also illustrate the difficulties unconventional and groundbreaking research faces. The first two journals rejected the paper because “the topic was trivial”. The third rejection included referee reports arguing that the paper was incorrect. “If this paper was correct, economics would be different” was added to the argument for this rejection (Akerlof 2003: 6).

The uncertainty in assessments is also visible when we look at review criteria. We may say that there are four major aspects of review, but there are very many different ways of understanding them, both between and within different research fields (Gulbrandsen 2000):

- Solid research: well founded, thorough, adequate methods etc.
- Original research: novel, groundbreaking etc.
- Scholarly value: cumulative, generability etc.
- Societal value: implications and benefits for the society etc.  
(depending on who is judging from what perspective).

For specific review tasks criteria may be detailed, but their interpretation may still vary. Fürst (1988) studied the basis for evaluations of candidates for professorships in Norway. According to the rules a certain amount of “breadth” is required for obtaining a professorship. There was, however, a large variation in *how* the criteria were interpreted. Studying the review documents, Fürst found some interesting patterns in the use of these criteria.

The research of female candidates were typically described as either *narrow* and *one-sided*, or *spread* across many areas. For the research of male competitors terms such as *depth*, thematic *coherence*, or good *breadth* were used (Fürst 1988, referred in Langfeldt 2002:61). In other words, what is seen as a positive characteristic for male candidates is seen as a negative characteristic for female candidates. The study concludes that these selection processes tend to be biased against female candidates. And the choice of words to describe how broad and deep the scope of a researcher’s work is, is one of the major examples.

### Perspective 3: The way review is organized affects the outcome of the review

In my own studies I have found several organizational factors that influence the outcome: Who are the reviewers, and who selects them? What specialities, traditions and scholarly interests are represented? Is information from the evaluatees used in the selection of the reviewers, or are the evaluatees allowed to comment on the reviewers’ judgements? Such input may serve an important role in detecting and avoiding bias caused by lack of match of scholarly direction between reviewers and reviewed.

Other important factors include the way decisions are made in review processes, including various ranking procedures. The issue of decision-making processes is especially relevant when reviewing grant applications – as decision-making here may be organized in very many different ways and ends up with a ranking list and a cut-off line.

The differences between majority decisions and methods that allow single panel members to be decisive for the outcome may illustrate that *the ranking method* itself is important for the outcome of review:

A: Given that the panel members’ different ratings represent conflicting scholarly norms and interests – if *all panel members get their favourite candidate funded* this gives *pluralism*. (Given that there is some scholarly pluralism on the panel, of course.) When a broad spectrum of views are represented on the panel, and there is room for argumentation and for changing one’s opinions, there are better chances for cases where non-conventional projects are found interesting by single members who succeed in convincing the rest of the panel about the value of the project.

B: Methods that *eliminate* proposals that a majority of panel members do not give priority to tend to support uncontroversial and safe projects. Agreement on a high ranking of a proposal often indicates that the project is uncontroversial regarding research questions, scientific methods, etc. Disagreement indicates controversial research and risk-projects.

The panel's choice of ranking method, A or B, may have far-reaching implications on the chances for various kinds of research to be funded. The overall conclusion from these two examples is that there is an *inherent tension* between the different aims of research councils: *thorough and reliable* peer review on the one hand and various policy aims on the other. Methods that give thorough and reliable peer review are contrary to those methods that open for more randomness in outcome – and more *pluralism and unconventional* research (Langfeldt 2001).

### Who may be gatekeepers?

Conflicts of interest is another issue that relates to the question of bias in peer review. There are large variations between funding organizations in what kinds of relations disqualifies a reviewer. For example, in some research councils a reviewer may not review any applications from his/her own institution. In other councils they may. In some councils reviewers may not apply for grants, or applicants may not review competing applications. In other councils they may (Langfeldt et al. 2003).

Regardless of this, rules for conflicts of interest normally cover a small part of what can be defined as bias in peer review. In terms of more structural scholarly bias, excluding a reviewer who has a formal conflict of interest, in many cases probably has little impact. In the figure below, four different categories of bias in peer review are defined.

Figure 1. Categories of bias in peer review

|                   | <b>Cognitive constraint</b>                                | <b>Interests</b>        |
|-------------------|--|-------------------------|
| Professional bias | A<br>Scholarly<br>(pre)conceptions<br>of good/bad research | B<br>Research interests |
| Personal bias     | C<br>Personal cognitive<br>constraints                     | D<br>Personal interests |

(From: Langfeldt 2002)

Conflicts of interest concentrate on category D and are consequently seldom a tool for regulating structural (professional) bias. Scholarly bias is seldom explicitly included in the regulation of conflict of interests in peer review. On the other hand, research councils have several other means of avoiding it (Langfeldt et al. 2003):

- Evaluator-proposed reviewers (or possibility of proposing who should not review, or propose one positive and one negative).
- Openness: access to review documents.
- Evaluator comments on reviews before final ranking.
- A large number of reviewers – resulting in higher probability of including more, or all, different scholarly opinions.

## Implications

### The role of peer review in the research community

The first perspective emphasizes the role of gatekeepers and the importance of reputation and networks, and that peer review is part of a power struggle and may have substantial effects both on individuals and the direction of research. From this point of view peer review is just as much a process that defines good research as a process discovering it. And this is done in many stages: positions – project grants – publications – prizes.

### The uncertainty problem

Seen from the second perspective, there is a fundamental lack of information and uncertainty about research quality. A larger number of reviewers is seen as a way to control the reviewers and handle the uncertainty problem.

### Processes affect outcome

From the third perspective, on the other hand, too much focus on certainty may be counterproductive as a lot of resources are spent on getting a conservative decision – and sometimes a conservative decision is not what is wanted. The fact that different procedures have different effects on the outcome implies that we need different procedures for different purposes – and it is possible to use the choice of review procedure as a policy tool. It should also be noted that there are many different ways of organizing peer review and this itself might be important for pluralism in research – and an

explanation of the broad set of conclusions we find in the different studies of bias and reliability in peer review.

Summing up, a major argument is that peer review processes contain contrary objectives. On the one hand we want the processes to be fair. We want equal treatment of evaluatees and no arbitrariness in the outcome. To obtain this we need to emphasize rigour and thoroughness. On the other hand, policy priorities – such as strengthening weak or important areas and encouraging scholarly pluralism or groundbreaking and non-conventional research – are often important. But these are contrary objectives, since thorough and stringent review processes tend to promote uncontroversial and safe projects. Less thorough processes may more easily support unconventional and controversial research and scholarly pluralism – both as a result of more randomness and the fact that the outcome more easily departs from the opinions of the majority.

The review processes of the European Young Investigator Award scheme (EURYI) may illustrate the problem in relation to interdisciplinary research. The review processes were more demanding for interdisciplinary applications than for the disciplinary ones (only the first call for applications is analysed, Langfeldt & Brofoss 2005). Each interdisciplinary application was evaluated in two different review panels, whereas other applications were evaluated in one panel. The double review was intended to give the interdisciplinary applications a more fair treatment, but seems rather to have disadvantaged the interdisciplinary applicants (Langfeldt & Brofoss 2005: 42). More reviewers imply a higher probability that doubts will be raised about the feasibility of a project. So, in addition to lower probability of a scholarly match of applicant and reviewers, interdisciplinary applications also had lower probability of a high rating for other reasons.

The outcome for unconventional and interdisciplinary applications would of course be very different if they were reviewed in schemes where unconventionality and interdisciplinarity were explicit requirements for grants. Then non-conventional research would not need to compete with conventional research and be judged by conventional gatekeepers. In this way, the most important aspects of grant allocation would be determined by the overall budget allocation and not by peer review (Martin 2000). So if one wants to bypass the social-cognitive control mechanisms of the research community (and take the implied risk of funding futile activities), overall budget allocation can be used to “out rule” peer review.

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## References

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- Akerlof, George A. (2003): "Writing the The Market for 'Lemons': A Personal and Interpretive Essay" <http://nobelprize.org/economics/articles/akerlof/index.html>.
- Akerlof, George (1970): "The Market for 'Lemons': Qualitative Uncertainty and the Market Mechanism" in *Quarterly Journal of Economics*, 84 (3), 488–500.
- Ceci, Stephen J. & Douglas P. Peters (1982): "Peer Review: A Study of Reliability" in *Change*, 14 (6), 44–48.
- Chubin, Daryl E. & Edward J. Hackett (1990): *Peerless Science*, New York: State University of New York Press.
- Cicchetti, Domenic V. (1991): "The Reliability of Peer Review for Manuscript and Grant Submissions: A Cross-disciplinary Investigation" in *The Behavioral and Brain Sciences*, 14 (1), 119–186.
- Cole, Stephen et. al (1981): "Chance and Consensus in Peer Review" in *Science*, 214, 20 November, 881–886.
- Dahl, Thomas & Knut H. Sørensen (eds.) (1997): *Perspektiver på tvers: disiplin og tverrfaglighet på det moderne forskningsuniversitetet*, Trondheim: Tapir.
- Fürst, Elisabeth (1988): *Kvinner i Akademia – inntrengere i en mannskultur?*, Oslo: NAVFs sekretariat for kvinneforskning.
- Gulbrandsen, Magnus (2000): *Research Quality and Organisational Factors: An Investigation of the Relationship*, Trondheim: NTNU, diss.
- Langfeldt, Liv & Karl Erik Brofoss (2005): *Evaluation of the European Young Investigator Awards Scheme*, Oslo, NIFU STEP Working Paper 10, 2005 [http://nifustep.no/norsk/publikasjoner/evaluation\\_of\\_the\\_european\\_young\\_investigator\\_awards\\_scheme](http://nifustep.no/norsk/publikasjoner/evaluation_of_the_european_young_investigator_awards_scheme).
- Langfeldt, Liv, Frode Berglund & Peter Maassen (2003): *Søknadsbehandling og habilitetsregler i andre lands forskningsråd: Rapport til "Smith-utvalget"*, Oslo: NIFU November 2003.
- Langfeldt, Liv (2002): *Decision-making in Expert Panels Evaluating Research: Constraints, Processes and Bias*, Oslo: Unipub. (Series of dissertations submitted to the Department of Political Science, University of Oslo, 33, 2002.) <http://statsvitenskap.uio.no/fag/polit/disputas/fulltxt/langfeldt.pdf>.
- Langfeldt, Liv (2001): "The Decision-Making Constraints and Processes of Grant Peer Review and Their Effects on the Review Outcome" in *Social Studies of Science*, 31 (6), 820–841.
- Mahoney, Michael J. (1977): "Publication Prejudices: An Experimental Study of Confirmatory Bias in the Peer Review System" in *Cognitive Therapy and Research*, 1 (2), 161–175.
- Martin, Brian (2000): "Research Grants: Problems and Options" in *Australian Universities' Review*, 43 (2), 17–22.
- Merton, Robert K. (1968): "The Matthew Effect in Science" in *Science*, 159 (5 January), 56–63.
- Merton, Robert K. (1988): "The Matthew Effect in Science, II: Cumulative Advantage and the Symbolism of Intellectual Property" in *ISIS*, 79 (299), 606–623.
- Sandström, Ulf et al. (2005): "Tvärvetenskap: en analys" in *Vetenskapsrådets rapportserie 10:2005*, Stockholm: Vetenskapsrådet.
- Travis G. D. L. & Harry M. Collins (1991): "New Light on Old Boys: Cognitive and Institutional Particularism in the Peer Review System" in *Science, Technology & Human Values*, 16 (3), 322–341.



# WHO ARE THE PEERS?

## Who Should Determine the Standards of Excellence in Medical Gender Research?

**Agnes Wold**

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In 1959, C. P. Snow wrote an essay on “The Two Cultures”, then exemplified by the study of literature and the natural sciences. He claimed that a deep crevice of misunderstanding, mistrust and lack of knowledge separated the two academic cultures. Although Snow hoped that the social sciences would bridge the gap between the natural sciences and the humanities, this did not happen. In fact, all subject areas have neatly arranged themselves on either side of the gap between the natural sciences and the humanities.

Gender studies emerged in the 1970s and is placed solidly on the other side of the groove from the natural sciences, medicine and technology. The two cultures differ profoundly in social organization and in their views on scientific excellence. The natural sciences, including technology and medicine, all share a positivist view on science. Such a view is characterized by a belief in objective truth, measurable data, and the overall beneficial effects of scientific development. These beliefs contrast with the view held in the humanities, according to which truth is relative and scientific development is not always positive.

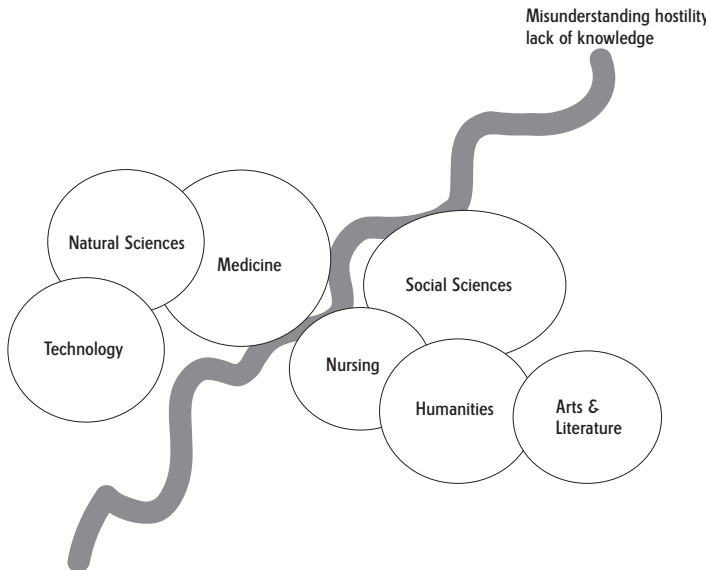
In contrast, the natural sciences pay no respect to disciplinary boundaries and have no respect for “theory”, which is considered inferior to data. In my opinion, the firm placement of gender studies in the non-positivist area of the sciences results in an incapacity to understand and incorporate the most vital developments in gender medicine. “Theoretical” gender medicine has little appreciation for the more practical and intra-science based criticism of the patriarchal practises of medicine, while people within the medical profession are not impressed by theoretical considerations published in national journals. If gender medicine is to have an impact, it must comply with the culture and scientific standards of the natural and medical sciences.

## The two cultures

In 1959, C. P. Snow wrote the essay “The Two Cultures”. He was trained as a physicist who later became a novelist. In this essay, he described how his friends among natural scientists and literary historians were unable to understand each other. Writers and literary academicians thought of natural scientists as arrogant. On the other hand, as Snow pointed out, they themselves lacked even basic knowledge about the natural sciences, and were not ashamed of being ignorant of the second law of thermodynamics. In contrast, even the most ignorant physician or physicist would know who Shakespeare was, according to Snow.

