

The gender dimension in research - content and context -

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The gender dimension in research

- **Why the gender dimension in research**
- **What is the gender dimension**
- **Gender balance in research teams**
- **Gender balance in decision making**
- **Sex and gender analysis in research and innovation**
- **Of content and context....**

Why does it matter?

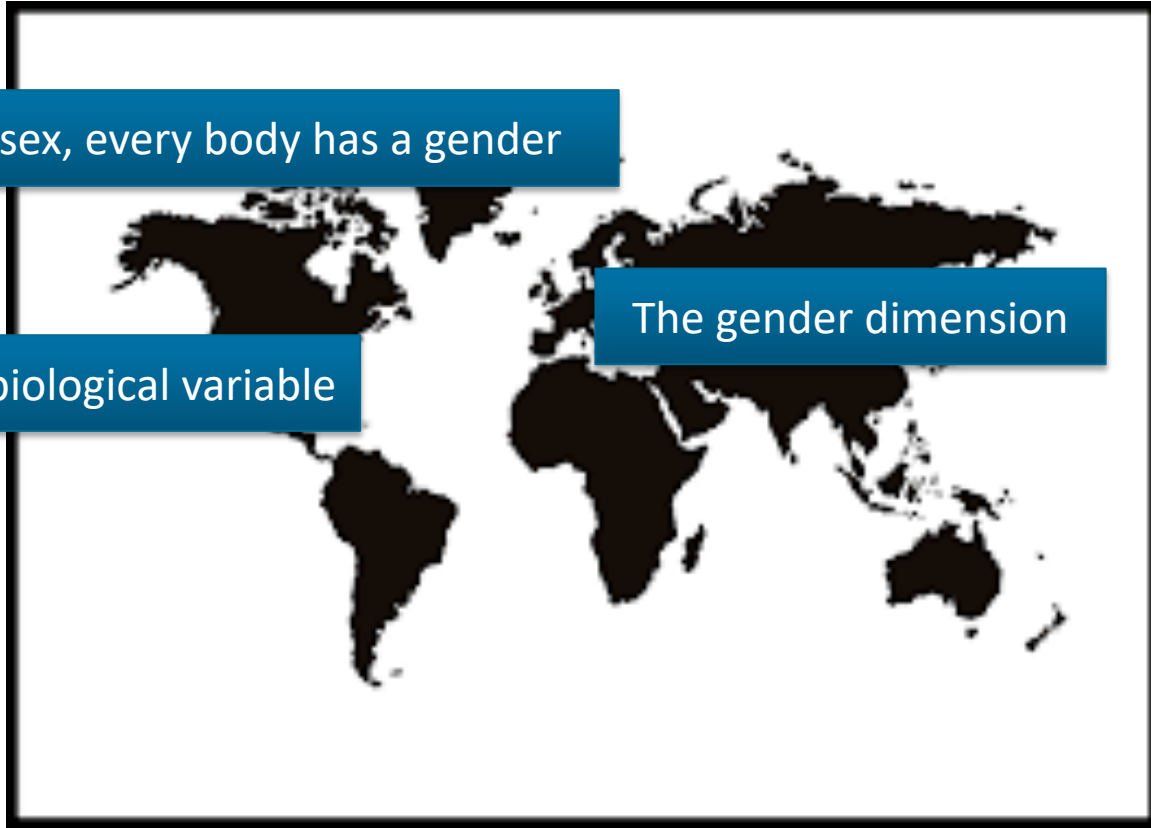
Dimensions	Values/Goals
Ideology	<ul style="list-style-type: none">• (Health) Equity• Remove health inequalities• Social justice• Fight discrimination• Support fundamental rights
Outcomes	<ul style="list-style-type: none">• Health promotion for women and men• Better quality of life
Practice	<ul style="list-style-type: none">• Transdisciplinary teams working on intersectional issues
Empowerment	<ul style="list-style-type: none">• Support informed choice• Offer tools for behavioural change• Acceptance of people's lifestyle choices
Economy	<ul style="list-style-type: none">• Achieve effectiveness• Reduce costs through improvement of measures
Policy	<ul style="list-style-type: none">• Set reasonable goals for health based on differentiated analysis• Maintenance of current state can be a target

Definitions and priorities

Every cell has a sex, every body has a gender

SABV – sex as a biological variable

The gender dimension



Why do we need the gender dimension?

