META-ANALYSIS OF GENDER AND SCIENCE RESEARCH

Un resum des del "steering committee"

RTD–PP–L4–2007–1

Teresa Torns

What is M-AG&SR?

- A study commissioned by the European Commission
  - A consortium led by Fundació CIREM (Barcelona)
    - INOVA Consultancy Ltd. (UK)
    - Université Libre de Bruxelles (BE)
    - Bergische Universität Wuppertal (DE)
    - Institute of Political History (HU)

Maria CAPRILE from CIREM is the Director of Research

Structure and organisation of M-AG&S

- Coordination Team
  - Consortium led by **CIREM** (Barcelona)
- Social Sciences Correspondents
- Coordinators of Reports
- Bio-technological and natural experts
- Steering scientific committee
  - Irgmard Schultz (Institute Sociological-Ecological Research, Frankfurt)
    - Rapporteur Topic Reports
  - **Teresa Torns**
    - Rapporteur **Country Reports**

Main Purpose of M-AG&SR

- **to collect and analyse gender and science research:**
  - **Horizontal segregation in research careers:**
    - the choice of scientific subjects by girls and occupational choices by women
    - the perception and attractiveness of science, engineering and technology
    - the causes underlying these choices (e.g. stereotypes, influence of family and role models, etc.)
    - the causes of success and failure at university level, etc.
  - **Vertical segregation in research careers:**
    - the barriers for women to reach top scientific positions ("glass ceiling")
    - mentoring/tutoring initiatives, etc.

The general objectives of M-AG&SR:

- Provide an exhaustive overview and analysis of all research carried out
  - on gender and science at European, national and regional levels
- Make the study results accessible
  - to researchers and policy-makers via publishable reports
  - an informed bibliography available
    - database (Gender and Science Database, GSD)
    - website: www.genderandscience.org
- Steer policy-making on gender and science in the years to come
- Define future research priorities within the 7th Framework Programme,
  - in particular through good practice examples and
  - gap analysis in the various research topics

We must remember also...

Science:

- is understood in its broadest meaning,
- including social sciences and humanities

Geographical and time coverage:

- the study covers the 27 EU Member States and Norway, Iceland, Israel, Switzerland, Turkey, and Croatia
- the research produced in all European languages from 1980 to 2007 will be revised

Structure of the country Groups

Country Group	Countries
Anglo-Saxon Countries	IE, UK
Continental Countries	A, B, CH, D, F, L, NL
Eastern Countries	BG, CZ, EE, H, HR, PL, RO, SI, SK
Nordic Countries	DK, FIN, IS, N, S
Southern Countries	CY, E, GR, I, IL,MT, P, TR

The eihgt topics are

1.- Horizontal Segregation

2.- Vertical Segregation

3.- Pay and funding

4.- Stereotypes and Identity

5.- Science as a labour activity

6.- Scientific excellence

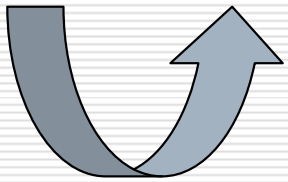
7.- Gender in research contents

8.- Policies towards gender equality in research

General Schema of Country-group report

8 topics

- Findings:
  - Content's résumé
  - Main difficulties
- Gaps:
  - More specific highline required
  - To establish priorities



- Country-groups
  - Country particularities

Horizontal segregation:
Main Findings 1

- General comments:
  - more female students at universities
  - *care work* as:
    - a feminine profession…or
    - a masculine absence
  - engineers and ICT's are:
    - a big hole for women… or
    - the hit parade for men

Horizontal segregation: Main Findings 2

- Country particularities:
  - Eastern countries
    - the number of women entering University education increased in 50's
    - the socialist period: men ≈ women in science/research activities
      - Bulgaria and Romania had more women than men in engineering education in socialist period
  - Southern countries
    - the number of women entering University education increased in 70'-80'
    - Portugal *exception*:
      - percentage of women engineers is almost twice as the one in Italy (13,5%), Turkey (14,7%) and Spain (16%)