“The Two Cultures” was immediately heavily criticized. But the term had never survived had it not pointed to something fundamentally true. The two cultures exist. The natural sciences, technology and medicine stand on one side of the great scientific divide. The humanities and social sciences (which Snow hoped would be able to bridge the divide) are found on the other side. New academic disciplines tend to place themselves on either side. One example is nursing, which when being “academized” did not sediment with medicine, but on the other side of the great scientific divide together with the social sciences and humanities. The reason for this is not self-evident, since many nurses had obtained their Ph.D.s in traditional biomedical disciplines (Figure 1.).

Figure 1. The two cultures. The natural sciences and the humanities belong to two different cultures, separated by a gap of misunderstanding and sometimes hostility. Gender studies belong to the humanities – social science culture. From: Wold.



Gender studies emerged in the 1970s, commencing with women's history and an interest in female writers. Thus, the humanities were the birth-place of academic gender studies, which then spread to the social sciences. Today, there is some consensus about the necessity of having a gender perspective in almost all disciplines, with the possible exception of mathematics and some pure natural sciences. Medicine is a field where the gender perspective is immensely relevant. Gender-biased medicine affects the health of people. Furthermore, medicine is one of the most powerful ideology producers in modern developed societies, maybe second in influence only to the mass media.

As a result, gender medicine has become an academic sub-discipline. However, is it apart of medicine, or gender studies? In the first case, criteria for defining and evaluating gender medicine should be based on the standards of excellence applied in the natural science culture. In the second case, the views on what constitutes excellence in gender medicine will be those prevailing in the culture of the humanities and social sciences. These are completely different, as I will explain below.

## The social organization of the natural sciences

The natural sciences, medicine and technology are organized similarly and have a similar view on science and scientific excellence. They are sometimes called "laboratory sciences", although they are often not carried out in the laboratory. Medicine is not. Mathematics and parts of theoretical physics are purely theoretical. Still, the organization and ideology is very similar in all natural sciences.

The basic unit in the natural sciences is the research group, which may hold anything between 2 and 20 people. The research group is headed by a "principal investigator", whose job is somewhat similar to that of running a small family firm. Thus, the size of the research group depends almost entirely on the ability of the principal investigator to raise funding. The research group may contain Ph.D. students, post-docs and technicians. There is mutual loyalty between the principal investigator and those employed in the research group, because the staff depends on him or her for funding and guidance, while the he or she depends on the ability of the research staff to carry out the laboratory work.

On the contrary, the research group has little loyalty or sense of belonging to a certain department or even discipline, because most university departments today do not provide financial support to their researchers. The research group is mainly externally funded and, hence, freely movable.

## A common ground in natural science – positivism

Whereas there is little loyalty toward the department, subject or university, natural scientists have quite a strong feeling of belonging to a common global research community, which shares a common scientific ideology. This ideology is positivism.

Positivism consists of a number of beliefs:

1. Objective truth exists.
2. Objective science uncontaminated by the researcher's views can be achieved (although with difficulty).
3. Scientific development is basically positive (even if science can be misused).
4. Data have precedence over theories. Theories are temporary constructions of little value until proven by data.
5. All (natural) sciences are part of one single science. Departments, subjects etc. are only administrative units (mainly constructed for teaching purposes) that carry little emotional value.
6. Science is international. Publication in national journals or books does not count.
7. The quality of science is determined by
  - a. the quality of the science conducted
  - b. the importance of the problem solved (relevance).
8. The quality of science is reflected (although imperfectly) by the impact of the journal in which it is published.
9. Truth will show up in the end. Scientific fights will be solved by themselves because nature will show who was right and who was wrong.

Very few people in the humanities share these beliefs. They consider positivism naïve, underdeveloped and primitive. The positivist's belief in objectivity strive for "pure science" uncontaminated by the researcher's points of view, and the positive view on scientific development is considered as lack of "reflexivity".

On the other hand, natural scientists do not understand academic fights between different "schools" in the humanities and social sciences and do not understand how one can produce research that does not include empirical data. Further, they do not understand the reverence of "theory". Below, I will try to explain some parts of the natural science culture that may seem confusing to people on the other side of the division line between the two cultures.

## Objective truth and the researcher's influence on the research results

Natural scientists believe in objective truth and that it can be revealed through carefully conducted studies or experiments. Natural scientists are well aware of the risk that prejudice and pre-conceptions can lead to faulty interpretation of data, and even generation of false data. Different procedures have been developed to minimize such effects, for example blinding and placebo-controlled studies. Blinding means that the observer does not know whether the observed object is in the treatment or control group. Studies which are not blinded (so called "open" studies) are considered of low value. Placebo is inactive treatment – necessary because a patient will behave differently if she believes she is treated, or just because she is being observed. This "placebo effect" may even induce changes in physical parameters such as blood pressure. In double-blind placebo-controlled studies, neither the patient, nor the doctor knows whether treatment is given or not.

## Disrespect of theories

Natural science lacks respect for and interest in theories. Natural scientists also produce theories, but they are considered simple and dispensable tools for designing experiments and clinical studies. When the study has been made, a new theory is put forward and a new study is performed.

Quite often, the researcher has no prior theory at all. For example, in botany or medicine, mapping of the flora in a region or mapping the bacteria in the nose is no less a scientific endeavour than doing an experiment aiming to prove or disprove a theory. Research plans, theses, etc. usually do not contain any heading labelled "theory". At least in medicine, the preferred term is "aim", under which heading you explain what you intend to do.

The disrespect of theory is immediately evident upon inspection of a thesis in natural science. Whereas people in the humanities may write at length naming people whose theories have inspired them and from whom they have borrowed terms and definitions, nothing of this sort is found in the natural sciences, including technology and medicine. Ph.D. students thank technicians and secretaries for providing practical help, their supervisors for "guidance and support" and for sharing their knowledge of the research field, and all research colleagues for providing a nice social atmosphere. No mention of anyone lending any theories on which the research was based. The scientific endeavour is seen as a piece of quite heavy work, carried out in a research group. A very down-to-earth view.

In the natural sciences, a theory not supported by data has practically no value, and a theory supported by data is no longer a theory. Being "theoretical" is not considered desirable among natural scientists; it rather signifies a person who is not capable of doing real, hard scientific work. Scientific work consists

of designing and carrying out high-quality studies. To complete a complex study may take years, while the theory being tested could have been generated at a coffee break or picked up from a lecture at a scientific meeting.

In natural science, the research group that performs a study gets the credit, not the person who has put forward the theory on which the study is based, which no one probably remembers by the time the study is finished. As most natural sciences are based on complicated and laborious techniques that take many years to learn, a new Ph.D. student cannot decide on his/her research project. The methods and area of study will follow automatically when he/she chooses a research group and principal investigator. What characterizes a successful principal investigator is that he/she has a sense for which ideas (“theories”) can be proven or falsified given the available methods and technical equipment. Such a person will be popular and attract many Ph.D. students who need to know that their hard work in the laboratory will result in at least some papers within four years.

### Disrespect of boundaries between disciplines

A peculiarity among human scientists, completely incomprehensible to the natural scientist, is the inclination to discuss boundaries between disciplines. To a natural scientist, science is universal and methods can be freely imported from neighbouring disciplines either by learning the methods, or by collaborating with someone who has the right experience. Which strategy one chooses is a practical and economical matter. Medical departments (anatomy, histology, etc.) have been constructed for the purpose of organizing the teaching of physicians-to-be. Today, almost everyone in the biomedical field uses similar types of technology and little attention is paid to the affiliation of the researcher. No one is surprised to find cancer researchers in immunology departments and immunology researchers in pathology departments.

### A common scale which (almost) all agree on: quality, novelty and relevance

Natural scientists believe that in theory scientific quality can be measured and that there is a common scale on which all science can, in principle, be measured. The rank is decided by three characteristics of the research: its inherent quality, its novelty and its usefulness to humankind.

The quality of a study is judged by the ingenuity of the study design, the difficulty in performing the study and the reliability of the data. Ideally, the design should be simple and elegant, generating clear-cut data that are easy to interpret.

A *sine qua non* quality of papers in natural science is that they must be **novel**. It is strictly prohibited to publish the same data twice (unless one writes a review). An *original publication* is usually an article in a journal where *original*

*data* is presented and this can only be done once. The scientific community is extremely strict with this – all scientific journals require that you promise that the data shown in the paper has never been published before.

The third quality variable is **importance to humankind**, or “relevance”. When you write a research proposal in most natural sciences, not the least in medicine, a section on “relevance” is mandatory. Relevance signifies the potential utility of the research to the human (global) community. For example, research on a microbe that causes life-threatening disease in humans is considered more relevant than similar research considering a microbe that causes disease in animals, or microbes that do not cause disease.

Although many researchers complain about it, the common value scale is based on supply and demand on a publishing market. Everyone tries to publish in a journal of the highest possible prestige, which quite conveniently is listed in databases in the form of “impact factors”. The impact factor is calculated as the average number of times a paper in this journal is cited by other researchers during one year and may vary between  $<0.1$  and  $>40$ . Different biomedical disciplines have different average journal impact factors with molecular genetics on the top of the list. Generalized cross-discipline journals, such as *Nature* and *Science*, carry the highest impact factors. Even though it – in theory – is possible that an extremely important paper could appear in a low-prestige journal, it rarely happens. Few would argue that one paper in *Nature* is worth less than many papers in low-prestige journals.

## Data versus theory

To generalize, one may say that theory and data are the respective holy grails of the humanities and natural sciences. A natural scientist would not be upset because another researcher has stolen her theory, because it is not considered wrong to take other people’s ideas as a starting point for an experiment or study. On the contrary, a natural scientist will be extremely upset if someone steals his/her data. For example, it is considered theft if a senior scientist or colleague publishes data generated through someone else’s work without acknowledging this person. This goes for both technicians (who are acknowledged under a special heading in the paper) and fellow researchers (who are given co-authorship on the paper if they have contributed significantly). Where to draw the line between a simple acknowledgement and co-authorship is a very sensitive issue, debated endlessly. Very many in the natural sciences believe that they once or twice have been bereaved of rightful co-authorship and that they also may have been forced to include people on the author list who they believe did not contribute enough to really have the right to be co-authors. On the contrary, I have never heard anyone complaining about her theory having been stolen.

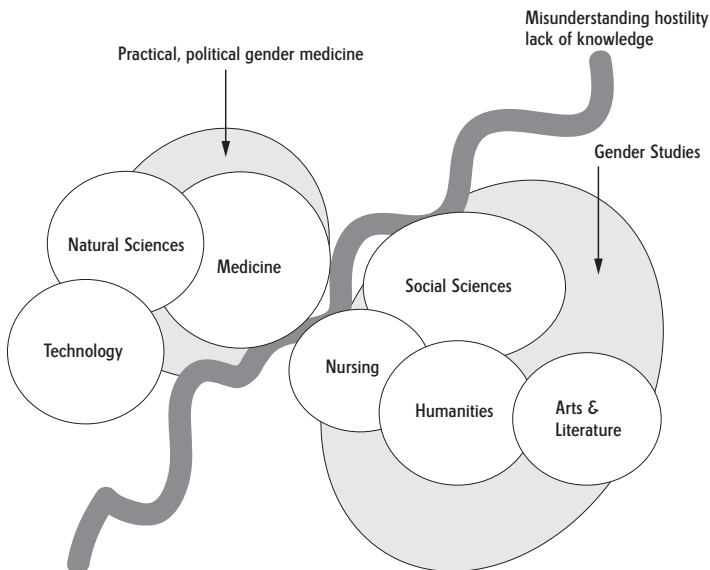
# Gender medicine – what are the questions?

Gender medicine can be regarded as a discipline that investigates the intersection between society and human biology. According to my view, at least three areas can be considered central to gender medicine:

1. Studies of how society's gendered structure affects the health of men and women.
2. Studies of how medical practise – including research and teaching – is affected by gender stereotypes and by women's lower societal value compared to men's.
3. Studies on how medicine acts as a conveyer of patriarchal ideology, by transforming common prejudice and patriarchal ideas in society into pseudobiology, thereby providing a pseudoscientific support for men's dominance over women and restriction of women's power and freedom.

The first domain that I consider part of gender medicine, can be exemplified by research on whether the fact that women have heavier and lower paid jobs and less free time at their disposal, or their subordination in the family affects women's health (Orth-Gomer et al. 2000). This research is often carried out in the area of social medicine, which is the area of medicine closest to the social sciences (Figure 2.).

Figure 2. Whereas gender studies traditionally belong to the humanities and social sciences, a type of practical/political gender medicine is practised within the natural science culture. In order for this type of activity to have an impact on medical practice and thought, it has to be based in the natural science culture. Today, this type of practical/political study and practise is not being recognized as part of gender studies, which is placed on the other side of the gap that divides the two scientific cultures from one another. From: Wold.





The second domain – how medical practise is a part of patriarchal ideology and has thereby treated women as second-rate citizens – has no less than exploded in the last few years. Pivotal work from Sweden has demonstrated hard facts, which prove that women get cheaper drugs and are given less advanced care when they suffer from an acute heart attack (Johansson et al. 1999). This can be attributed to two things: the male body has been the norm in medical research and teaching, and women are always supposed to cost less – hence they are given cheaper drugs and less advanced treatment.

The third domain listed above, is the study of how medicine has been used to shame, blame and control women. The history of medicine (like the history of all disciplines) is a catalogue of such patriarchal practises. We can start with the shaming of the female (but not the male) sex drive by creating the pseudomedical diagnosis “nymphomaniac”, for which there is no corresponding male diagnosis. We can continue by reading a common textbook in gynaecology claiming that women working outside the home are often sexually “frigid”. Psychiatrists have blamed mothers, but not fathers, for every mental suffering of their children, including autism, schizophrenia and anorexia. And so forth...

A personal interest of mine, as a microbiologist, is the pseudoscientific support for the idea that women should clean their homes. One hundred years ago, Western society suffered from phobias of infectious diseases, quite reasonably, since young people could die from pneumonia, appendicitis or diphtheria, suddenly and unexpectedly. Infections easily spread among poor people living in crowded conditions. But women were told that if they scrubbed and cleaned well enough, they could fight the microbes and, hence, the infections. In fact, microbes that cause human disease spread practically exclusively from person to person, or, sometimes from infected animals to people, and ordinary scrubbing and cleaning generally do not affect microbes very much. Interestingly, as infectious diseases were drastically reduced in the 20th century, allergies started to appear, probably as a direct result of a reduced exposure to microbes. Now the medical profession started giving advice that cleaning would help against allergy. Although there is no scientific support to the claim that general cleanliness would reduce either the spread of infectious diseases or allergies, the Swedish National Board of Health and Welfare (Socialstyrelsen) stated only a few years ago that this was the case.