H 2020: “...**improve the scientific quality and societal relevance** of the produced knowledge, technology and/or innovation”

IGH : „...**improving the rigor, reproducibility and generalizability** of science. It’s about excellence...”

NIH : “....**enhance reproducibility through rigor and transparency** and increase the knowledge base....”

- **Reproducibility**
- **Excellence**
- **Societal value**

HORIZON 2020



Genc

II. OBJECTIVES

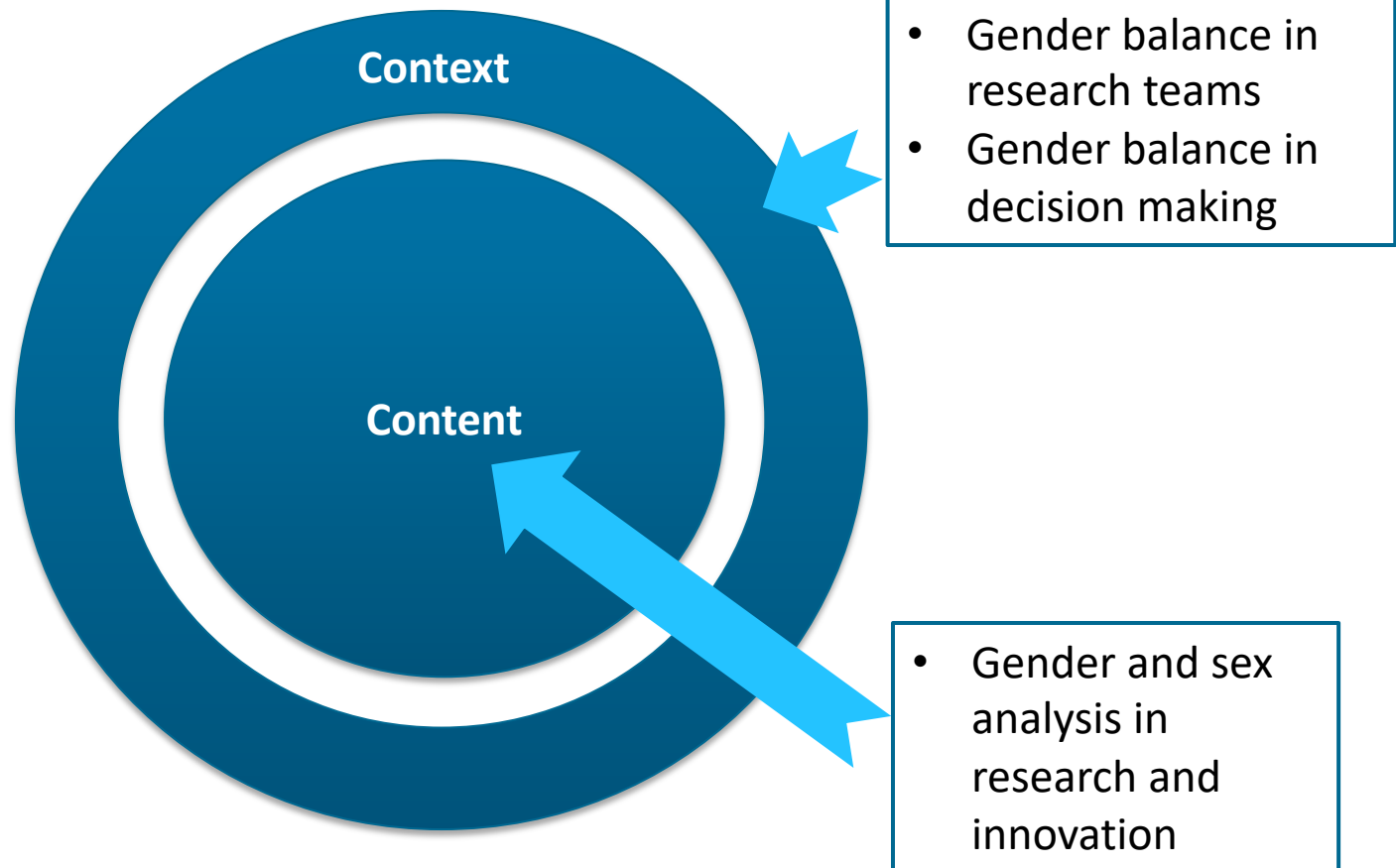
Three objectives underpin the Commission's activities on gender equality in Horizon 2020. They are in line with the RTD strategy on gender as well as with the ones set in the ERA Communication of July 2012:

- *Fostering gender balance in Horizon 2020 research teams,* in order to address the gaps in the participation of women in the Framework Programme's projects
- *Ensuring gender balance in decision-making,* in order to reach the Commission's target of 40% of the under-represented sex in panels and groups (50% for advisory Groups)
- *Integrating gender/sex analysis in research and innovation (R&I) content,* helps improve the scientific quality and societal relevance of the produced knowledge, technology and/or innovation.