Horizontal Segregation: Main Gaps

- General comments:
  - Absence of men studies
  - Lack of comparisons of women's employment in academia versus industry (entry level, experiences, attrition rates…)
- Country particularities:
  - Anglo-Saxon countries:
    - Lack of research on women's non-traditional entry routes:
      - i.e. women starting in manual trades as entry routes into *Engineeing and ICT's*

Vertical Segregation: Main Findings 1

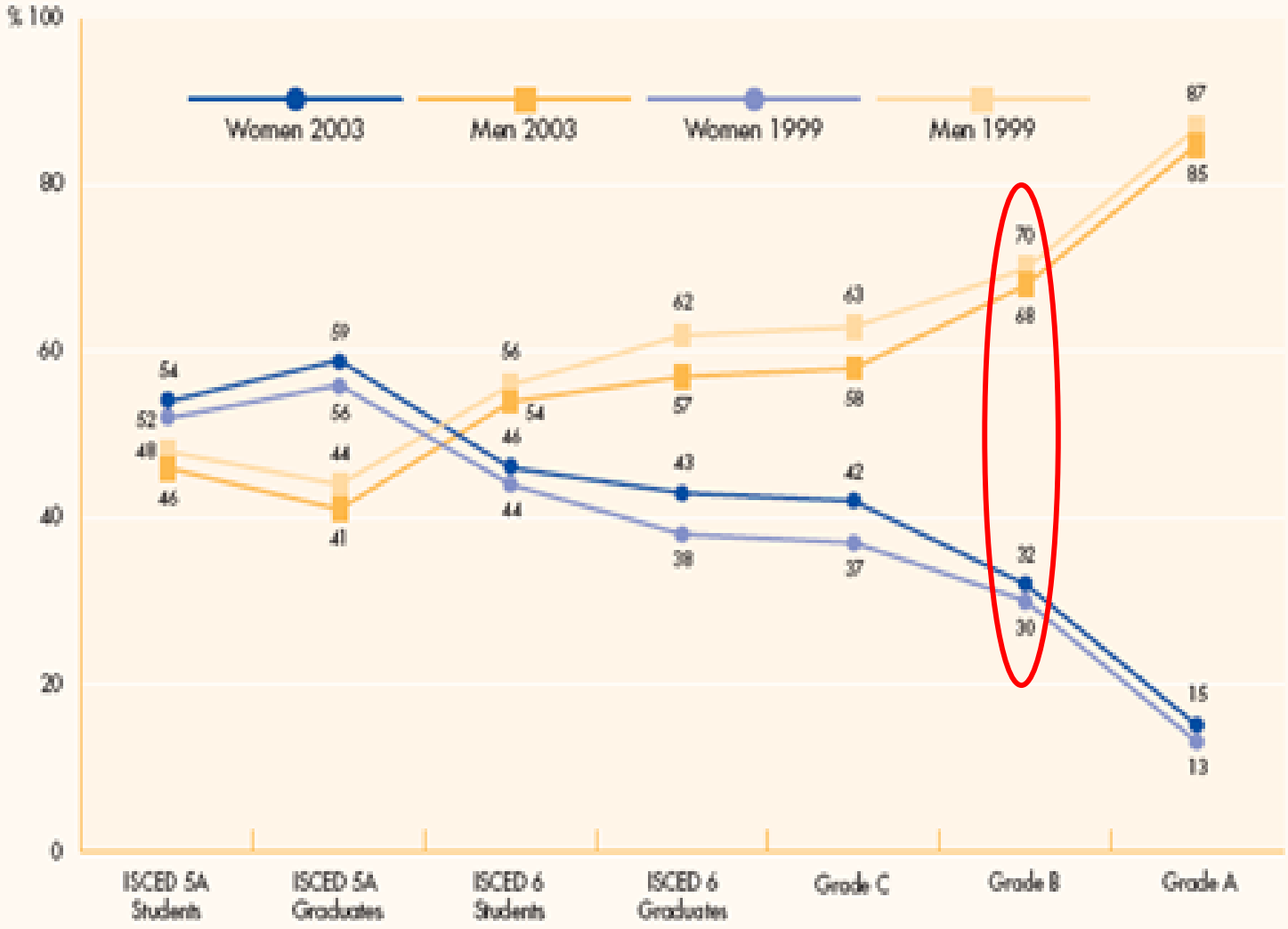
- General comments:
  - Decline of women's advancement is linked to life cycle when:
    - academic careers begin to take off… and
    - qualified women want to have children…
    - glass ceiling and leaky pipeline as indicators of VS…