Furthermore, Swedish health authorities have claimed that breastfeeding reduces the risk of allergies, despite lack of supportive data. As a result, many thousands of mothers have been led to believe that if they had breastfed for a longer period of time; their child would not have developed an allergy. An enormous burden of guilt has thereby been placed on Swedish mothers, but approximately 30 percent of today’s children develop allergies regardless of

whether they have been breastfed or not. Anyone with the least insight into gender politics realizes that a similar “advise” had not been issued, had men been the food providers of the baby (Wold 2006).

## Who are the peers in gender medicine?

As evident from above, many aspects of medicine should be examined through gender glasses. As the human body has been equated with the male body in all areas of medicine, except gynaecology, there is a massive task to take on in revising all established knowledge, checking whether it also applies to women and ridding medical advice of gender stereotyping and patriarchal ideology. Interested medical students and teachers have started such work in the last few years. Through the work of female feminist scientists one can no longer obtain research support from the EU without providing a gender analysis of the proposed study.

Research shows that women’s heart conditions have been treated less seriously than men’s have met with enormous public interest. It has been an eye-opener to even the most hopelessly gender-blind old doctor or professor and the world’s first centre for gender medicine has opened at the Karolinska Institute in Stockholm. A growing number of doctors, nurses and scientists in the medical field have understood, in a practical way, how fundamentally medicine has helped shape patriarchal ideology. A growing number has also engaged in practical activities to remediate medicine from its infection by patriarchal thoughts and practice. I call their activities practical/political gender medicine (see Figure 2.). There has never been more reason to be optimistic than today when medicine, interestingly enough, has become one of the great areas for raising gender awareness.

Everything should be fine, then. However, this practically oriented gender awareness in the medical field is sometimes not considered critical and theoretical enough to be labelled “gender medicine”. Some argue that research which simply examines health conditions of women without being based on proper feminist theory is only “supplementary” research – i.e. it is only “normal”, proper medicine carried out in the ordinary way, but now including women. And this type of science does not merit the label “gender medicine” (Hammarström 2004). In my opinion, this argument is unproductive. It is immensely important to carry out this type of studies. Labelling them “supplementary research” instead of “gender medicine” does not help moving anything forward. Gender studies in all disciplines started by paying attention to women and their work and conditions, which earlier had

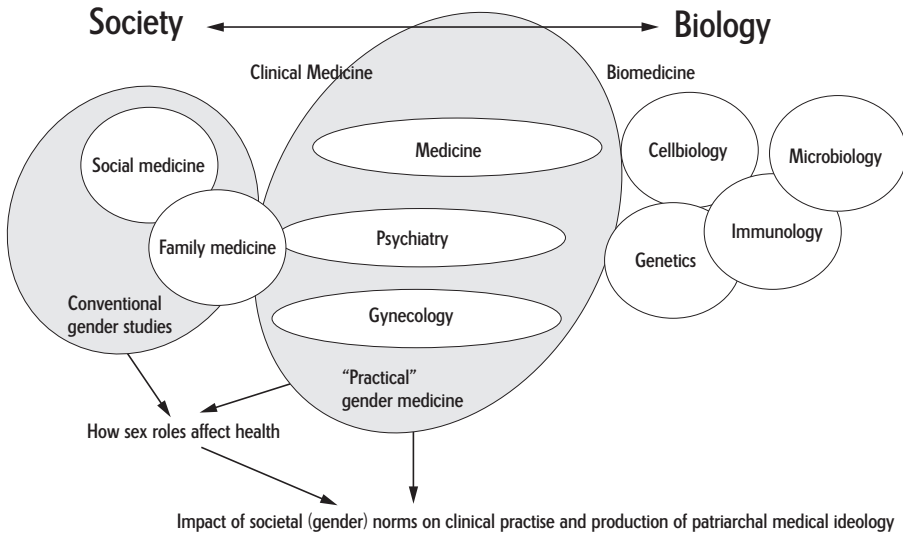
been ignored by male-centred research and teaching. Why should this not be done in medicine?

The importance given to “critical theory” by gender scholars who thereby decide what is to be and not be included in gender medicine derives from the fact that most gender researchers have belonged to the social sciences and humanities. In this culture, a lack of theory shows lack of quality. In the natural science culture, however, this is not the case. Quality is shown by the impact and relevance of the science, which in turn is determined by the scientific community, in this case the medical scientific community. To them, a paper in a high prestige international journal examining large numbers of men and women carries more weight than any theoretical reasoning about how gender is constructed.

For example, the fact that women’s heart attacks received less attention from the health care system led many people to understand through hard facts that women are worth less than men in the society of today. They would not have understood this by reading a theoretical argument about it. In order to have an impact on the medical community, medical research has to be carried out in the way it is normally done in the medical field, according to the quality standards generally accepted in the field.

If one accepts that non-natural scientists define gender medicine, the effect will be that only parts of the vast medical field will be included, namely social medicine and parts of family medicine. These areas are close to the social sciences and are less positivist than the rest of medicine. However, most parts of medicine where a gender perspective would be immensely fruitful would be left out by demanding a proper theoretical framework for doing gender research (Figure 3.). This would certainly be counter-productive to women’s interests.

Figure 3. The medical field is very wide and diverse, comprising areas ranging from social medicine (which is close to social sciences) to pure biology, the latter termed biomedicine and comprising, e.g., genetics, biochemistry, cell biology, microbiology and immunology. Traditional gender studies deal with issues that belong to the social sciences and family medicine, the areas most closely related to the social sciences. Gender bias in clinical practice, and fuelling of patriarchal ideology by medicine is being revealed through “practical/political gender medicine”, which may cover much larger areas than traditionally covered by “gender studies”. From: Wold.



## References

- Hammarström, Anne (2004): *Genusperspektiv på medicinen – två decenniers utveckling av medvetenheten om kön och genus inom medicinsk forskning och praktik*, Stockholm: Högskoleverket (National Agency for Higher Education).
- Johanson P. et al. (1999): “Time-trends in Thrombolytics: Women are Catching Up” in *Scandinavian Cardiovascular Journal*, 33, 39–43.
- Orth-Gomer Kristina et al. (2000): “Marital Stress Worsens Prognosis in Women with Coronary Heart Disease: The Stockholm Female Coronary Risk Study” in *JAMA*, 284, 3008–3014.
- Wold, Agnes (2006): “Why Is There Still Confusion About the Impact of Breast-feeding on the Risk of Allergy Development?” in *Scandinavian Journal of Nutrition and Food Science* (in press).

# EX-CELLENCE, EX-CENTRICITY, EX-CLUSIVITY, EX-TREMISM

## Gender and Knowledge – Back to Basics and Balance?

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*Statue of Bjørn Nørgaard in the series called Venus mirrors – mirrors Venus.  
Title: "The Promised land". Photo: Hanne Petersen.*

## First story:

### On framing: love and law imprisoned in the promised land

In the summer of 2005 the Danish artist, sculptor and professor at the Danish Academy of Art, Bjørn Nørgaard (born 1947), exhibited seven plaster versions of modified Venuses at an exhibition called *Venus mirrors – mirrors Venus*. One of these Venuses was blindfolded and placed in a small cage of barbed wire together with two broken tablets of the Ten Commandments and a red signal light in the background. This presentation was called “The promised land”.

## Second story:

### On the unacceptability of inequality in national politics

In September 2005 the young, female, liberal (Venstre) Danish Minister of Social Affairs (born 1964) proclaimed to the press that she was in favour of inequality because it would produce dynamism in society.

After a short and heated debate in the media, she was “overruled” by the liberal Prime Minister, who proclaimed that the party as such was certainly in favour of equality in society. The Minister of Social Affairs then declared that she withdrew whatever she had said so far, indicating that she would be in support of inequality. The Prime Minister used a significant part of his speech at the opening of the Parliament on October 4 2005 to underline his support of equality.

## Third story:

### On the unacceptability of (ethnic) difference

A week after the media campaign against the Minister of Social Affairs, another case came up involving a lesbian member (born 1953) of the Danish People’s Party, who was also an MP, and at the time running for major of Copenhagen at the elections on November 15, 2005. She presented discriminating and racist information about Muslim immigrants on her web page, describing immigrants as cancer cells in society, suggesting that criminal immigrants should be sent to prisons in Russia for the low price of 25 Danish crowns per day.

After press reactions, the MP withdrew the material and denied her support of (some of) the views expressed on the webpage, claiming that it had been placed there by her webmaster. A short time later, she was asked to resign her membership of Parliament. The public relations officer of the party proclaimed on television that the party would not accept “vulgar, sickening and embarrassing” comments.

One of her major rivals, a young male liberal candidate running for the post as major, produced posters about the overrepresentation of criminality among young male immigrants without strong reactions in the press.

## Fourth story:

### On the unacceptability of imperfection – on masculinity and exclusivity

In September 2005, a well-known male Danish artist, filmmaker, journalist, and TV-commentator (born 1937), now living in Haiti, published a autobiography called *The Imperfect Human Being: Scenes from My Life*, which got very positive reviews.

On October 7 winds changed and a strong media campaign was started by a Danish tabloid famous for its profits from and advertisements of sexual services. The author/artist was condemned as snobbish because he expressed a taste for expensive Armani clothing. He was criticized for demonstrating a lecherous and “lordly/feudal mentality”, in describing his “colonial” sexual relationships with a (probably) 17-year-old Haitian girl, the daughter of his cook.

His title (Honorary Danish Consul) was revoked. His contract with a Danish television channel to comment at future Tour de France events was cancelled. He chose to withdraw from guarantees for public funding of a future film production. Media attention has been overwhelming. His erotic scandals have secured newspaper sales (and book sales) for the hard-pressed media of modernity par excellence. He has been both supported and condemned by feminist researchers. Danish newspapers have recently launched a three-year and very expensive advertising campaign to secure market shares.

## Fifth story:

### On gender and knowledge

At the end of September 2005 it was announced that the new Rector of the University of Copenhagen would be a male physician and former Dean of

the Medical Faculty, thus replacing the so far only female rector in the more than 500-year-long history of the university. This female rector would also be the last one to be elected during the period of the so-called university democracy, which lasted from 1970 to 2005. During this period the number of female candidates at the university increased from 20 percent to 50 percent. The number of women among full-time scientific employees increased from 18 percent to 22 percent on average during the same period of democratic reign. The female share of the privileged “scientific estate” in the research community has thus hardly increased over the last generation.

## Sixth story:

### On gender and government

In February 2005 the former liberal-conservative government was re-elected. It renewed its dependence on the support of the populist social-conservative and islamophobic Danish People’s Party led by the country’s most influential woman. The social democrats changed their leader to a young cosmopolitan woman, with a career in the EU-parliament behind her, but no experience of national politics. Besides being married into the British social democratic leadership, she was immediately nick-named “Gucci-Helle”, indicating her taste for expensive dressing and the distance to the rank and file of the party.

On October 15, a new Crown Prince was born, thus silencing the discussion about the need for a change of the succession laws to the Danish throne. Had the first-born child been a girl, she would according to the present rules have had to give up her rights to the throne for a later born brother. Now there will be kings of Denmark for the next two generations, thus leaving the reign of Margrethe II as a parenthesis in the Kingdom of Denmark. The former parenthesis during the reign of Margrete I occurred about 600 years ago, when the merchants belonging to the Hanseatic League were strong.

## Seventh story:

### On gendered strategies: “Kvinder bryd ikke sammen, bryd ud” – “Women, do not break down, break out”.

This was one of the slogans of the feminist movement in the 1970s. Since then, the number of depressions has grown rapidly all over the (Western) world. Depression is becoming a major health problem (especially for



women), and the production of drugs for the treatment of it is becoming a major source of income for the medical industry.

Rapid changes in professional life and family life occur everywhere. In eastern and southern Europe as well as in South-East Asia fertility rates decline rapidly. In Nordic and Western countries, individualization processes have led to the individuals' themselves having to take responsibility for their success and failure.

Ambitions are skyrocketing, and a society characterized by status, privileges, excellence and "feudal" characteristics seems to be on the way back. Stress and illness seem to be some of the Nordic "individualized" patterns of reactions. International comparisons describe the Nordic countries among the highest ranking in terms of human well-being and development.

"Depression expresses a human dilemma in a society where the highest value is independence, a society characterized by personal responsibility and personal insecurity", writes French sociologist Alain Ehrenberg.

## Scientific excellence in context

### On reframing: ideals, orientations and combinations for the production of knowledge by men and women in world society

In 1974 Dutch legal sociologist, Professor and former Director of the library at the Peace Palace in the Hague (1952–69), Bart Landheer, produced a small book called *The Role of Knowledge in the World System*:

"Our patterns of consciousness have not only a time-dimension but also a space-dimension ... the knowledge which the worldsystem needs most, is a critical form of knowledge that analyzes reality and formulates its implications and possibilities. This critical type of knowledge is more difficult because it requires the feeling of global social responsibility of the scientist. We need a global form of knowledge for a global society. The global forms of knowledge have the task to formulate the real global values. There is a need for a world civilisation of which the values can be formulated in relation to a structured system rather than to a formalistic conglomerate of nation-states and individuals. A worldsystem must be projected as permanent although not as static. This different time-aspect is highly significant because a number of civilisational patterns which play a role in the world possess a more constructive awareness of time than the modern mechanical time-concept. For a worldsystem there is time: the many centuries to come.

Society, as a matter of ethical and moral alternatives, is taboo in modern society because this view commits the unforgivable sin of reducing the complex to the simple. The values of the worldsystem are in essence the global adaptation forms of mankind as a whole. This means survival-values rather than the values of affluence or power."

From 1985 to 1999 an annual conference was held in Toblach (Alto Adige, Südtirol), the “Toblacher Gespräche”, dealing with environmental issues and with internationally acknowledged experts as participants. The goal was to inform the public about environmental problems, and to sensitize it to environmental issues and discuss possible solutions. The topics were tourism, mobility and transportation, the future of agriculture, construction, “Die ökologische Wende – für eine Zukunft mit Zukunft”, energy, health, work, sustainable wealth, “Heimat”, commerce, beauty and visions and experiences for the 21st century. The results of the discussions were published as twelve annual theses, each about three pages and now available on the Internet.

I came across the 1992 Toblacher Thesen on “Health and Sustainable Wealth” in the beginning of the 1990s and have kept a copy in my diary ever since. The 1992 Toblacher Thesen addressed the threat to the health of humans and nature. There is a polarization between overfed, overstressed and relationally disturbed minority part of the world, on the one hand, and the huge parts living below the subsistence level, on the other. Thesis 6 says that sustainable wealth will mean an increase in health and quality of life. The motto is “Langsamer, weniger, besser, schöner” (“Slower, less, better and more beautiful”).

