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# 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?

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- 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

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- **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

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- **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:

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- 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](http://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...

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## □ 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

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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 eight topics are

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- 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

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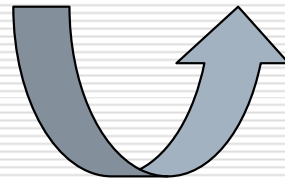
## 8 topics

### ■ Findings:

- Content's résumé
- Main difficulties

### ■ Gaps:

- More specific highline required
- To establish priorities



### □ Country-groups

- Country particularities

# Horizontal segregation:

## Main Findings 1

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- 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

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### □ Country particularities:

#### ■ Eastern countries

- the number of women entering University education increased in 50's
- the socialist period: men  $\approx$  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

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## □ 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 *Engineering and ICT's*

# Vertical Segregation: Main Findings 1

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## □ 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...

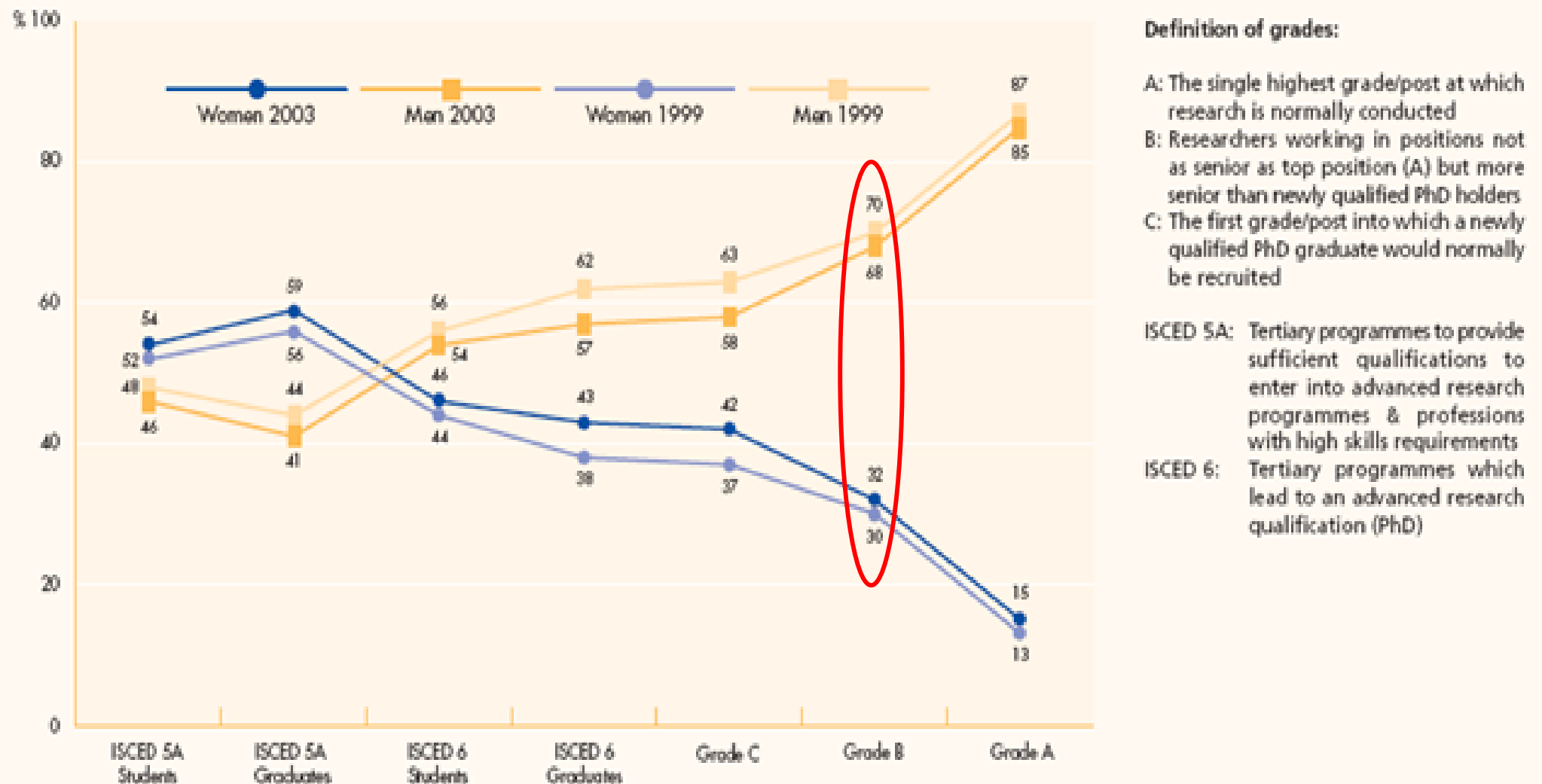
# Vertical Segregation: Main Findings 2

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- 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