These objectives are part of the Commission provisions for the implementation of Horizon 2020 and are integrated at each stage of the Research and Innovation cycle.

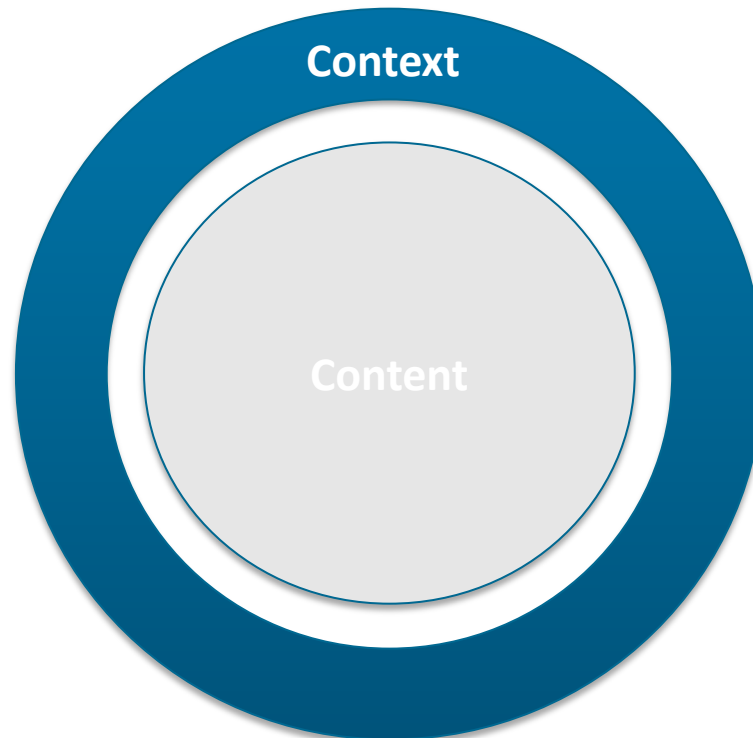
About sex and gender in healthcare

Content and context



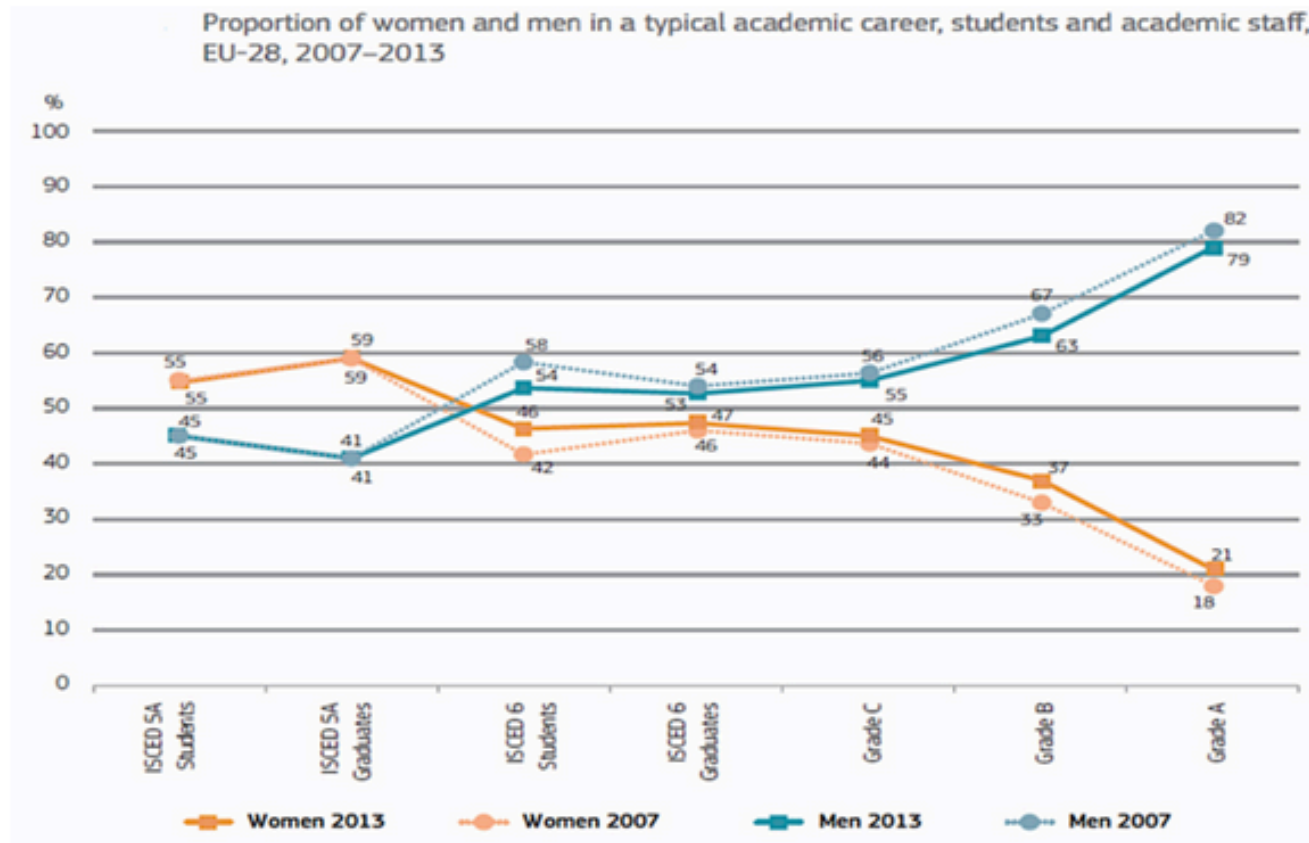
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- The context-