The 1998 Thesis 12 on *beauty* sees beauty and sustainability as an orientation towards a sustainable art of life. At the turn of the millennium, the art of life is about a sustainable lifestyle. The surplus of options today is a threat to our ability of orientation and our independence. The limit is our chance. The resources of fantasy, creativity and beauty are unlimited. We need a personal and social aesthetic of measure, simplicity and poise. In 2005 the talks had been reorganized and dealt with “Umbauen für die Zukunft: Wie bringen wir das bebaute Erbe in das Solare Zeitalter” (“Reconstructing for the Future: How to Bring the Constructed Heritage into the Solar Age”), reacting to the challenges from the decrease in available fossile fuel.

In 1985, just before he died, the great Italian author Italo Calvino gave a lectures on his ideals of literary quality for the next millennium at Harvard University. Ten years later his *Lezione Americani: Sei proposte per il prossimo millennio* was published in Danish (“Til det næste årtusinde” 1995). The ideals Calvino suggests are lightness, quickness, exactitude, visibility, and multiplicity and – as a sixth unpublished lecture and ideal – *consistency* (“Leggerezza, rapidità, esattezza, visibilità, molteplicità, coerenza”).

Having been on the board of the (former) Danish Social Science Council, these are all qualities that seem useful to me – not only for literature but also for the creation of knowledge in the 21st century. Knowledge is not presentation of facts and information but rather presentation of understanding, interpretation and orientation.

I suggest a shift of paradigm in relation to the frame within which sustainable, useful and relevant research by men and women is produced. The quality of this research could be measured by diversity of standards combining those originating from spiritual wisdom traditions, traditional knowledge, and modern Western research. “New” and inclusive participatory research in local and global communities may produce new dynamics and insights for the benefit of the people of the world to increase the art of life.

The Arctic Human Development Report (2004) mentions an interesting example of this combined approach:

“Russian researchers have developed a device that combines a number of traditional and technical concepts: The Gas Discharge Visualization camera. Based on the meridian system known from acupuncture and the photonic energy emissions from living bodies, the camera captures light emissions after an individual is subjected to electrical stimulation. A computer then models the individual’s health profile. This device links traditional healing, oriental philosophy, and the latest electronic and computer technologies in a new diagnostic tool that may assist in the quantification of health and well-being. This device is also now being used in research projects in the United States.” (164–165)

## Comments on the questions for the seminar

**What are the advantages and/or problems created by the present understanding (of the concepts of scientific quality and excellence) – focusing on gender research?**

Advantages: security, order, no break up (i.e. conservation) of knowledge, gender and ethnic hierarchies in the production of science and research – conserving continuity and modernity including modern values.

Problems: no adaptation to shift from national to global and world orientation; under-using world traditions of knowledge, overemphasizing rationality, and under-using the potentials of combinations and cooperation between different forms and traditions of knowledge production in the Western and Nordic countries.

**How are the concepts of scientific quality and excellence developing within the research community and among gender researchers?**

It is my impression that in the social sciences the concepts have not been welcomed or developed strongly. Traditional standards and measures of disciplinary knowledge are still very strong. They are well known, accepted,

and considered reliable, and they reduce the heavy burden of arguing for new criteria, standards and values, which are placed on evaluators, whether the evaluations concern degrees, positions, funding or prioritization of subjects and fields of research.

Breaking up traditional standards and criteria also means redistributing privilege in all these areas. As we can see from the development of the academic positions at Nordic universities over the last generation, traditions are hard to change. University democracy has so far hardly managed to change gendered and hierarchical knowledge traditions.

Maybe it has changed university mentality and culture more from an elitist conservative self-perception into an egalitarian welfare state ethos. Moves towards new forms of funding research – more market-oriented financial regimes – will clearly redistribute privileges and status, but such moves towards differentiated research regimes are viewed with severe scepticism at least amongst many actors in the present influential generations in the Nordic research environment. Excellence may be considered a value in business life, but not necessarily in public life and in educational and research institutions.

## By way of conclusion

We clearly need a reorientation of research in the 21st century, but maybe we need an orientation towards content and telos, a moral and ethical orientation for knowledge production, rather than the status orientation of criteria of excellence.

*The Danish Encyclopedia (Den Store Danske Encyklopædi)* says that “excellence” means “order of precedence”. Until 1913 ministers were “excellencies”. Danish women got the right to vote in 1915. We have thus never had female Excellencies. That does not exclude the fact that there might be an excellent female and gendered contribution to the development of knowledge relevant for world society.

### References

- 
- Arctic Human Development Report (AHDR) (2004), Akureyri: Stefansson Arctic Institute.
- Calvino, Italo (1995): *Til det næste årtusind: Amerikanske forelæsninger*, Copenhagen: Tiderne Skifter.
- Ehrenberg, Alain (2004): *Das erschöpfte Selbst: Depression und Gesellschaft in der Gegenwart*, Frankfurt/New York: Campus Verlag.

- Landheer, Bart (1974): *The Role of Knowledge in the Worldsystem*, Assen: Van Gorcum & Comp. B.V.
- Leth, Jørgen (2005): *Det uperfekte menneske: Scener fra mit liv*, Copenhagen: Gyldendal.
- Akademie der Toblacher Gespräche (2006): *Archiv Toblacher Gespräche 1985–1999*,  
<http://www.toblacher-gespraech.e.it/archiv.php>, February 28, 2006.
- Akademie der Toblacher Gespräche (2006): *Toblacher Gespräche 1985–1999*,  
<http://www.toblacher-gespraech.e.it/alt.php>, February 28, 2006

# INDICATORS OF SCIENTIFIC QUALITY

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The Swedish Research Council has three main tasks: research funding (the most prominent one), research policy and research information. The Analysis Unit is part of the Department of Research Policy Analysis. We work with research policy, carry out general evaluations and analyse various issues, e.g., the conditions for Swedish researchers. An important area of work is statistical studies on different topics: research resources, research personnel, new doctorates awarded, publications, citations and patents.

## Introduction

In order to find indicators of scientific quality, we study instances where statements about scientific quality are made. We therefore turn our attention to cases of peer review evaluations of research. The peer review process involves assessment of scientific work by experts in the field. While peer review is generally accepted as the best way to evaluate research, it is not a uniform method. Peer review is used in many aspects of research evaluation.

### Cases where peer review is used

- Ranking of applications for research grants
- Ranking of applications for research positions
- Evaluation of research projects/fields
- Referee system of scientific journals
- Citations in scientific journals
- Awarding Ph.D. degrees
- Invitations to speak at scientific conferences
- Scientific awards and prizes

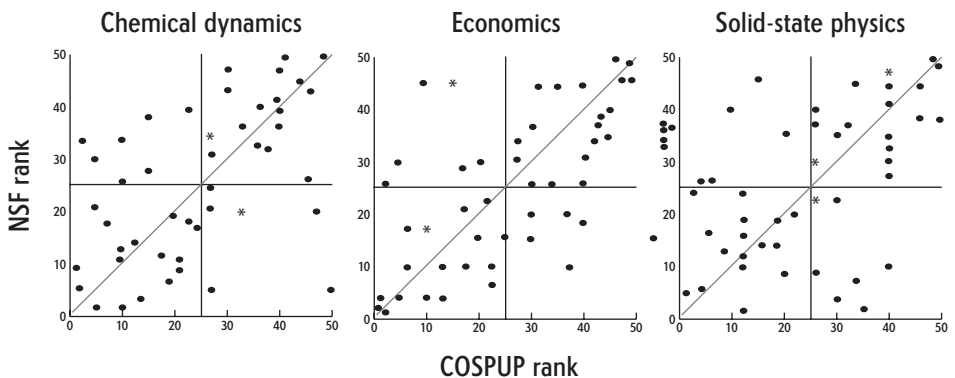
In this presentation, our focus is on indicators of scientific quality derived

from counting publications and citations in a publication database; i.e., bibliometric indicators. Peer review is involved when a paper is accepted for publication, and also when a paper is cited in another paper. The bibliometric indicators of scientific quality have the merit that they are based on many such peer review instances, and are therefore statistically more stable than other indicators when the number of papers and citations is large.

## A note on peer review

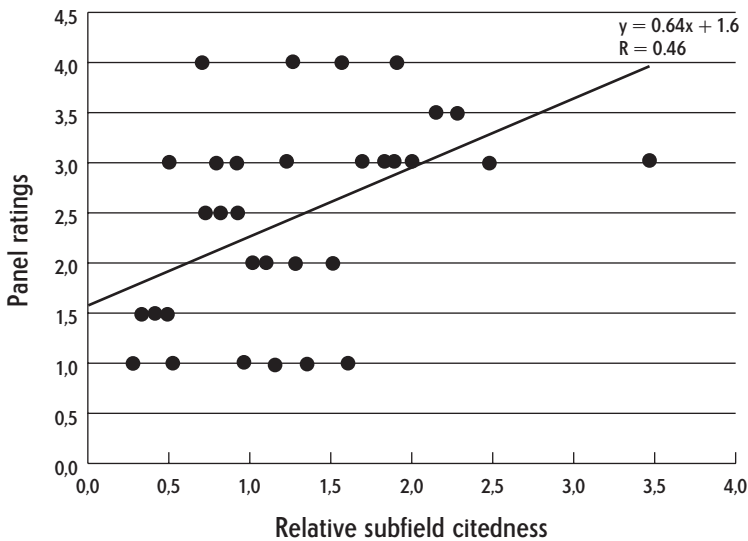
It should be kept in mind that different peer groups can give quite different opinions of a researcher's or a research group's performance. We exemplify this phenomenon with the result of a study published in the journal *Science* in 1981. Three subject areas were chosen: chemical dynamics, economics and solid state physics, each with 50 applications for research grants from the National Science Foundation (NSF). The NSF had ranked the applications in the normal way, using groups of peers, and had accepted half of the applications. Afterwards, the NSF Committee of Science and Public Policy asked other groups of peers to rank the same applications. The rankings can be compared in Figure 1, with the original NSF rank on the Y-axis and the new rank on the X-axis. If the two peer review processes had come to the same ranking, all the dots would have been positioned along the green line. This, however, was not the case. Instead there are a number of applications where the funding decisions would have been reversed if the new ranking had been used.

Figure 1. 50 applications in three subjects were ranked 1–50 by NSF peer groups and later by other peers independently chosen by NSF's Committee of Science and Public Policy (COSPUP). Roughly half of the applications were accepted. (\* denotes two identical data points) From Cole, Cole & Simon, "Chance and Consensus in Peer Review", in *Science*, 1981, 214, 881–886.



Another example is a study from Norway in 2004, where Aksnes and Taxt compared peer review ranking with bibliometric citation scores. The result is similar. The plot is scattered but a slight correlation can be seen (Figure 2.). We note that the groups with very high citation scores are all rated highly by the peers. This can be interpreted as follows: if a research group has very high citation scores it is normally judged to be very good by most peer groups, but if the group has low citation scores it is not necessarily judged to be a mediocre group. The group could be doing applied work or have other good qualities, which the citation-based index does not measure. However, a carefully executed citation analysis can give a good indication of the publication performance of a research group or a research field. The bibliometric results must of course always be interpreted with care. We will describe a common technique for such a citation analysis.

Figure 2. Panel ratings and average number of citations per paper relative to the subfield for 34 Norwegian research groups. From Aknes & Taxt, "Evaluation Correlation", in *Research Evaluation*, April 2004, 33-41.



## The publication database

Our database is the full Web of Science from Thomson Scientific/ISI from 1982 to the present day. Everyone connected to a university library can access the web services of this database. It is currently the largest publication database in the world and the only one that covers all science areas, unlike



for example Medline, which covers only the life sciences. It is also the only database with complete reference lists and complete address fields. This allows us to see exactly who cites who and where.

### Database coverage

- A total of 23,000,000 papers
- 408,000,000 citations in these papers
- Around 1,200,000 new papers every year
- 19,000 have at least one Swedish address
- A total of 12,846 different journals in 2004
- 3,673 in life sciences
- 2,245 in social sciences and humanities
- 1,676 in natural sciences
- 1,751 in engineering and materials sciences
- 252 subject fields

We can study papers from countries or universities divided into different research areas, or papers from research groups. There are a number of bibliometric measures that can be used in these studies. For general descriptions of bibliometric methods, see van Raan (2004).

### Bibliometric measures

- Number of papers (P)
- Number of citations (C) – total number of times the studied papers have been cited the first 2 years after publication
- Citations per paper (CPP) – average number of times each paper is cited the first 2 years after publication
- Journal citation score (JCS) – average number of times a paper in the journal in question has been cited during the first 2 years after publication
- Field citation score (FCS) – average number of times of a paper in the field has been cited during the first 2 years after publication
- Journal impact factor (JIF) – the importance of a journal according to Thomson Scientific, closely correlated to “expected” future number of times a paper in that journal will be cited.

From these basic measures we can derive two more measures:

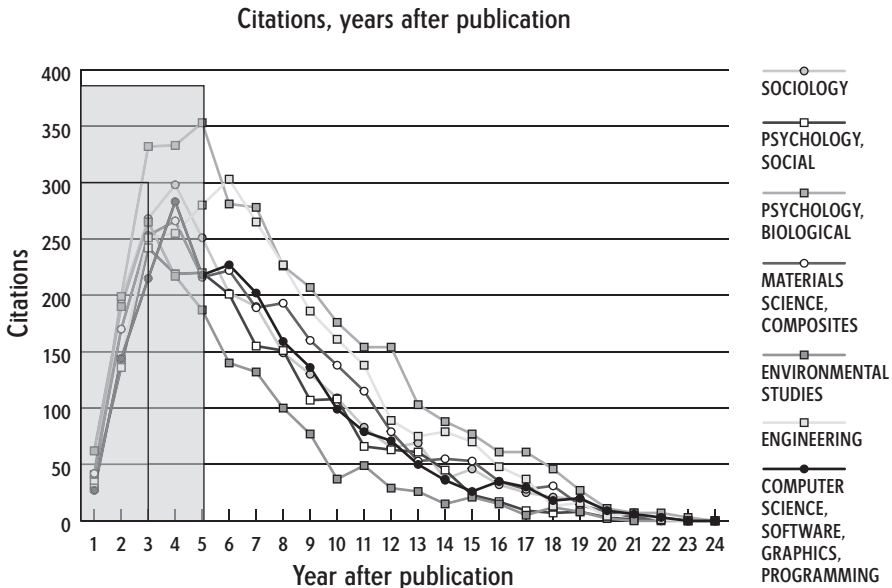
### Derived measures

- Citations per paper related to the field citation score (CPP/FCS). This relative citation rate is often called the “crown indicator”.
- Journal citation score related to the field citation score (JCS/FCS). This can be seen as the “difficulty level” of the journal relative to the field.

