Part 5

CONCLUSION

CONCLUDING REMARKS

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Athens, Greece

I thank you for the invitation to participate in the concluding panel of this workshop, which I found very interesting and very encouraging for future OECD action in this field. Being the only person from academia on this panel, I would like to take the opportunity to highlight for the audience of policy makers (representatives of OECD member states) some aspects of the problem of women's under-representation in research and science. I examine them in the light of findings from women's and gender studies in the scientific and technological fields. I believe that policy making can greatly benefit from knowledge produced in universities that enables it to improve its efficiency.

Most of the speakers in this workshop seem to perceive the problem as one of women facing obstacles, visible or invisible, to progress in their scientific careers. This economic (and human resources) approach to the problem is of considerable significance. Much public policy reflects such an orientation, developing measures that may enjoy great success. In today's environment, where economic priorities tend to predominate in government decision making, arguments drawing on economic considerations seem to have better chances of being taken up and of influencing mainstream state policies. Nevertheless, policy measures may be improved and enabled to become more effective if a broader perspective is taken, so that a given problem may be seen in its true dimensions, embedding analysis in a wider socio-political context. This is in any case what in fact happens with all socially constructed policy problems, since society cannot be analysed purely and simply in economic terms.

I will accordingly summarize the debate in this workshop by drawing attention to two important aspects of the problem of women's participation in scholarly research and in science. My understanding of it derives from a theoretical conception of "gender" more as a social construction and relation than as an attribute of human biology, predicated on whether one is a woman or a man. Scientific and research structures (institutions, processes, policies) are in this sense gendered independently of the sex of scientists and other people involved in them. To highlight this, one need only cite two separate but closely interrelated aspects of the problem: namely, gendered scientists (and researchers) and gendered scientific (and research) systems.

Gendered scientists

Most workshop papers mentioned specific women's roles in the family, women's preferences and working arrangements in some scientific fields (typically those more closely associated with domestic work and caring activity), problems of reconciliation and obstacles caused by motherhood. The target of attracting more women to science could be achieved through removal of some of these 'obstacles' faced by women. But the relevant policies aimed at upgrading their involvement in their careers typically neglect

very important social aspects of women's everyday life and work. The fact that too few women are employed in scientific and technological fields is in no way unrelated to the fact that not enough men are employed in the social sciences, in caring professions, in domestic tasks and in childcare. Men's "preferences" for science, technology and professional life is the other side of the coin of women's "preferences" for everyday life, caring professions and social sciences. Women's position in the labour market is a direct consequence of men's position in the household. The position of "women" in economic and social terms (and even in political terms) cannot change in the absence of a corresponding change in the position of men, given that the social, economic and political position of women is inextricably interlinked with that of men.

Policies targeted at women as individuals encouraging them to upgrade their achievement and aim at equality with men in the research, technological and academic fields should be designed and implemented, as should corresponding programmes to encourage more participation by men in the social sciences and caring professions as well as in domestic tasks. Positive action favouring women can be successful in the long run only if there is parallel positive action favouring men in the sectors and occupations where they are underrepresented.

The introduction of parity (50% women-50% men) in all jobs, positions, posts of responsibility, *etc.* is in my view the only practical and efficient measure with the potential to secure equal sharing of human and economic resources, power and time between women and men. In France, host to this workshop, the Jospin government succeeded in introducing a law on parity in politics. Introduction of the principle of parity, in recognition of the fact that humanity is comprised both of men and of women, represents a consummation of French universalism. The basic principle (and rationale) of this law is, I believe, readily extendable to other fields of economic and social life. Public services, universities, boards of directors, and committees of public and private interest can become more "mixed" and thus more democratic and efficient if and when both sexes take part in equal numbers. Establishment of the goal of equal participation (parity) in all scientific fields and institutions will bring about significant changes of gender distribution in the physical sciences and among social scientists and care givers. Policy measures targeting women can never be sustainable if they are not accompanied by complementary policy measures targeting men.

Gendered scientific structures (institutions, processes and policies)

A number of presentations at the workshop highlighted major problems being caused by gender bias at all phases of the scientific development cycle. This applied for the operation of research institutions, for research management systems and for evaluation processes. The creation of images of "good" scientists, political discourse about science, nominations for prizes, awards, *etc.*: all these are gendered processes and mechanisms for shaping the gender roles of the women and men involved in them. *"Research by women, for women and about women"* was the European Commission's motto when it launched its policy on "women in science". These three dimensions of the interrelation between women and research (and science) are indicative of the extent to which the research process, and indeed science in general, is gendered, highlighting the way that these processes reproduce gender-stereotyped behaviour and shape scientific career paths. The concepts of scientific excellence, objectivity, scientific progress and other 'qualities' associated with science are all evidently highly gendered.