Vertical Segregation: Main Findings 2

- Country particularities:
  - Anglo-Saxon countries
    - women are more likely to be employed as technicians rather than professors
  - Nordic Countries
    - women's involvement in low-prestige cross-disciplinary studies instead of mono-disciplinary
    - women's predisposition to move to institutional sector
      - from research to school education
  - Southern countries
    - low women's presence in the reins of the research institutions or/and places of taking decisions

Diagram 1. Proportions of men and women in a typical academic career, EU-25, 1999-2003

Figure 3.1: Proportions of men and women in a typical academic career, students and academic staff, EU-25, 1999-2003



Definition of grades:

A: The single highest grade/post at which research is normally conducted

B: Researchers working in positions not as senior as top position (A) but more senior than newly qualified PhD holders

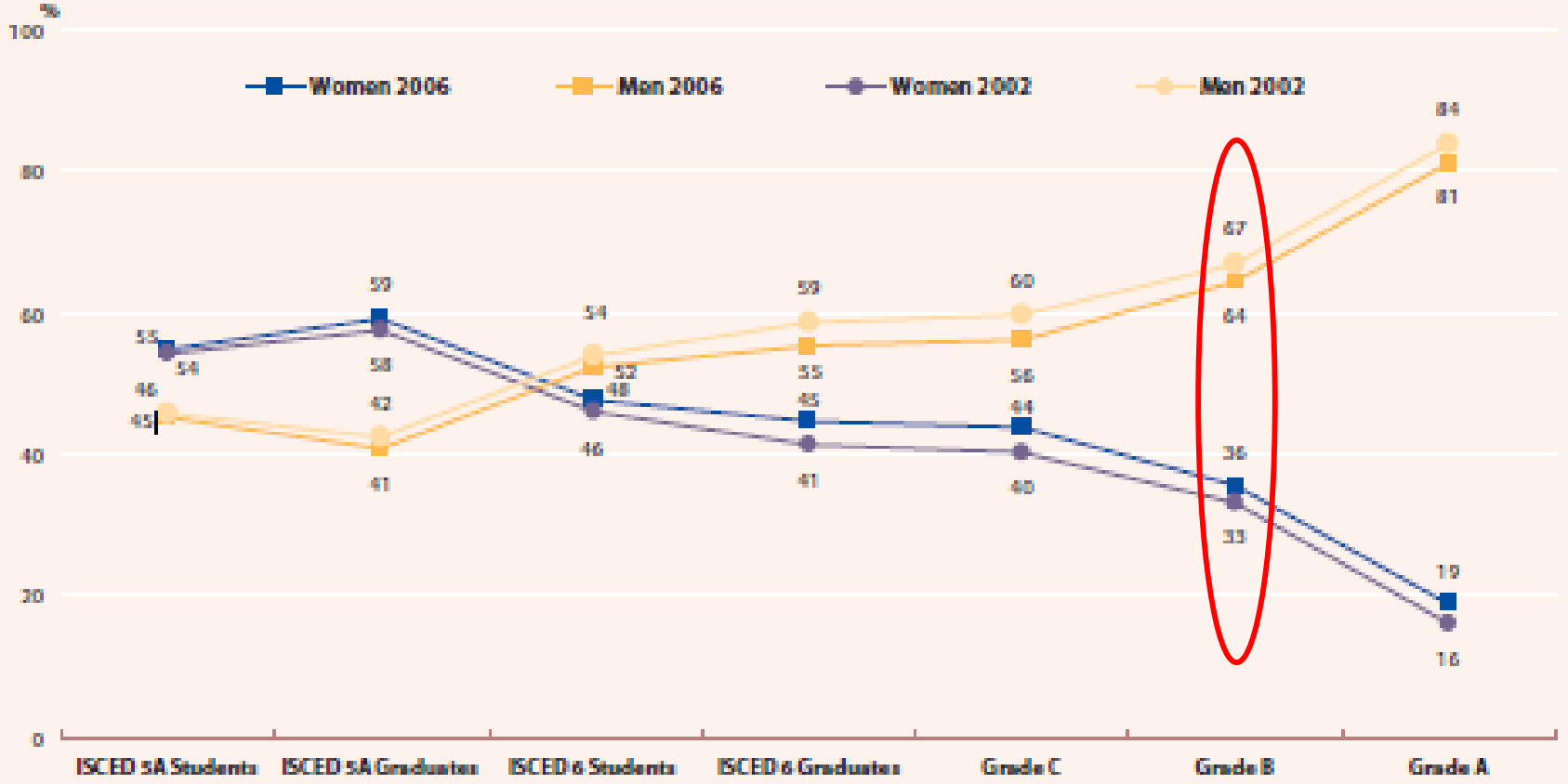
C: The first grade/post into which a newly qualified PhD graduate would normally be recruited