All the above measures can be fractionalized by the number of authors (or addresses) of each paper.

When we count how many times a paper is cited we normally use a two-year “citation window”, which allows us to analyse more recently published papers. A five-year window is sometimes used. The correlation between citations after two years and citations after five years is very high; i.e. a ranking based on the number of citations does not change significantly if we change the length of the citation window (Figure 3.).

Figure 3. Number of citations years after publication, notice the similar patterns for different areas of research. Source: Analysis Section, Swedish Research Council; calculations made from data from Thomson Scientific.

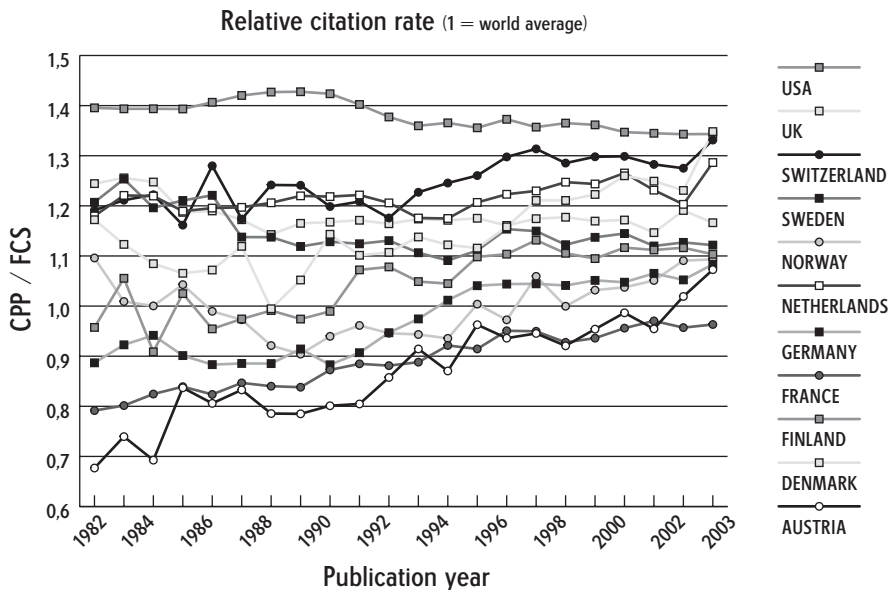


The “crown” indicator is a particularly interesting indicator. It tells us whether the studied papers are cited more often than average in the subject field where they are published. For example, a score above 1 for a researcher’s papers means that he or she is cited more than the average researcher in the field.

## Examples of bibliometric measurements

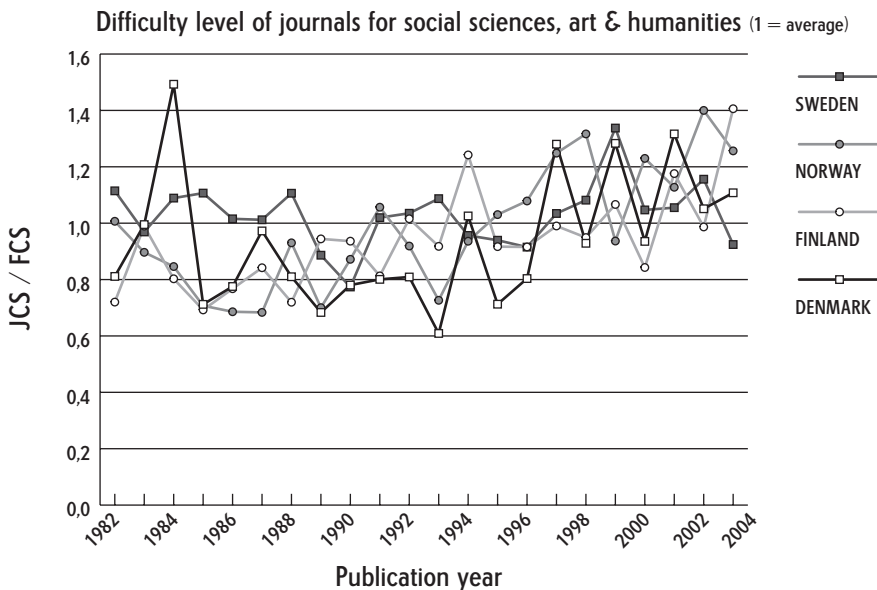
Let us show some cases where these indicators can be used. First, we will look at all the papers produced by 11 selected countries (Figure 4.). Here the above bibliometric measures are fractionalized with respect to the addresses of each paper. If a paper has two addresses from Finland and one from Sweden, then  $1/3$  of the paper is counted as Swedish. We see that Sweden has a slightly decreasing crown indicator, which means that Swedish authors are cited relatively less over the years. But the score still remains above 1. Denmark and the Netherlands have high scores, and Austria’s scores are increasing.

Figure 4. Trends in relative citation rate for 11 countries ( $1 =$  world average). From: Analysis Section, Swedish Research Council; calculations made from data from Thomson Scientific.



In the next case we take a closer look at the social sciences, arts and humanities. We study papers published in journals classified by Thomson Scientific as belonging to the social sciences or the arts and the humanities. In this example we do not use the relative citation rate of the papers. Instead we calculate the average journal difficulty score for the papers ( $\bar{x}$  = average journal difficulty score in the respective field). This average is given for each Nordic country (Figure 5.). We can see that the general trend in the Nordic countries is improving slightly, from just below 1 to just above 1. This means that Nordic authors publish in journals that are cited a bit above the average.

Figure 5. Trends in journal difficulty level for papers from the Nordic countries. From: Analysis Section, Swedish Research Council; calculations made from data from Thomson Scientific.



This conference is about gender research, and so we now turn to this subject. One of the 252 subject fields in the database is women's studies, which consists of journals classified as belonging to women's studies by Thomson Scientific. Of course, many papers in gender studies are published in journals in other subject fields, but such is the case for every subject. Still, we use the subject field women's studies as an example. (For a more sophisticated

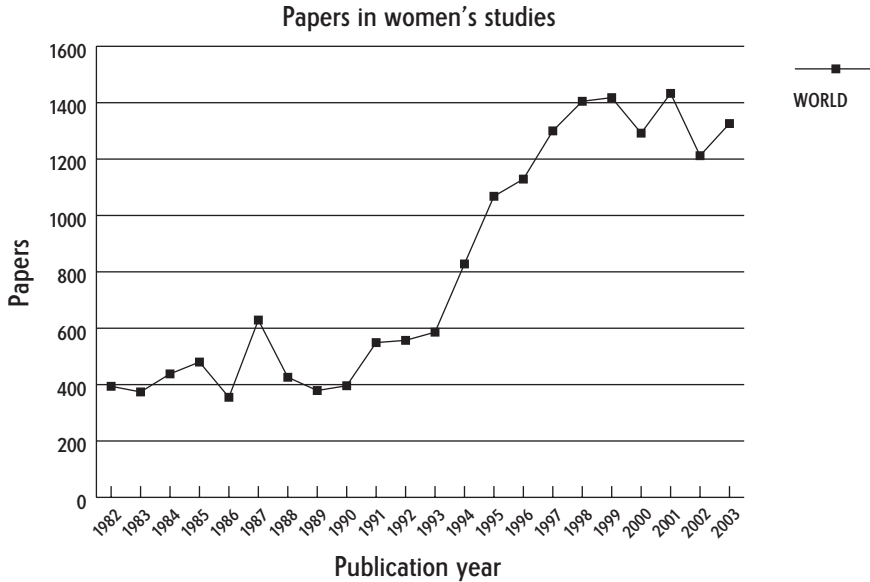
analysis of papers in gender studies we may select key words to find also papers from other fields.) The journals in women's studies are listed below (Table 1.). Note that a journal can belong to several fields.

Table 1. Journals in the subject field women's studies and their respective journal citation scores. From: Analysis Section, Swedish Research Council; calculations made from data from Thomson Scientific.

| <b>Title</b>                                      | <b>JCS</b> |
|---|------------|
| Affilia – Journal of woman and social work        | 0.33       |
| Asian journal of women's studies                  | 0.11       |
| Australian feminist studies                       | 0.10       |
| European journal of women's studies               | 0.17       |
| Feminism & psychology                             | 0.50       |
| Feminist economics                                | 0.50       |
| Feminist review                                   | 0.03       |
| Feminist studies                                  | 0.19       |
| Frontiers – a journal of women's studies          | 0.03       |
| Gender & society                                  | 1.14       |
| Gender work and organization                      | 0.29       |
| Journal of gender studies                         | 0.06       |
| Journal of women & aging                          | 0.17       |
| Journal of women's health                         | 1.25       |
| Journal of women's health & gender-based medicine | 0.75       |
| Nouvelles questions feministes                    | 0.00       |
| Psychology of women quarterly                     | 1.53       |
| Radical philosophy                                | 0.06       |
| Reproductive health matters                       | 0.68       |
| Sex roles   | 0.39       |
| Signs   | 0.29       |
| Social politics                                   | 0.53       |
| Violence against women                            | 0.75       |
| Women & health                                    | 0.81       |
| Women & politics                                  | 0.29       |
| Women & therapy                                   | 0.10       |
| Women's health issues                             | 0.22       |
| Women's studies international forum               | 0.30       |

The next figure shows the total number of papers in the field women's studies as identified by Thomson Scientific (Figure 6.).

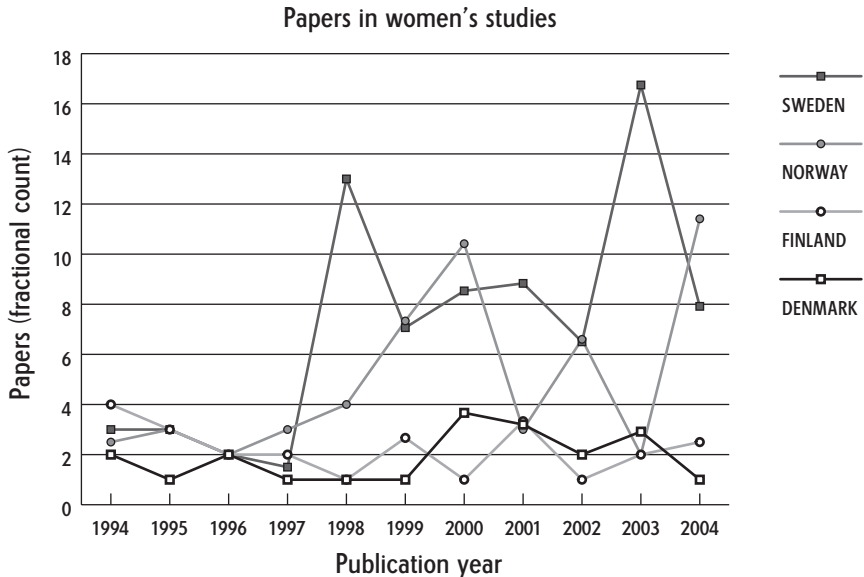
Figure 6. Number of papers in the field women's studies – world total. From: Analysis Section, Swedish Research Council; calculations made from data from Thomson Scientific.



The sharp increase in 1995–1998 is very likely due to new classifications of journals by Thomson Scientific.

In Figure 7. we show the size of the field, i.e. the number of papers in the field, for the Nordic countries. In total the Nordic countries have about 1.5 percent of the world production of papers in the field. This can be compared to Sweden's average share, total for all fields, of 1.7 percent. Women's studies is a small field in the database. Its size is a quarter of the average field size, and since the number of papers is as low as 20 papers a year for the four Nordic countries together, no crown indicators have been calculated. Higher numbers are needed for the indicator to be stable.

Figure 7. Number of papers in the field women's studies from the Nordic countries. From: Analysis Section, Swedish Research Council; calculations made from data from Thomson Scientific.



## Conclusions and suggestions

Nordic gender studies, as measured by the subject field in the Web of Science database, is not very visible internationally. This is also true for most of the arts and humanities. There are good reasons for changing this tradition. The Vice-Chancellor of Stockholm University, Kåre Bremer, argues (our translation): "Surely, good research is of international interest, even if it is about Swedish phenomena and conditions. It is important that the research is made known, has an impact, and therefore, all researchers have good reasons to think about their publication strategies."

Furthermore, the Swedish Minister for Education and Research, Leif Pagrotsky, has proposed that more doctoral theses in the humanities and social sciences should be written in English.

We would like to propose the following simple suggestions for Swedish and Nordic gender research to become more visible in the international arena:

- Publish more in international journals, preferably in international cooperation
- Publish in journals included in the Web of Science or in similar databases

- Publish in journals with a high impact
- Encourage your colleagues to comment on your work and cite you in Web of Science journals
- Make your favourite journals apply to Thomson Scientific to get into the Web of Science or switch to other journals

Greater international visibility should not be seen as a way of artificially enhancing the status of the research, but rather as a way to contribute to and get feedback from the international scientific discussion.

We would like to point out that although the Nordic gender studies journals *Kvinnvetenskaplig tidskrift* and *Nora* fulfil the requirements to be included in the Web of Science, they are not included. If you want to have a journal included in the Web of Science you should go to the following webpage at Thomson Scientific/ISI: <http://www.isinet.com/selection/>

*There you will find the following text:* Do you wish to submit a journal for evaluation?

ISI needs at least three consecutive current issues to complete an evaluation. Please send the most current issue of the journal and then each subsequent issue as soon as each is published to the following address:

Publication Processing Department  
ISI  
3501 Market Street  
Philadelphia, PA 19104  
USA

We hope that in the future Swedish and Nordic gender studies will be more visible internationally, and so will give a greater contribution to the international discussion in the field.

## References

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- Aksnes, Dag W & Taxt, Randi Elisabeth (2004): "Peer Reviews and Bibliometric Indicators: A Comparative Study at a Norwegian University" in *Research Evaluation*, 1, 13, 33–41, 2004.
- Cole, Stephen et. al (1981): "Chance and Consensus in Peer Review" in *Science*, 214, 881–886.
- van Raan, Anthony F J (2004): "MEASURING SCIENCE Capita Selecta of Current Main Issues" in Moed, H F (ed.) (2004): *Handbook of Quantitative Science and Technology Research*, Netherlands: Kluwer Academic Publishers.



# GENDER RESEARCH AND EXCELLENCE

## Some Recommendations and Future Perspectives

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The EU report *Gender and Excellence in the Making* (European Commission 2004) has done a ground-breaking job. It focuses on an important question: how to minimize gender bias in the definition and measurement of scientific excellence.