Gender balance in research teams

Gendered discrimination of researchers



She Figures, 2015

Leaky pipeline

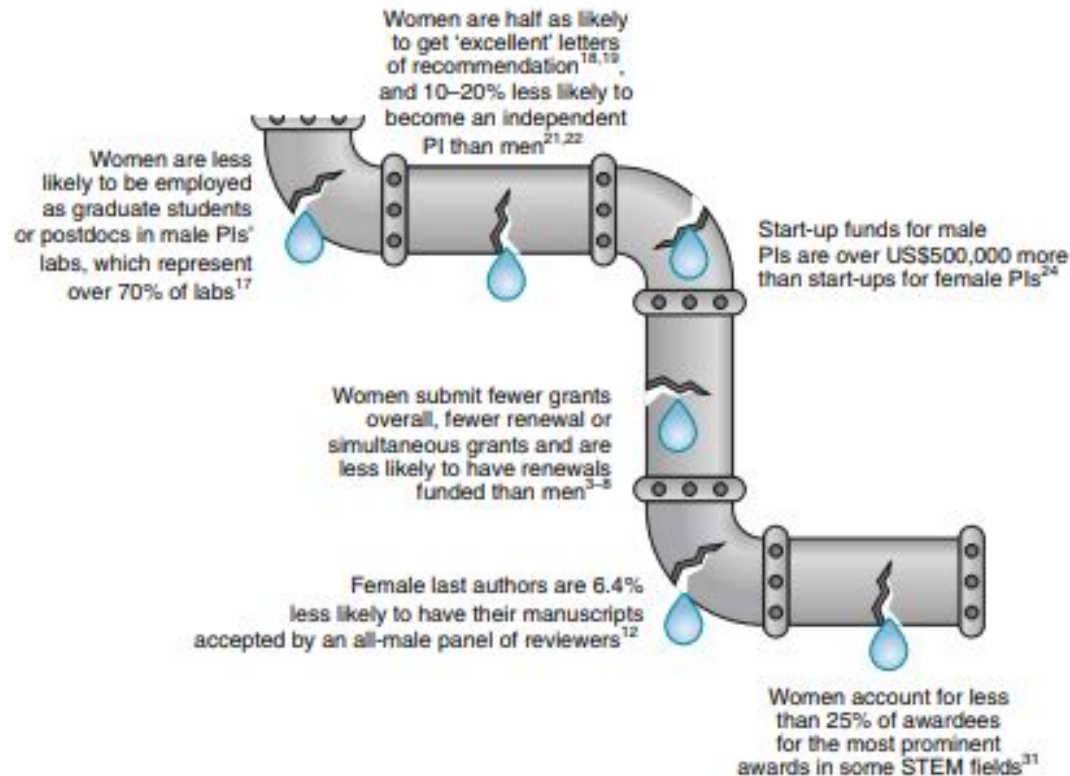


Fig. 1 | The leaky pipeline of women in STEM. The 'leaky pipeline' often depicts women passively leaking out of STEM careers with no discussion of why those leaks occur, but, in fact, the cracks and gaps caused by the biases and barriers are a major cause of the leak of women and minorities out of the STEM pipeline. PI, principal investigator. Credit: Gvais/Shutterstock (pipes and water), 32 pixels/Shutterstock (spanner and wrench).