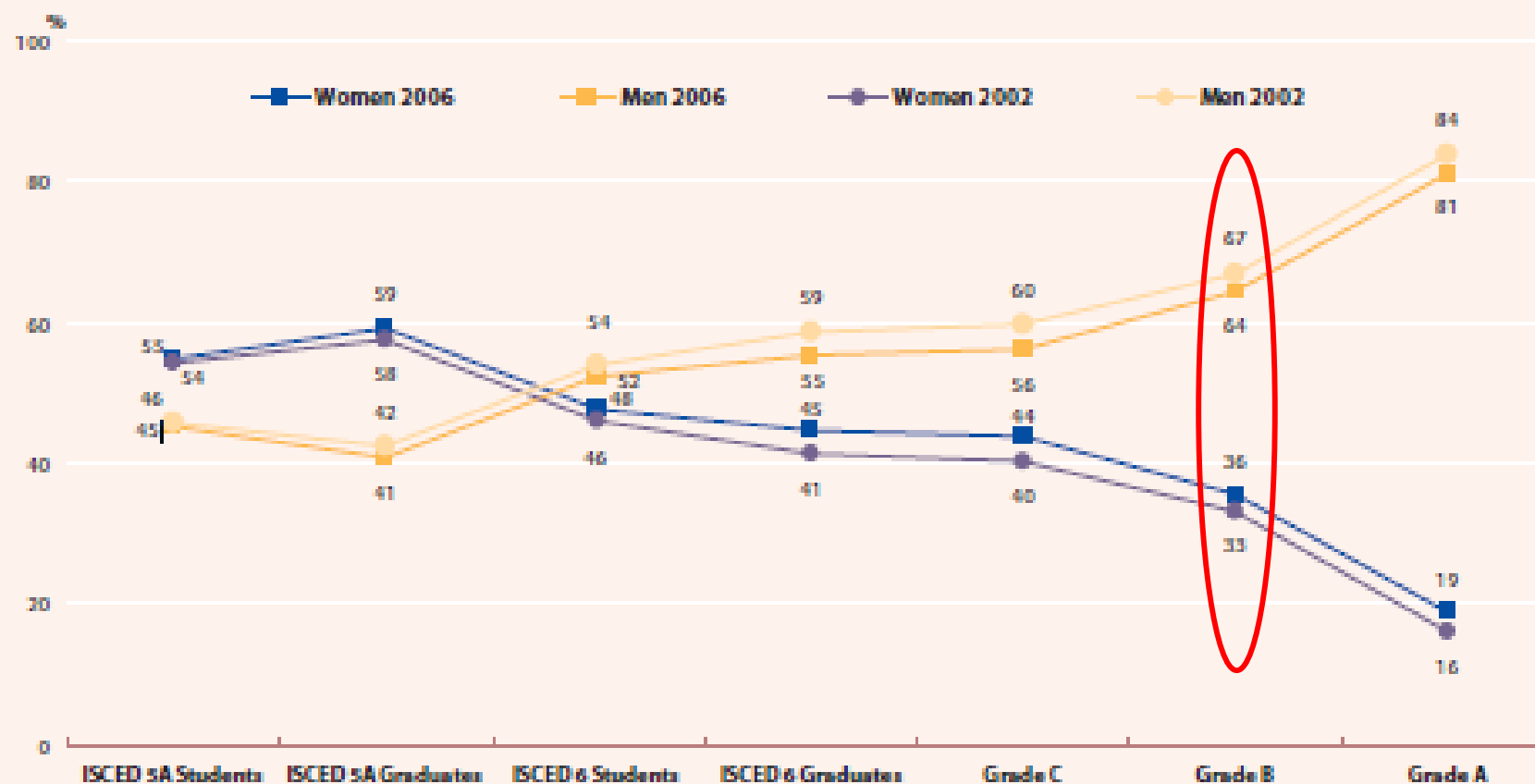
# Diagram 1. Proportions of men and women in a typical academic career, EU-25, 1999-2003

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



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)

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# Pay And Funding

## Main Findings 1

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### □ 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

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### □ 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 extent engaged in more advantaged and typically mono-disciplinary research proposals

# Pay And Funding:

## Main Gaps

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### □ General comments

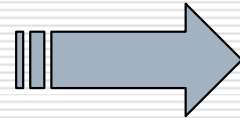
- What pay penalties do women incur because of career breaks?
  - is this greater than in other sectors?
- Part-time working is related with the gender pay gap in S&R jobs?
- Comparison of the gender pay gap in trade versus professional (academic and industrial) S&R occupations
- Lack of longitudinal 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

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## □ 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](http://www.genderandscience.org)

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## Beyond the leaky pipeline

### Challenges for research on gender and science

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

**19th - 20th October 2010**

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

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