The report scrutinizes how women make it through the academic system in terms of existing standards for excellence. It identifies problems and barriers. Linking issues of gender and excellence, the report clearly indicates that the debate about equal opportunities for women in research has reached a new level.

What is at stake in the discourses of the report is not only to increase numbers and counter-act the mere under-representation of women in science by various kinds of special support actions. Such actions are still important to overcome gender biases in academia, but they are far from enough!

Going beyond the question of under-representation in general, the report asks whether women to as high a degree as men can reach the highest levels of recognition in the academic system, i.e. recognition for excellence, or whether different kinds of biases and structural problems prevent it. Moreover, the report forcefully suggests that it is crucial to question the system (the definitions and ways of measuring excellence) rather than the women. Criteria of excellence are not – so the report says – universal, value- and gender-neutral. If women are not recognized as excellent in as high a degree as men, the problem lies rather with the definitions than with the women. Or, to rephrase the message of the report: Women should not only be integrated at the rank-and-file levels of science, but they should be given full opportunity to reach the highest levels of recognition. Women should be given the full opportunity to achieve scientific excellence and to be fully recognized for their achievements of scientific excellence.

In this lecture, I shall not discuss women's achievement of excellence in general. My task here is to discuss excellence in gender research. These are the questions I have been asked to address in this presentation:

How does gender research perform in today's academic landscape?

Does it perform well in terms of excellence and quality?

Can its performances be improved?

If the answer to the last question is yes – in what ways can they be improved?

The reason why I take my point of departure in the report *Gender and Excellence in the Making*, is because it may contribute to our understanding of the position of gender research in relation to excellence, even though, primarily, it deals with the position of women in science and not so much with that of gender research.

First of all, the majority of today's gender researchers are women, so the biases against women, traced in the report, are likely to have an impact on gender researchers as well. Some of the questions the report asks regarding women's possibilities for being recognized as scientifically excellent, are also relevant for the discussion of the possibilities for gender research to be recognized as scientifically excellent.

Secondly, I find the report's way of emphasizing that excellence is not a phenomenon which can easily be measured "objectively" important for the evaluation of the position of gender research in relation to current academic standards for excellence. The report underlines that decisions about who is excellent and who is not are situated and context-related. Assessment criteria are socially constructed. So I will expand the argument of the report and suggest that if gender research does not fit the criteria for excellence, it does not necessarily mean that the problem lies within gender research. What should be scrutinized are perhaps the criteria.

So, with this in mind, let me take a look at how Swedish gender research performs in terms of excellence.

I will start with a definition of different levels of gender research, which must not be confused when speaking of the potentials of gender research to perform excellence.

In the ensuing sections, I will raise some questions and make some recommendations concerning the different levels of gender research, identified in the first section. First, I will look at basic levels of gender research, where gender is included as a minor aspect or as a perspective among others. Then, I will shift the perspective to more advanced levels, where gender is the focus of the research; I am going to take a look at excellence performances of Swedish gender-focused research, measured against the background of standard indicators for academic excellence. As my last point, I will – briefly – consider the newest trends in academic organization of excellence and ask how gender research can position itself in this context. I will conclude by summing up four recommendations to the Committee for Gender Research of the Swedish Research Council, which I have argued for in the previous sections.

## Gender research – a definition of different levels

In a recent report, written by Hillevi Ganetz for the Committee for Gender Research (Ganetz 2005), it is documented that it is necessary to distinguish between at least three levels of gender research to give an adequate account of the ways in which applicants to the Swedish Research Council react to the box in the application form which they are asked to tick if their application concerns gender.

According to Ganetz' analysis, the following three levels have to be taken into account:

- I *Gender aspects* – i.e. a gender dimension, understood as some kind of gender analytical and gender reflexive approach, is included, but only as a minor concern.
- II *Gender perspectives* – i.e. a gender analytical and gender reflexive approach is included as one line of inquiry among others equally prioritized analytical angles.
- III *Gender focused research* – i.e. theoretical, methodological, epistemological and empirical reflections on gender are a primary focus and pivot of the research, and the research questions are systematically informed by the decades-long tradition of theorizing gender, gender identities and power-laden gender relations as well as by the equally long tradition of reflecting on methodological approaches to the analysis of gender issues.

On this third level of gender focused research, Ganetz identifies two branches:

- A One is *disciplinary gender focused research*, which pursues questions of gender and gender relations within the theoretical, methodological and empirical framework of a discipline – history, psychology, literature, biomedicine, economy, etc.
- B The other is *interdisciplinary gender focused research*, which constructs problems, analytical approaches and theoretical reflections while going beyond the borders of the disciplines.

To this taxonomy, I shall add that the last category of gender focused research, B, can be divided into the following three levels:

- 1 *Multi-disciplinary gender focused research* – the empirical, analytical, methodological and theoretical approaches are defined within the framework of the disciplines, but the different disciplinary ways of working are added to each other, creating a more complex picture;
- 2 What I will call *interdisciplinary gender focused research*, thus limiting the meaning of “interdisciplinary” to situations where disciplinary boundaries

are questioned and new synergies are created in terms of both empirical, analytical, methodological and theoretical approaches;

- 3 *Trans-disciplinary gender focused research* – the empirical, analytical, methodological and theoretical approaches go beyond disciplinary outlooks in the sense that they are defined on the basis of earlier gender research, conducted beyond disciplinary boundaries and with no relation to a specific discipline. An example is the classic discussions of the concepts of gender and its relationship to sex. Another example is current debates on intersectionalities of gender, race, ethnicity, sexuality, class, nationality, etc. No particular discipline can be said to have a privileged access to the construction of these problems and the theorizings of them.

### Levels of gender research:

I Gender aspects

II Gender perspectives

III Gender focused research

III is divided into:

A Gender focused research within existing disciplines – history, psychology, literature, economy, biomedicine, etc.

B Interdisciplinary, gender focused research

III B. is divided into:

1) Multidisciplinary gender focused research

2) Interdisciplinary (in a specific sense, see text) gender focused research

3) Transdisciplinary gender focused research

## Basic level gender research excellence: gender aspects and gender perspectives

As a first comment to these definitions of the different levels, let me underline that this is not meant as a recipe for what I consider “right” or “wrong” ways of doing gender research. I do not, for example, think that trans-disciplinary gender research is the only “right” form. In many ways, I consider the different levels as complementary.

The definitions are meant as a taxonomy that can be useful in an attempt to classify and distinguish different kinds of endeavours that are taking place under the broad and umbrella-like heading “gender research”.

Excellence can in principle be reached on all levels, even at the first two ones: gender aspects and gender perspectives. But, in my capacity as a gender expert and gatekeeper for this new field of research, I will clearly underline that strict criteria for evaluation are necessary – even on the first two, basic levels.

It should, therefore, be a first and unavoidable prerequisite that researchers must explicitly account for:

- How they are doing gender research in terms of theories and methodologies
- Why they choose to integrate gender the way they do
- Why, for example, it is not relevant to take gender more thoroughly into account.

According to Ganetz' report, on the first two levels researchers unfortunately do not always take these prerequisites into account seriously.

A *second* prerequisite for excellence, even on the two basic levels of gender aspects and gender perspectives, is that a researcher can document that s/he has a general knowledge of the field and uses gender research literature that is relevant to her/his definition of the gender aspects or gender perspectives, included in her/his research. As Ganetz' report documents, this is also a prerequisite that is not always fulfilled on the two first levels of gender research.

There is evidently something to improve here. In my capacity as a gender studies expert and gatekeeper I would – against the background of Ganetz' report – strongly recommend that the Committee for Gender Research and the Swedish Research Council take the following steps to improve excellence:

First of all, I recommend that gender experts strictly evaluate the expertise in gender theory, methodology and analysis of applicants who indicate that their projects have a gender dimension. Gender experts should be used as evaluators on all levels, even on the basic levels of gender aspects and gender perspectives.

Secondly, I recommend that the Committee for Gender Research and the Swedish Research Council use the instrument of Gender Impact Assessment Studies, which was developed by the Women and Science Unit of the European Commission a few years ago (cf. EU Commission 2001: EUR 20017, 20018, 20019, 20020, 20021, 20022; see also the article on the Gender Impact Assessment of EU's Life Science research program: Klinge and Bosch 2005).

On behalf of the EU Commission, the Women and Science Unit of the Directorate General for Research initiated a major evaluation of the integration of gender perspectives in the 5th Framework Program for research. All the specific programs of the Framework Program, from the social sci-

ences/humanities to the life sciences were thoroughly scrutinized by gender experts, who had been commissioned by the Women and Science Unit to conduct Gender Impact Assessments. The reports, one for each specific program of the 5th Framework Program, documented in very convincing ways that gender would have been a relevant category in a lot of successful projects that, unfortunately, did not take this category into account.

The reports are available from the Women and Science Unit of the EU's DG Research and can be downloaded from: <http://www.cordis.lu/science-society/library.htm>. I can warmly recommend them.

In particular, I recommend that the Committee for Gender Research and the Swedish Research Council conduct a Gender Impact Assessment as a follow-up of the analysis by Hillevi Ganetz (Ganetz 2005). A Gender Impact Assessment could answer additional questions to the ones discussed in the Ganetz-report. It would highlight the important question whether Research Council-funded research generally applies gender as an analytical category wherever it is relevant.

## Excellence in gender focused research in Sweden

I shall now shift the perspective to gender-focused research. I will look at the excellence performance of Swedish gender-focused research, measured against the background of standard indicators.

I have been Managing Director of the European gender research association AOIFE (Association of Institutions for Feminist Education and Research in Europe) for almost five years. Via this position, I have gained a lot of insight in the very different conditions for doing gender research in different European countries. Against this background, I will start this section by stating that I definitely think that Sweden is one of the European countries where gender research has achieved very much in terms of excellence. This assessment is based on such standard academic excellence indicators as institutionalization and external recognition in terms of allocated resources, positions and infrastructures – i.e. factors which today generally play a big role as academic excellence indicators. The fact that Swedish gender research is in the forefront as these kind of excellence indicators are concerned does of course not mean that it is more intellectually excellent than, say, Greek, Italian or Danish gender research, which does not have the same resources, positions and infrastructures.

Swedish gender research has a high international standard, but so does gender research in many other countries. On the other hand, the resources

and infrastructures, which give Swedish gender research a relatively better position than gender research in for example Greece, Italy or Denmark, indicate that more barriers against the institutionalization of gender research have been broken down in Sweden for a number of reasons. Compared to a number of other countries, Swedish gender research has obtained a relatively better status and a higher degree of what may be defined as mainstream markers of excellence. In Sweden there is a substantial number of full professors, explicitly hired to do gender research both within the disciplines and on a multi-, inter- and trans-disciplinary basis. There is a national research school in gender studies with a substantial number of doctoral students. You can study gender extensively in the humanities and the social sciences, as well as within the biomedical and technical sciences. It is possible to take degrees in gender studies at all levels: BA, MA and Ph.D.

The fact that we are sitting here today, invited by the Committee for Gender Research of the Swedish Research Council, is an indication of what I would call mainstream excellence recognition. The mere existence of a Committee for Gender Research in the Swedish Research Council means that gender experts are part of one of the important bodies that set Swedish research agendas. All this is good and well deserved. I came to Sweden as a professor six years ago, and I am in fact still amazed about what my Swedish colleagues have accomplished in the struggle for excellence recognition. So what are the problems in Sweden? Are there any?

First of all, I think that it is a problem when suspicion is thrown on gender research via press campaigns against high quality research and well-esteemed researchers, for example, the recent campaign against Professor Tiina Rosenberg. Open dialogue, challenges and discussions are good. But unfounded accusations of researchers for scientific fraud is a sign that still existing biases against gender research in Sweden should not be underestimated. Sadly enough, it seems as if even Swedish society, which boasts of its equal opportunities policies, has not reached the stage of social and scientific maturity, where gender research can exist as a normal, self-evident mainstream part of research.

Secondly, I think that it is a problem that gender research in Sweden is not fully recognized as an area that should be funded on an equal footing with established disciplines (history, psychology, linguistics, etc.). Being an evidently highly qualified part of Swedish research, gender research ought to have as much resources as these areas.

I think that it is important to emphasize, again and again, that the amount of money, 10 million Swedish crowns annually, given to the Committee for Gender Research is ridiculously small, compared to the very high number of high quality applications the Committee receives. The fact that the



members of the Committee for Gender Research considered the amount of money to be incredibly small was – as far as I understand – also precisely the reason behind the restructuring initiated by the Committee in 2003. The restructuring meant that all gender research applications within the humanities and social sciences should be allocated to the disciplinarily oriented committees, which have much more money than the Committee for Gender Research. Considering the given conditions, the decision probably improved possibilities for getting funding for excellent gender research. Furthermore, gender research seems to have been granted more money altogether after the restructuring (cf Ganetz 2005).

But I think that it is important to underline that the restructuring did not solve all problems. It had a negative impact on the conditions for multi-, inter- and trans-disciplinary gender-focused research; the restructuring of the tasks of the Committee for Gender Research made multi-, inter- and trans-disciplinary gender-focused research “homeless” in the Research Council.

Therefore, I would recommend the Research Council and the Committee for Gender Research to commit themselves seriously to the solution of this new problem. For years gender researchers have argued for a double foundation of the area. Gender research is part of the disciplines, and it has reached excellence as such. This aspect of the excellence of gender research is counted for in the current structure of the Swedish Research Council. But, in Sweden today, gender studies is also institutionalized as an independent area, as a discipline of its own, or what I elsewhere have argued for as a post-disciplinary discipline (cf. Lykke 2004). Several indicators (for example, professorships, BA, MA and Ph.D. programs in multi-, inter- and trans-disciplinary gender studies) document that Swedish gender research has reached excellence not only as part of existing disciplines, but also as an area of its own, as a new post-disciplinary discipline. In Sweden today, it is not anymore a question whether or not gender studies should be institutionalized as an area of its own. It is, *de facto*, organized and recognized as such at a number of Swedish universities.

Therefore, I think that it is high time for the Research Council to find out how to match this double excellence status adequately, achieved by Swedish gender research. The Research Council should be able to assess and fund excellent gender research both within the framework of the existing discipline-oriented committees and within the framework of a committee which has the full competence and expertise as well as the adequate amount of resources to assess and fund excellent multi-, inter- and trans-disciplinary gender research.

Against this background, my third recommendation to the Committee for Gender Research is that it should use its position as part of an important



research agenda setting body to initiate a discussion about adequate ways of organizing the funding of gender focused research so that both its disciplinary and its post-disciplinary branches will be given equal possibilities to develop their excellence potentials.

