

Rise and fall(?) of women stereotypes in science

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Aristotelian Dualism

■ Female	Male
■ Passive	Active
■ Matter	Form
■ Imperfection	Perfection
■ Potential	Actual

The Enlightenment

Voltaire (1764): "All arts have been invented by men, not by women".

Kant (1766): "Woman's beautiful understanding
.....Her philosophy is not to reason,
but to sense....."

Marco Fraccaro

(Nature 346, August 1990)

“...while in the scriptures you find that the first to speak was the women, it seems more rational to think that it was a men, because it is indeed inconsistent to assume that such an important human activity could have possibly derived from a woman”.

(Dante Alighieri: De vulgari eloquentia, 1305)

Nowadays

On Friday, January 14, 2005,
Harvard President Dr. Lawrence Summers
suggested that innate differences between men
and women might be one of the reasons fewer
women succeed in science and math careers.

Stereotypes

- ❑ Science is impersonal, hard, rigorous;
- ❑ Women are personally involved;
- ❑ Male knowledge: rational, analytical, objective;
- ❑ Female knowledge: emotional, based on feelings;
- ❑ Scientific mind is male, nature is female;
- ❑ The aim of science is the control of nature.

Evelyne Fox-Keller: "Machina ex Dea", Joan Rothschild Ed. (1983), Pergamon Press Ltd, Oxford.

The Swedish study

(conclusion)

Women must produce 2,6 times more than men in order to get the same evaluation.

Wenneras C. and Wold A. (1997) Nepotism and sexism in peer review, Nature 347, 341-343.

The MIT Report

(few comments)

- Charles M. Vest, MIT President: “I have always believed that contemporary gender discrimination, within Universities is part a reality and part perception. True, but I now understand that reality is by far the greater part of the balance”.
 - Nancy Hopkins, senior scientists at MIT: to demonstrate the discrimination, she has been off from research for at least two years: this is again a prize to pay for obtaining what is due.
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The violation of the scientific objectivity statute

The outcomes for women have been very serious in terms of exclusion:

- ❑ From the social and public sphere;
- ❑ From education and knowledge;
- ❑ From experiencing individual freedom;
- ❑ From protection of their health;

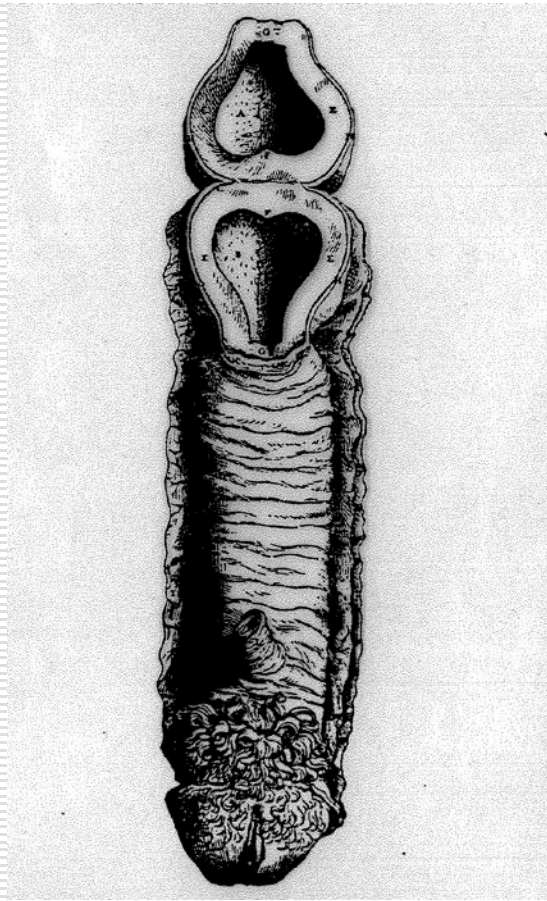
The Human Male has been the universal reference model in all areas of the society even in science

Commission Communication (COM – 1999 - 76 final) Women and Science: Mobilising women to enrich European research

- Reasons:
 - Justice;
 - Waste of resources;
 - Waste of talents;

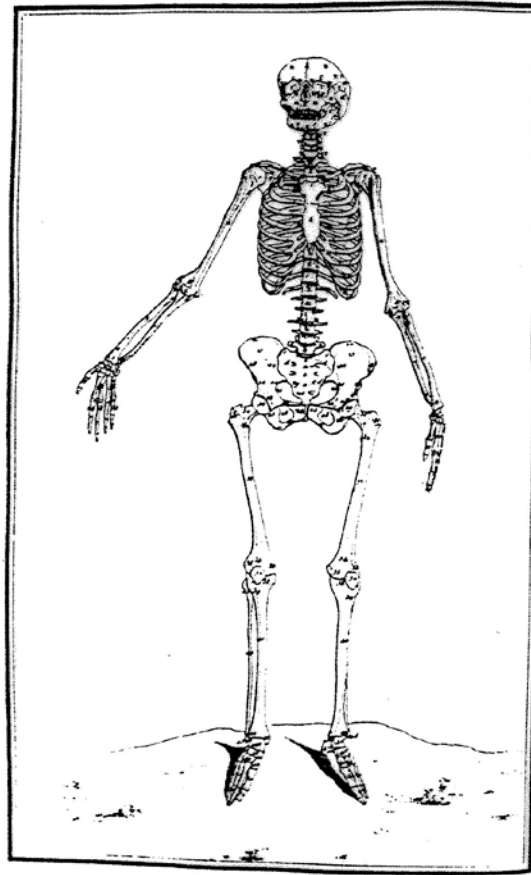
 - Actions:
 - Research for women;
 - Research on women;
 - Research by women;
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The reproductive female apparatus Vesalio, 1543