Johannes Klumpers of the European Commission has reminded us of the advantages of inclusiveness, diversity and the interdisciplinary approach in science. Quality in the sciences can be improved if actors (researchers) bring to their research activity a wide range of experience and knowledge as well as a variety of social and political standpoints. For the last 30 years gender studies have contributed to refining theoretical analysis of technological change and scientific development and to improving understanding of its social aspects. It has been widely demonstrated that science and technology are social products, incorporating social and economic priorities into every phase of their life cycle. Gender relations introduce new hierarchies into the social forces, so shaping the social and economic priorities embedded in the scientific process.

More, and better, research on how scientific systems (institutions, processes and policies) operate in promoting or challenging stereotyped attitudes towards women and men may be instructive for the design and implementation of related public policies. Maria Bordons's presentation was most illuminating in this respect. Refinement of the statistical analysis and further qualitative research into critical issues affecting women in science could place arguments of this kind on a solider basis. Hidden discrimination in selection and promotion criteria for men and for women and in decision-making determining the orientations of scientific research and technology may point not only to sex-based injustice in staffing but also to male bias in terms of procedures.

The role of the OECD in promoting women in science

Everyone knows that the OECD is an international economic organisation and not a feminist or socially oriented non-governmental organisation. The OECD enjoys high prestige among its member states. Its economic statistics and analysis and its policy recommendations are highly respected by the international political and scientific community. Such a reputation does not hinder the OECD from arguing in favour of more women in scientific and technological occupations. Quite the opposite: such policy goals are perfectly compatible with OECD's economic orientation when it highlights the waste of human resources and talent entailed in under-representation of women in scientific jobs. Other economic arguments frequently cited include the loss in terms of scientific excellence, competitiveness and productive efficiency.

An array of (traditional) policy instruments can be worked out on the basis of these arguments. They may be similar to those devised for other policy areas, *e.g.* benchmarking, promotion of good practice through exchange schemes, international comparisons (as with PISA for education), performance indicators for individual countries, specialized committees, the drawing up of recommendations for member states. OECD policy reports on women's entrepreneurship could inspire similar reports on women in science, encouraging national policymakers to promote specific policies of positive action favouring the under-represented sex in all sectors of the scientific labour market. In my view, the OECD's mission and mode of operation is absolutely compatible with active policy making in the areas we have examined today. What could conceivably impede further progress in OECD policies is a deficit in terms of genuine and stable political will on the part of national political leaderships. I am, however, optimistic that this workshop has generated substantial movement in the direction we wish to go.

Annex

WOMEN IN SCIENTIFIC CAREERS: UNLEASHING THE POTENTIAL

WORKSHOP PROGRAMME

16-17 November 2005

French Ministry of Higher Education and Research
1, rue Descartes
75005 Paris

Background and objectives

Against a background of growing demand for S&T professionals and despite the increase in the number and share of women among science and engineering graduates in many OECD countries, women remain under-represented in scientific and technical careers. In 2004, Science Ministers from 30 countries, including the United States, EU member states and Japan, asked the OECD to identify the reasons for the gap between growing participation of women in higher education and the low share of women in the research workforce and to identify good policy practices for attracting, recruiting and retaining women in scientific careers.

This workshop, under the auspices of the OECD's Working Group on the Steering and Funding of Research Institutions (SFRI) is part of the OECD's response to this Ministerial request and will bring together representatives from government, academia, public sector research and the business community to share experience and draw lessons and recommendations for all stakeholders.

The initiative for this workshop grew from an idea launched by France's Mission for Gender Equality in Research and Higher Education, following a conference bringing together OECD Ministers of Research in January 2004. The Ministers agreed to invite the OECD to help them not only to gain insight into supply and demand for science and technology graduates, but also to identify successful policy measures for increasing the participation of women in scientific and technological careers. Claudie Haigneré, at that time French Minister for Research, looked forward to France's involvement in this work, in conjunction with the OECD.

I am very pleased to see this workshop taking place here in Paris today, and hope that it will be the first step in some longer-range work that could be run on a shared basis with other countries. We need to find out where these highly skilled women are going, if not into research, and discuss how to go about attracting more female scientists to go into industrial research.

Jacques Serris
Chairman of the OECD Committee for Scienctific and Technological Policy (CSTP)
and Deputy Director, French Ministry of Higher Education and Research

WEDNESDAY, 16 NOVEMBER 2005

WELCOME

Ms. Elisabeth Giacobino
Director for Research, Ministry of Higher Education and Research, France

OPENING REMARKS

Ms. Berglind Ásgeirsdóttir
Deputy Secretary-General, OECD

Ms. Claudie Haigneré
Former Minister for Research (2002-2004), France

Mr. François Goulard
Minister for Higher Education and Research, France

Session 1: Conditions of labour market entry and employment for women in research

Questions:

Statistical state of the art, the need to establish a set of comparable data.