ISCED 5A: Tertiary programmes to provide sufficient qualifications to enter into advanced research programmes & professions with high skills requirements

ISCED 6: Tertiary programmes which lead to an advanced research qualification (PhD)

European Commission (2006). She Figures 2006. 55.

Proportions of men and women in a typical academic career, students and academic staff, EU-27, 2002/2006



Source: Education Statistics (Eurostat); WiS database (DG Research)

Exceptions to the reference year(s): **ISCED 5A Graduates** 2002: DK (2003), FR (2003); **ISCED 6 Graduates** 2006: IT (2004); 2002: DK (2003), FR (2003), RO (2003); **WiS** 2006: EE (2004), EL (2000), MT (2004), PT (2003), SI (2007), SK (2007), FI (2007); 2002: IE (2004), EL (1999), NL (2003), UK (2003).

Data unavailable: **ISCED 6 students** 2006: DE, LU; 2002: DE, LU, RO, SI; **ISCED 5A-6 Graduates** LU; **WiS** 2002: LU; Grade C unavailable: BG, RO. *Estimated data:* EU-27 (by DG Research) for WiS, ISCED 6 students, ISCED 5A-6 graduates.

Head count (Grades A, B, C)

She Figures, 2009. Preliminary Results

Pay And Funding
Main Findings 1

General Comments

- Pay gap can not primarily be derived from direct discriminations in pay policies
  - Differences of income are the resultants of the worse chances of women for career advancement
  - Female Scientific&Research employees tend to be concentrated in lower status positions, receive lower pay and benefit packages
- Men receive most of the grants distributed
- Women are underrepresented among the recipients of scientific grants and funding
  - evidence of an "old boy network" directing the allocation of jobs and positions of influence
- Scientific career not attractive for youngsters
  - low salaries compared to other intellectual professions

Pay And Funding:
Main Findings 2

- Country particularities
  - Nordic countries:
    - a common trend on this topic:
      - male bias in research funding
        - Iceland's exception
      - The reason is:
        - men are to greater extend engaged in more advantaged and typically mono-disciplinary research proposals

Pay And Funding:
Main Gaps

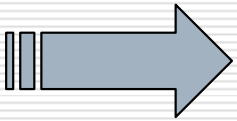
General comments

- What pay penalties do women incur because of career breaks?
  - is this greater than in other sectors?
- Part-time working is related with the gender pay gap in S&R jobs?
- Comparison of the gender pay gap in trade versus professional (academic and industrial) S&R occupations
- Lack of longitudinal approaches
- Gate keeping function and analysis of informal factors for getting access to research funding needs to be explored beside formal factors

Conclusions and Recommendations

- We must remember
  - The results of the meta-analysis should be oriented to help
    - researchers (GSD)
    - policy makers to improve Gender&Science policies
  - Accessibility to database and reports are basic tools

- In order to establish future priorities
-
  - to underline outstanding research
  - to indentify common trends



- to get deeper explanations
  - **we should be able to point out essential questions on Gender and S&T**

Final session

www.genderandscience.org

Beyond the leaky pipeline

Challenges for research on gender and science

Final conference of the study 'Meta-analysis of gender and science research'

19th - 20th October 2010

at the *Institut pour l'Egalité des Femmes et des Hommes*, Brussels, Belgium

Call for papers now open

Call for papers

Abstract submission template

Provisional programme already available

Provisional programme