## New trends in organizing and recognizing excellence – where do they leave the discussion of gender research excellence in the making?

In this section, I will comment on ongoing national and international endeavours to build excellence centres and networks. Excellence programs are mushrooming within national and international research funding bodies. In the 6th Framework Program for research of the EU Commission, a new instrument, called “networks of excellence”, has for example caught much attention lately. The joint Nordic research councils (NOS-SH) have recently started a new program for Nordic centres of excellence. In Sweden we saw the so-called Linné Program for excellent research, announced by the Research Councils. Endeavours such as these constitute a new level of academic excellence organization.

Professorial chairs, post-doc positions and doctoral programs to ensure new generations of excellent researchers are still important markers of top-level excellence of an academic area. However, if you want to compete within the framework of the new excellence programs, the performance that is required go beyond the level of individual excellence of a professor with a couple of excellent Ph.D. students and post-docs. The new excellence organizations are meant to cluster several excellent professors and their excellent research students and post-docs, often on a cross-institutional and/or cross-national basis, and in a more solid and committing consortium than a mere open network.

This new excellence organization is an important development in academia, and it is truly important to follow what happens to gender research at this level. In Sweden and in some other countries, gender research has reached the level of professorial chairs with research training programs, doctoral students and post-docs. But what about the new excellence organizations? Are there barriers to gender research at this level?

It is too early to judge. However, as a memento, let me refer to the recently offered program for Nordic centres of excellence of the Nordic research councils NOS-SH. After a two-stage application procedure, four

Nordic excellence centres were selected in the spring of 2005, all with male directors. Two of the centres are based on previously nationally funded excellence centres. When the Nordic research councils evaluated the program afterwards, they discussed why it seemed as if the selection procedure had had the unintended side effect that women and innovative research had been left out. The success rate of female-led projects from stage one to stage two was, for example, 17 percent against 40 percent for projects with a male project leader. It is also to be noted that the percentage of involved female professors and associate professors decreased from 22 percent to 13 percent from the second stage of the selection procedure to the final one. (Cf. Power point presentation by Eiríkur Smári Sigurdarson, Member of the Steering Committee for Nordic Centres of Excellence in the Humanities and Social Sciences, Rannis, NORIA Symposium 1: "A part-finding event for Nordic research", Oslo, September 22, 2005.)

It is too early to trace more precise reasons and trends here. But I think that it is important to keep an eye on the point I referred to earlier in my presentation: structural barriers that hinder women may stop gender research as well. The same may be true as regards barriers that hinder innovative research. They may also stop gender research, because gender research, more or less by definition, is innovative. An important trajectory of much gender research is its way of moving from critique of the gender blindness of existing science to transformations of outlooks, theories and methodological approaches. In this sense, a strong trend towards radical innovation of existing ways of producing knowledge is at the heart of gender research.

What might turn out to be a problem for gender research as regards the criteria set up by the new excellence programs, is the lack of social academic capital in terms of substantial amounts of locally matching funds and resources, and in terms of high-level access to research agenda setting bodies and academic decision-makers. Both of these factors are highly important additional criteria, when selection committees select candidates among applicants for excellence centre programs.

Individual excellence of the involved researchers and of the proposed research and research training projects are, of course, important prerequisites, and gender research can definitely compete with other kinds of research here. But in addition, the above-mentioned kinds of social academic capital, in terms of substantial amounts of local resources and back-up measures from host universities, are also a crucial part of the requirements of the new excellence programs: to be able to demonstrate access to this kind of social academic capital is still not a given thing for a new and controversial area like gender research.

My recommendation to the Committee for Gender Research is, therefore, to keep a vigilant and critical eye on the standards introduced by the

new excellence programs, and to set up a program for the funding of launch pads for gender research applications to the new excellence programs.

## Conclusion

I will briefly sum up my recommendations for the Committee for Gender Research and the Swedish Research Council. To reach for more excellence in gender research, the Swedish Research Council should:

- Secure strict quality assessment, also at basic levels of gender research: research with gender aspects and gender perspectives.
- Conduct a Gender Impact Assessment exercise (after the model of EU's Women and Science Unit) in order to analyse whether gender is included wherever relevant in Research Council funded research.
- Match the different dimensions of excellence of gender-focused research: gender-focused research as part of existing disciplines and gender focused research as a new post-disciplinary discipline.
- Create support actions for the launching of excellence applications within gender studies.

### References

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- European Commission (2001): *Gender in Research: Gender Impact Assessment of the Specific Programmes of the Fifth Framework Programme – Quality of Life and Management of Living Resources*, EUR 20017, Brussels.
- European Commission (2001): *Gender in Research. Gender: Impact Assessment of the Specific Programmes of the Fifth Framework Programme – Energy Sub-programme*, EUR 20018, Brussels.
- European Commission (2001): *Gender in Research: Gender Impact Assessment of the Specific Programmes of the Fifth Framework Programme – Environment and Sustainable Development Sub-programme*, EUR 20019, Brussels.
- European Commission (2001): *Gender in Research: Gender Impact Assessment of the Specific Programmes of the Fifth Framework Programme – Confirming the International Role of Community Research*, EUR 20020, Brussels.
- European Commission (2001): *Gender in Research: Gender Impact Assessment of the Specific Programmes of the Fifth Framework Programme – Improving Human Research Potential and the Socio-economic Knowledge Base*, EUR 20021, Brussels.
- European Commission (2001): *Gender in Research: Gender Impact Assessment of the Specific Programmes of the Fifth Framework Programme – An Overview, Synthesis Report*, EUR 20022, Brussels.

- European Commission (2004): *Gender and Excellence in the Making: Directorate-General for Research*, EUR 21222, Brussels.
- Ganetz, Hillevi (2005): *Uppföljning av Vetenskapsrådets beredning och utfall av genusvetenskapliga projektansökningar inom humaniora–samhällsvetenskap år 2004*, Vetenskapsrådets kommitté för genusforskning, Stockholm: Vetenskapsrådet.
- Klinge, Ineke & Mineke Bosch (2005): "Transformating Research Methodologies in EI Life Sciences and Biomedicine: Gender-Sensitive Ways of Doing Research" in Nina Lykke (ed.): *European Journal of Women's Studies, Special Issue on Transformative Methodologies in Feminist Studies*, London: Sage.
- Lykke, Nina (2004): "Women's/Gender/Feminist Studies: A Post-disciplinary Discipline?" in Rosi Braidotti et al. (eds.) (2004): *The Making of European Women's Studies*, V, 90–108, Utrecht: Athena.

# SUMMARY OF THE DISCUSSIONS

During the conference several issues were discussed in work groups and in relation to the different lectures. The contributions to the discussions are found below, gathered under the headings *Current systems of evaluating science*, *Defining gender research* and *Defining excellence in gender research*. These headings cover the most important topics of the discussions: the question whether gender researchers all work in a common field and share the same interests; the frustration among gender researchers about the workings of the current systems for evaluating science; but also the great will to be proactive and contribute to the creation of new criteria of excellence and new ways of measuring science, as well as being a part of the current development in the scientific community.

## Current systems of evaluating science

### Can quality be quantified?

The current ways of measuring quality in science were put on the agenda by Carl Jacobsson and Daniel Wadskog. They gave a presentation of indicators of scientific quality derived from counting publications and citations in the publication database Web of Science.

Many gender researchers from the humanities and the social sciences felt that they were at a disadvantage since the norm of evaluating science derives from the natural and engineering sciences. Or as Sven-Eric Liedman put it: "There are not enough quantities to quantify in the humanities. We have quality but not so much quantity." The work group lead by Anna Jonasdotir came to a similar conclusion:

– Most gender studies are done in the humanities and the social sciences where we write monographs rather than articles. Therefore purely quantitative criteria for measuring excellence will be less relevant in these fields. One large book should count for more than one article written by seventeen people.

Carl Jacobsson and Daniel Wadskog remarked that books are not included in the Web of Science database and are thus not counted at all. Also, the indicators compare the number of papers and citations within the scientific subfields, e.g., the number of citings of a paper in psychology is compared

to the average number of citations of a paper in the field. By comparing with the field citation score, an author is compared to the peers in her/his field. In this way the problems of comparing fields with different publication patterns are taken care of.

In his presentation Carl Jacobsson showed that the papers from the Nordic countries represent only 1.5 percent of the world's production in the Web of Science field called women's studies. This is only half of the Nordic share in other fields. The Nordic countries do not contribute more than 20 papers a year in the field women's studies. This result was challenged by many people in the audience, who saw several problems with this way of measuring the scientific output of gender research.

– I don't think that you gave a complete picture of the number of publications in gender studies per year. If you really want to know how many publications there are in gender studies, it is also relevant to use a list of keywords for "gender" and to search relevant journals in a scientific area, said Joke Haafkens. Many gender studies are published in other journals than the ones you mention (gender studies journals). Authors are aware that some gender journals still have a rather low impact, and they prefer to publish in journals which have a higher impact in their subspecialty.

Carl Jacobsson explained that Thompson's (Scientific/ISI) field women's studies cannot be regarded as covering the whole field of gender studies.

– If you want to have a fuller picture of a certain subject you can use keywords, but it's a very time consuming way of searching the database. Gender research shares this problem with almost all other fields. Just to give one example, papers on cancer are not only published in journals of cancer studies.

Anne Hammarström remarked that a paper with a high number of citations does not always indicate high quality:

I know many much cited papers that are criticized for various reasons. They are not always examples of good science.

What somebody has written can of course sometimes be criticized, but statistically it is not important, answered Carl Jacobsson. He also remarked that if somebody is criticized it can be an indication of something interesting and that it is better to be criticized than not to be cited at all.

Ulf Mellström asked if there was any kind of self reflexive discussion about the concept of quality in bibliometrics. He thought that Carl Jacobsson's presentation showed what is considered science in today's society, namely medicine, technology and the engineering sciences, while "soft sciences" such as gender studies have a low impact.

– There is of course an ongoing discussion of what we are measuring, said Carl Jacobsson and Daniel Wadskog. For example, bibliometric methods are

less useful in the humanities and in law than in medicine. In this presentation we have only briefly discussed the different publication patterns in different areas. For instance, an excellent group in law may not have published anything that appears in the Web of Science. Such a state of affairs is inconceivable for a group in medicine or the natural sciences, because in these areas articles in journals are the preferred way to publish scientific results.

### Alternative ways of measuring?

Some participants asked for alternative strategies to identify excellence in research. They saw Carl Jacobsson's presentation as giving advice about how to *appear* excellent. One person said that this was depressing from a scientific perspective and expressed her view:

– There are so many articles dealing with more or less the same subjects, so much feeling about what's in the air, scientific agendas... Aren't there alternative strategies to find excellence? To look at the bibliographies in recent dissertations may provide good indicators of who is quoted and regarded as excellent in a certain field. The influence of gender studies is quite large if you consider the numerous dissertations where a gender researcher has given advice "behind the scene" and is quoted in the bibliographies. But where we really get acknowledgement is in the foreword, where we are thanked.

– This is only one way of measuring science; there are many other ways, responded Daniel Wadskog and Carl Jacobsson. We have given examples of ways to take a more active part in the international discussion. But you must be the experts of your own strategies. We have not shown absolute criteria of scientific excellence, but we have shown indicators based on visibility and response in the international scientific journals. If you are cited in a Ph.D. dissertation written in Swedish it's part of the national debate, but if you want to participate in the international scientific discussion, you can't write in Swedish.

### Lack of awareness

In their lectures, both Margo Brouns and Liv Langfeldt referred to research that indicates that the evaluation process is biased and influenced by a number of different factors. The so called Matthew effect – that to those who already have more will be given – leads to a risky future for gender research, or as Anna Jonasdottir expressed it: "Not only because the means go to those who are already successful, but also because it's part of the design of peer reviewing what good science and excellence is." Like Anna Jonasdottir, the participants of the conference asked for more awareness of what influences the peer review process and suggested new forms.

– There must be more awareness of the processes going on in the various kinds of reviewing articles, book manuscripts, job applications etc., said Anna Jonasdottir in summarizing the discussion in her work group.

Apart from this unawareness, the lack of double qualifications among peer reviewers is a serious problem, which creates obstacles for research projects that try to cross the line of the first and second culture and require experts that have double qualifications to be properly evaluated.

## An open process takes courage

Several people pleaded for open peer reviews instead of anonymous ones. An open process could be much more constructive than a hidden one. Furthermore, a reviewer, who is aware that the person who gets the assessment knows who he or she is, will feel a pressure to present good arguments.

– I was on the Danish Social Science Research Board for three years and we had constant fights about peer reviews, commented Hanne Petersen, who saw severe problems with anonymous peer reviews. And yes, it takes courage to write critically about other people. But I think that we need to go out and fight for open peer reviews, where people have to stand for what they say and who they are and what they write. Otherwise we will never be able to introduce plural standards supporting different ways of evaluating different kinds of research.

Margo Brouns agreed on the advantages of an open process:

– It takes some courage and you have to be disciplined – maybe more so than if you hide behind closed doors – but in the end it's wonderful because it also creates a discussion and open debate about what is important and what is not.

It is now time to go further, Margo Brouns underlined. She was frustrated by the lack of progress regarding the transparency issue. Since Christine Wennerås and Agnes Wold published their paper about peer reviewing in 1997 very little has happened, she said, and added: What kind of resistance is this? People must really think that it takes a lot of courage to proceed with an open process.

## Is gender research always at a disadvantage?

Nina Lykke thought that Margo Brouns idea of how gender research is treated by the scientific community was articulated in a too general way. She pointed to the need to be nuanced.

– I know many different nationalities were represented in the seminar that you refer to and of course there are a lot of important differences between nationalities and languages that could be examined to a much larger extent.



Joke Haafkens thought that Margo Broun's description of the current situation was very general. One has to look at each scientific field separately and add a historical dimension to understand why the situation is so gloomy in some fields and not in others, she said.

– Today, many women work in medicine as compared to twenty years ago and there are many more women scientists. I think that medicine is one of the few fields today where gender issues are taken seriously in both the question of staffing and in research.

– Of course, when analysing the situation for gender research, you have to examine the different disciplines as well as the unique context, answered Margo Brouns. Right now, I don't think that major progress in gender studies made in the social sciences, especially not in my country. A study carried out in Germany clearly indicated that research proposals on gender issues were more frequently rejected for funding than other proposals. From this point of view we can say that an engagement in gender issues creates certain risks. Currently, the importance of gender receives much more acknowledgement in medicine, so maybe at this moment in time, a researcher in medicine has a better position to contribute to progress in gender research than a researcher in the social sciences.