Which are the relevant indicators? Which indicators will help to monitor the situation permanently? What performance measures exist?

Chair: **Mr. Johannes Klumpers**
European Commission, DG Research.

Ms. Camilla Gidlöf
Women in Science Unit, DG Research, European Commission.

Ms. Laudeline Auriol
Economic Analysis and Statistics Division
OECD Directorate for Science, Technology and Industry

Dr. Kamma Langberg
Senior Researcher, Danish Centre for Studies in Research and Research Policy

Dr. Maria Bordons
CSIC-CINDOC, Spain

Discussion

Session 2: Barriers faced by women researchers: horizontal segregation

Questions:

Why do women choose certain fields of research and not others?
How to explain the concentration of female researchers in certain fields?

Chair: **Dr. Claire Deschenes**
Chaire pour les femmes en sciences et génie au Québec
Natural Sciences and Engineering Research Council, Canada

Prof. Mariko Ogawa
MIE National University, Japan

Dr. Christian Suter
University of Neuchâtel Sociology Institute, Switzerland

Prof. Yu Xie
Department of Sociology, University of Michigan, United States

Ms. Ingrid Schacherl
Joanneum Research, Institute for Technology and Regional Policy, Vienna, Austria

Discussion

Session 3: Barriers faced by women researchers: vertical segregation

Questions:

Is the career management adapted to women? Recognition and promotion: mobility; salaries inequity; career path; mentoring; network management.

Chair: **Mr. Mario Cervantes**
Science and Technology Policy Division
OECD Directorate for Science, Technology and Industry

Prof. Iiris Aaltio
Lappeenranta Technological University, Finland

Prof. Eivind Hiis Hauge
Former Rector, Norwegian University of Science and Technology

Dr. Rosella Palomba
Research Director, CNR-IRPPS, Italy

Prof. Frédérique Pigyere
Université de Paris XII Val de Marne**,** France

Discussion

Session 4: Instruments for change: existing policy measures and programmes (1/2)

Questions:

Are the incentive systems and programmes for women to choose and stay in scientific jobs and careers sufficient – efficient, both in public research and business R&D? Does business view this as a key issue, and if so, why?

Chair: **Dr. Michèle Baron**
Ministry of Research, France

Dr. Wanda Ward
United States National Science Foundation

Dr. Andrea Löther
Centre of Excellence Women in Science, Bonn, Germany

Dr. Nicola Millard
British Telecom, United Kingdom

Dr. Wilma Van Donselaar
Senior Policy Officer at The Netherlands Organisation for Scientific Research.

Discussion

THURSDAY, 17 NOVEMBER 2005

Session 5: Instruments for change: existing policy measures and programmes (2/2)

Questions:

How to balance the profession of a researcher with one's "private" life? Do social measures have an influence on this? What lessons from firms in this area? Is gender mainstreaming adapted – and helpful?

Chair: **Ms. Heidi Kuusi**
Ministry of Education, Finland

Dr. Ruth McKernan
Vice President, and Head of Discovery Biology
Pfizer Global Research and Development, United Kingdom

Dr. Christel Baltes-Lohr
University of Luxembourg

Ms. Aliki Mouriki
Senior Fellow, National Centre for Social Research (EKKE), Greece

Dr. Judith Zubieta
Principal Investigator, UNAM, Mexico

Ms. Jane Butcher
Women Returners Manager, UK Resource Centre for Women in Science, Engineering and Technology, United Kingdom

Discussion

Concluding panel

Questions:

Which conclusions to draw? Issues for further research? Issues for further OECD activities?

Chair: **Dr. Sveva Avveduto**
Research Council, Italy, Chair of the SFRI

Panelists from academia, government and industry:

Ms. Renée Clair
L'ORÉAL-UNESCO for Women in Science Partnership, UNESCO

Dr. Helga Ebeling
First Counselor, Science and Technology,
Embassy of the Federal Republic of Germany

Mr. Johannes Klumpers
DG Research, European Commission

Ms. Martine Lapierre
Chief Technical Officer, Alcatel Mobile Communications, France

Dr. Maria Stratigaki
Department of Social Policy, Panteion University, Athens, Greece

Closing comments by the French Ministry of Research and the OECD

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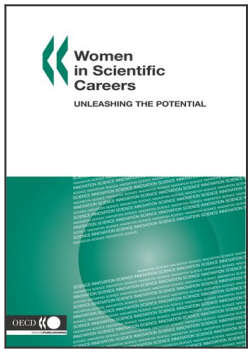

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