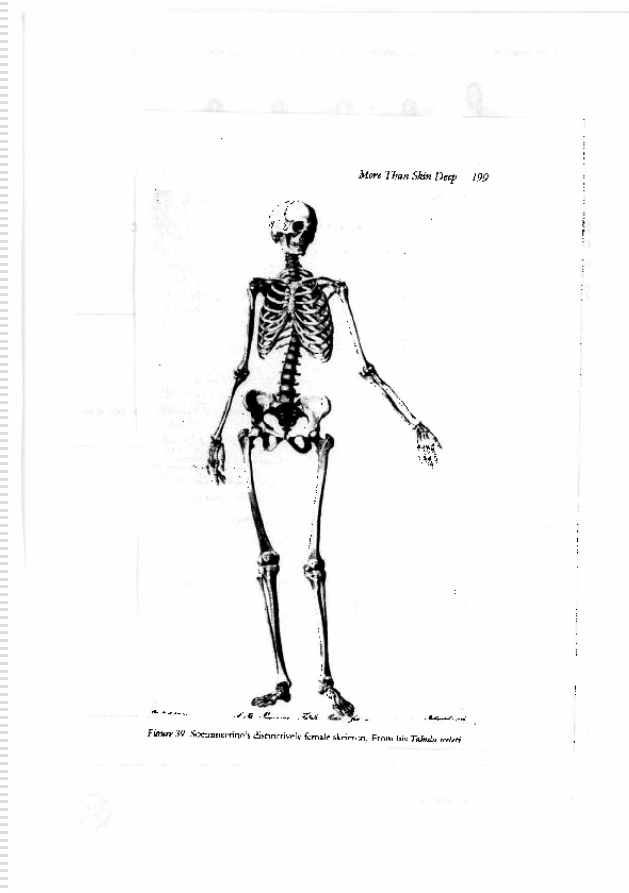
The female skeleton?

Thiroux d'Arconville, 1759



The female skeleton.

Soemmerring (1789)



Gender in medicine

The gender-related health studies are recent:

- NIH, Bernardine Healy, Director 1991-1993
 - Women's health initiative.

 - WHO: G.H. Brundtland, General Director 1983-2003
 - [WHO Gender Policy, 2002](#) Integrating Gender Perspectives in the Work of WHO
 - Strategy for integrating gender analysis and actions into the work of WHO, 2007

 - EU project "GenderBasic" www.genderbasic.nl
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Gender in medicine

- Gender neglected in epidemiological studies:
Most of data are not broken down by sex.

 - Female neglected in experimental pharmacological studies
 - Stereotypes
 - Risk of effects on the reproductive functions
 - Difficulties in homogenising the sample
 - 8 out of 10 drugs removed from the market were responsible for more ADR in F than in M.
-

Pierre-Gilles de Gennes

Nobel prize in Physics 1991

- The qualities Women bring to research:
 - Creating a team
 - Giving student researchers the freedom they need
 - Keeping egos in check
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Stereotypes are changing



The Nobel Prize in Physiology or Medicine 1995

Christiane Nüsslein-Volhard



Value the difference

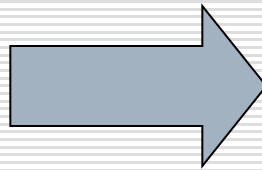
- ❑ Women have their own qualities, their differences...
- ❑ They have to keep their specificity.....
- ❑ They don't have to enter a masculine mould....

from:

Claudie Haignere', Chairperson of the jury of the 2007 Descartes prize for excellence in scientific research.

Premi Nobel per la chimica 2010

Carol Greider & **Elizabeth Blackburn**



Action to be taken

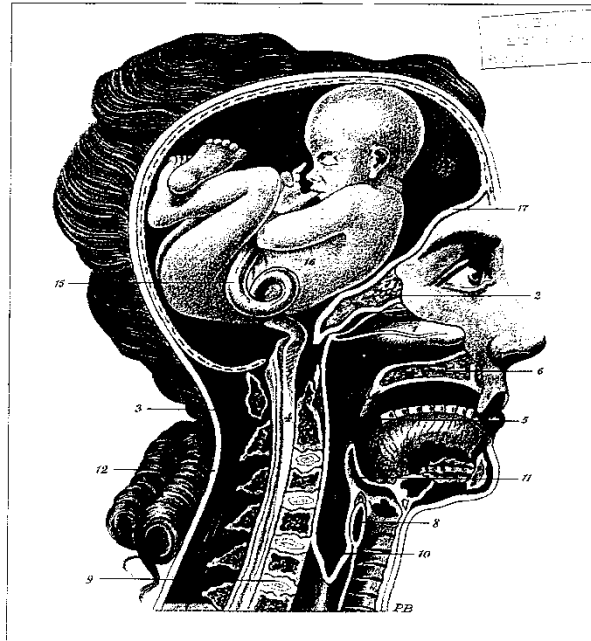
Bice Fubini, Full professor in Chemistry-University of Torino, Associazione Donne & Scienza.

- ❑ Transparency and objectivity in evaluation procedures;
 - ❑ Re-install the decisional powers in the official institutions;
 - ❑ Better exploitation of research in multidisciplinary fields, actually considered "borderline";
 - ❑ Evaluation of the scientific outputs normalized against the funds and personnel inputs;
 - ❑ Abolish gender bias (quotas for men) in favour of meritocracy, evaluated according to new criteria.
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newscientist



Sex and the biased scientist

Many Thanks

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 - Associazione Donne e Scienza
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