### Importance of gender competence in evaluation

It is crucial that the scientific community and especially those who are assessing applications have a special gender competence. We must also educate the whole scientific community about what gender aspects mean, stated Anne Marie Berggren's work group. Inspired by Liv Langfeldt's lecture, they also suggested that different ways of counting and assessing different purposes should be used in the reviewing process. Hanne Petersen had similar ideas and underlined the need to introduce plural standards. She hoped that everyone in the audience involved in the evaluation of research should engage in this area practically.

Finally, some researchers pointed out that the reviewing process is not only a question about what peers do and do not do. Application forms must be adapted for gender research, which is not always the case today. Furthermore, before sending in the applications, many gender researchers lack access to colleagues that can give qualified feedback at the department level.

### General problems

There was also a minor discussion about general problems and challenges in science today. Even if the evaluative criteria are crystal clear, the fact remains that competition is very hard and only those who get very high

grades and very good reviews can hope for funding. Hanne Petersen mentioned that the orientation towards individual presentations put a heavy burden on the individual researcher. Anne Marie Berggren, on the other hand, focused on the difficulties with the large research groups that are now also required in the humanities and the social sciences.

## Defining gender research

### A heterogeneous field

One matter in the discussion focused on the definition of gender research, something that obviously also influences the evaluation of gender research. Some people even questioned if gender research is a scientific field on its own, though the majority present at the conference were convinced that it is.

– I've worked with gender research for more than ten years at the Swedish Research Council, said Anne Marie Berggren. Having read thousands of applications I've finally learned that it is a research area on its own and should be recognized as such. After a while you can see if an application in gender studies is good or not.

Another way of defining gender research is by pointing to the increasing numbers of publications in the field, which Hanne Petersen did:

– I think we're dealing with a field that has emerged and expanded explosively during a generation. I was at my first Nordic conference on woman's law in 1975, and at that time not much was written in gender research in general, and it was possible to follow what was happening in the field. Today, I can hardly manage to read all the contents of the journals. So no doubt we can speak about gender research, but of course it's a complex area, and it has become very diverse.

Several people drew attention to the diversity of gender research. Even though one can talk of gender research in general, one has to deal with the fact that there are many "sub subjects" in gender research. This is something that must be respected, emphasized Anna Jonasdottir:

– We can define gender research as one scientific field, if we respect the fact that it is very heterogeneous because of the different methods and theories employed. And when we evaluate gender research we need to take into account that there are different levels of gender research. Some projects only partially involve gender aspects, while some are pure gender studies.

Anne Marie Berggren had difficulties in defining methods in gender research, but found part of the answer in its interdisciplinarity:

– I think that the answer is imbedded in what happens when you bring fields together. For example, the fact that a professor in tax law, Åsa

Gunnarsson, can get input from gender research in medicine certainly shows that we should regard it as a new field with new methods.

## Two cultures

Agnes Wold saw problems with what she interpreted as a politically correct definition of gender research. In her lecture she spoke about two cultures, where the natural sciences and medicine belong to one culture, and the humanities and the social sciences belong to another. One of her statements was that there is still a big gap and misunderstanding between the two cultures. Most gender researchers are found in the second culture. As a consequence, important medical research, for example about women's heart diseases, is not accepted and included in the politically correct definition of gender research and in the gender research field.

Many people at the conference questioned her conclusions. Katarina Hamberg has worked on the gender committee at the medical faculty at Umeå University in the last four years, trying to introduce a gender perspective in education and research. She claimed that Agnes Wold's starting point, with the two cultures, made her fall into a trap:

– Instead of creating a dichotomy, I think it's necessary that we try to find a common ground. Being a gender researcher in medicine I look for collaboration and sometimes a fusion between the natural sciences, humanities and social sciences.

Katarina Hamberg also emphasized that there must be an understanding in both directions:

– I don't want to say that positivism is ridiculous or that positivism is the only way. I think there are different methods and that this is something you have to accept. We in the natural sciences also have to be willing to understand our colleagues who work in the humanities and the social sciences.

Agnes Wold responded that even though she's not doing traditional gender research, her engagement in gender politics in medicine, for example fighting misinterpretations about breastfeeding, is an important task that is not included in traditional definitions of gender research. Another example that was brought up was Karin Schenk-Gustafsson's studies about women's heart diseases, studies in which her way of using the word "gender" provoked several gender researchers. Ulf Mellström summarized the criticism:

– Karin Schenk-Gustafsson and her group have taken the concept of gender and used it in a way that doesn't respect a long theoretical tradition. They have turned gender into something about the biology of women and men.

Agnes Wold answered that this reaction itself shows that there are indeed two cultures and that there is a misunderstanding because of the different research traditions:

– In our culture (the natural science one) it is not a big thing to misuse a word, because a word or a theory means very little in our world. What is important to us are the data and the impact of the data. That is why we have this collision. And I'm just saying that Karin Schenk-Gustafsson's research is extremely important and in my view this is something much more important than whether you use a word in a certain way.

Katarina Hemberg didn't agree. She thought that the discussion of the concept is crucial, not least in the evaluation process:

– It is a problem that many peers in medicine don't have a common definition of what they mean by gender. Medical research that is closer to the social sciences is sometimes not seen as sufficiently scientific, because it's not positivist enough.

### The lack of gender research in certain research areas

Anne Hammarström drew attention to the fact that gender research is a growing field in the natural sciences and wondered how the Swedish Research Council deals with this fact. Are there "gender-crossed" applications in the natural and engineering sciences? Are there experts with gender competence in the review group? Arne Johansson explained that even though there is a good possibility for funding, there was only one single application in 2005 that could be classified as gender research.

– I don't even claim that there is gender research in the natural and engineering sciences, he concluded. But we welcome this kind of research, and I think that it's definitely possible that we will see it in the future.

## Defining excellence in gender research

A main goal of the conference was to discuss how gender research should relate to and deal with the concept of excellence and how one should define excellence in gender research. A lot of ideas and suggestions were presented.

Many of the participants hesitated to talk about excellence in general. Joke Haafkens pointed to the problem in Nina Lykke's claim that on one hand gender researchers are excellent and this needs to be recognized, and on the other hand that the field is so diverse. So how are we to recognize excellence? We have to be specific, she emphasized.

Kamma Langberg's work group stated that there are different kinds of excellence. Someone can be excellent in doing research, in teaching or in communicating with society, or possess all these skills. It's necessary to discuss what excellence means in different research areas and develop a concept from such a discussion:

– We must work on this task in a concrete way at the universities and identify what we think is important when we talk of excellence, whether we mean the number of published articles, number of network or something else. We have to be specific and allow for variation at the same time.

Hanne Petersen was on the same line. She said that we are in the beginning of a process of filling out the concept of excellence. We have to take advantage of this and contribute to establish such a concept. In due time it will become an established concept, she said, and put the creation of the concept of excellence in a broader context, where we are now “moving out” from national knowledge production into a global market-oriented knowledge producing society.

She claimed that this frame in knowledge production must influence the ways we deal with the concept of excellence. Therefore we need to think of ways of defining excellence that are more flexible, broader, allowing for short-term strategies and more purpose-oriented approaches. She gave an example:

– Once I heard an Iranian woman who said that in Muslim societies marriages are contracts, and you can marry for two hours, that is have short-term contracts. In a time of temporary relations and when technology gives us ways of communicating that we didn't have before, we shouldn't think in terms of a “Saltsjöbaden agreement” that is supposed to last 50, 100 years. Why isn't it possible to come up with temporary cooperative arrangements when presenting criteria of excellence in gender research and set up a webpage?

Hanne Petersen also stated that we have to live with different and simultaneous values. On Gotland there are gravestones that combine old and Christian symbols, that is, combining two different value systems.

– I think we have to do something similar, she said. To combine values from another age with a new emerging frame.

The work group lead by Hanne Petersen tried to identify certain aspects of excellence from the perspective of gender research. Some of the important aspects that they came up with were such things as social relevance, practise, internationalization and making oneself understood – communication.

– We also spoke about the strengths in gender research. Both the tradition of networking and the political orientation are strong. The orientation towards producing relevant knowledge is important and so are the communicative approach and the critical potential. The criticism that is directed at gender research is to some extent also its strength, because it develops a need for self-criticism.

## Lightness versus complexity

Hanne Petersen was influenced by the Italian philosopher Calvino in her lecture where she presented new criteria of excellence in research in general and gender studies in particular. Some of these criteria were “lightness” and “quickness”.

The education researcher Hillevi Lenz Taguchi commented on these suggestions:

– I recognize the need for lightness, quickness, consistency and also the need of new values that are not too complicated. On the other hand, it scares me when you talk so much about visibility and lightness, because we know of the complexity of the world, and we don’t need easy answers. If this is a new enlightenment, this enlightenment also has to include a certain kind of complexity. I’m working with teachers who are trying to transform knowledge from research in their practices and they don’t need easy answers to anything. The need to be recognized as thinking subjects who ask for more knowledge.

Anna Jonasdottir also commented on Hanne Petersen’s lecture:

– I think that we should write less and better, but when I listened more I didn’t really agree. As you’re in law, you think that it is not always so good to produce a 500-page book, but I think that the huge amount of articles that nobody reads is a greater problem.

– It is a question of evaluation, answered Hanne Petersen. If these articles are not rewarded, the development might stop, but now also useless articles count.

## How can gender researchers influence?

Many people talked about the need for gender researchers to create not only new standards, but also new arenas for assessment and recognition, which means introducing new people as reviewers and new forms of recognition.

## A proactive attitude

Ulf Mellström stated that the concept of excellence seems to be part of a kind of irreversible process, including larger research groups and centres of excellence. The most repeated word at the Swedish Research Council is probably excellence, he said and asked: How can gender research cope with this irreversible process? One answer came from Anne Marie Berggren’s work group, which presented two ways of dealing with excellence:

– Either we confront this politically or we just try to adapt to the current situation; try to “get on the boat” and organize ourselves so that we can get involved in the discussions in the scientific community and try to contribute to better evaluations.

Anne Marie Berggren herself thought that the best thing that had ever happened in Sweden in terms of the progress for gender research was the institutionalization of the professors (the so called Tham professors). This has really helped us, she claimed, and suggested that a way to change gender research would be to work for more gender professors.

### The importance of allies

Hanne Petersen's work group was one of many that focused on the need for forming alliances with other groups, especially those that have interdisciplinary approaches.

### Cooperation at different levels

Several participants agreed that cooperation on a national and international level is important and that networks of excellence might be a good idea. In Kamma Langberg's work group the participants accentuated that it is important with national and international cooperation in networks, since gender researchers can't go "one and one" and apply for large resources.

This request got an immediate response. Anna Jonasdottir said that a meeting at Stockholm University was going to be held the very next day with the aim of establishing a national association for gender research. Hopefully, this will become a strong professional association for drawing up strategies and put pressure on politicians as well as on research councils, she explained.

Margo Brouns has written a report for the European Commission based on a two-day workshop about gender biases in the definitions and measurements of scientific excellence (*Gender and Excellence in the Making*, 2004). One of her conclusions is that it would be helpful to organize more events on a European level to tackle the issue of women being discriminated against in the evaluation processes in the sciences.

– When I travel around talking about this I can see that everything is organized as "small events" and not coordinated on a structural level in the European Union. I think it would be wonderful to organize these kinds of debates and not only in gender studies and with gender specialists, but also in connection with other disciplines.

Nina Lykke revealed plans to launch a professional European organization for gender studies that is going to emerge out of the two existing organizations AOIFE (Association of Institutions for Feminist Education and Research in Europe) and the network ATHENA (Advanced Thematic Network in Activities in Women's Studies in Europe) funded by EU's Socrates program.

This will take place during the next European feminist research conference that will be held in Lodz in Poland in August 2006.

– One of the idea is of course to fight for the recognition of our excellence! We have in fact reached and achieved a lot in terms of excellence. And we must receive much more recognition for this kind of excellence. It's important to act on a European level, but I also agree with Hanne Petersen that it is a global exercise as well.

Joke Haafkens informed the participants of the opportunities to give comments to the content of the preliminary version of the seventh framework programme of the European Community for research (FP7) technological development and demonstration activities (2007 to 2013).

– What you can do is to express an interest in a certain theme, she explained. We have a really good opportunity to do collaborative European research, for example about the criteria for excellence in gender research.

## The gender treaty

Inspired by the surroundings of the conference, held in Saltsjöbaden, Hanne Petersen presented a gender treaty, which she had written together with Åsa Gunnarsson.

– We are now close to Vår Gård, a building that is part of the history of Swedish capitalism in the beginning of twentieth century, financed by major industrialists and now owned by Coop. These big construction works that were initially built by industrialists and their families couldn't stay in the hands of individuals. And probably this is what we have to do also – build a new cooperation in research, globally.

### Gender treaty

1. Peace in the research community
2. Procedures for cooperation and communication
3. Secure continuity
4. Parity representation in decision making bodies
5. Local negotiations about quality
6. Parity mediation



# SUMMARY OF THE CONFERENCE

## **Britta Lundgren**

*Professor in ethnology, Head of Umeå Advanced Gender Studies at Umeå University and Chairman of the Committee for Gender Research at the Swedish Research Council.*

The conference has shown that excellence is a very big topic and we should definitely keep in mind the broad scope of issues that this conference has broached.

We discussed the definition of gender research and the unavoidable intertwining of gender research and gender inequality.

We talked about the fact that we probably have to live with the concept of excellence and that it is dangerous to meet this reality with arrogance instead of strategic thinking.

We talked about pluralism in the field and the importance of keeping this pluralism. On the other hand this plurality makes the use of the word “we” problematic as well as making it difficult to talk about anything that has to do with gender studies.

We have spoken about the social relevance and new kind of visibility that is being understood through communication and internationalization.

Where do we go from here then? We need qualitative research of assessment procedures. We need to know more about the changes in academia and how deeply embedded the criteria of excellence are. We can be the actors of changing them and have to be successful in the making of new ones. But the most important thing is to keep doing good research and building strategic alliances while conducting and communicating this research.

I'm grateful for all the inspiring contributions and comments at the conference that will be considered by the Committee for Gender Research. We will continue to follow the integration of gender and science. We will contribute to making the results from the funding of gender research visible, since it is an important way to secure continuity within the research community. And we will continue the work on making Swedish gender research a platform in a broader perspective, both as an interdisciplinary field and within various traditional disciplines.

How are the concepts of quality and excellence in science applied and developed within various fields of research? What are the advantages and problems in the present understanding of excellence with regard to gender research? In October 2005 the Swedish Research Council's Committee for Gender Research and the Nordic Institute for Women's Studies and Gender Research (NICK) organized the conference "Reaching for Scientific Excellence in Gender Research". This publication presents the lectures and discussions from the conference, and aims to provide a picture of the current knowledge and on-going discussion in the scientific community about the challenging concept of excellence.



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