It's all the incompetent / emotional / lazy women...

„It does appear that on many, many different human attributes -- height, weight, propensity for criminality, overall IQ, mathematical ability, scientific ability -- there is relatively clear evidence that whatever the difference in means -- which can be debated -- there is a difference in the standard deviation, and variability of a male and a female population. ...“ Laurence Summers, 2005, then Dean of Harvard University

“Let me tell you about my trouble with girls ... three things happen when they are in the lab ... You fall in love with them, they fall in love with you and when you criticise them, they cry.” Tim Hunt, 2015, Nobel Prize Winner for Physiology or Medicine 2001

"The gender balance is indeed a problem. But that problem is caused by women. We see many young women with potential, but when push comes to shove they quit. That's not our (the men's) fault. Dutch women just don't want to work hard.“ Hans Clevers, 2018, Professor of Molecular Genetics

Ben Barres

Vol 442 | 13 July 2006

nature

COMMENTARY



Does gender matter?

The suggestion that women are not advancing in science because of innate inability is being taken seriously by some high-profile academics. Ben A. Barres explains what is wrong with the hypothesis.

When I was 14 years old, I had an unusually talented maths teacher. One day after school, I excitedly pointed him out to my mother. To my amazement, she looked at him with shock and said with disgust: "You never told me that he was black." I looked over at my teacher and, for the first time, realized that he was an African-American. I had somehow never noticed his skin colour before, only his spectacular teaching ability. I would like to think that my parents' sincere efforts to teach me prejudice were unsuccessful. I don't know why this lesson takes for some and not for others. But now that I am 51, as a female-to-male transgendered person, I still wonder about it, particularly when I hear male gym teachers telling young boys "not to be like girls" in that same derogatory tone.

Hypothesis testing

Last year, Harvard University president Larry Summers suggested that differences in innate aptitude rather than discrimination were more likely to be to blame for the failure of women to advance in scientific careers¹. Harvard professor Steven Pinker then put forth a similar

argument in an online debate², and an almost identical view was elaborated in a 2006 essay by Peter Lawrence entitled 'Men, Women and Ghosts in Science³'. Whereas Summers prefaced his statements by saying he was trying to be provocative, Lawrence did not. Whereas Summers talked about "different availability of aptitude at the high end," Lawrence talked about average aptitudes differing. Lawrence argued that, even in a utopian world free of

"Few tragedies can be more extensive than the stunting of life, few injustices deeper than the denial of an opportunity to strive or even to hope, by a limit imposed from without, but falsely identified as lying within."

— Stephen Jay Gould

bias, women would still be under-represented in science because they are innately different from men.

Lawrence draws from the work of Simon Baron-Cohen⁴ in arguing that males are 'on average' biologically predisposed to systematize,

to analyse and to be more forgetful of others, whereas females are 'on average' innately designed to empathize, to communicate and to care for others. He further argues that men are innately better equipped to aggressively compete in the 'vicious struggle to survive' in science. Similarly, Harvard professor Harvey Mansfield states in his new book, *Manliness*⁵, that women don't like to compete, are risk adverse, less abstract and too emotional.

I will refer to this view — that women are not advancing because of innate inability rather than because of bias or other factors — as the Larry Summers Hypothesis. It is a view that seems to have resonated widely with male, but not female, scientists. Here, I will argue that available scientific data do not provide credible support for the hypothesis but instead support an alternative one: that women are not advancing because of discrimination. You might call this the 'Stephen Jay Gould Hypothesis' (see left). I have no desire to make men into villains (as Henry Kissinger once said, "Nobody will ever win the battle of the sexes; there's just too much fraternizing with the enemy"). As to who the practitioners of this bias are, I will be pointing my finger at women



"Ben Barres gave a great seminar today, but then his work is much better than his sister's."

Radboudumc

Barres B, Nat, 2006

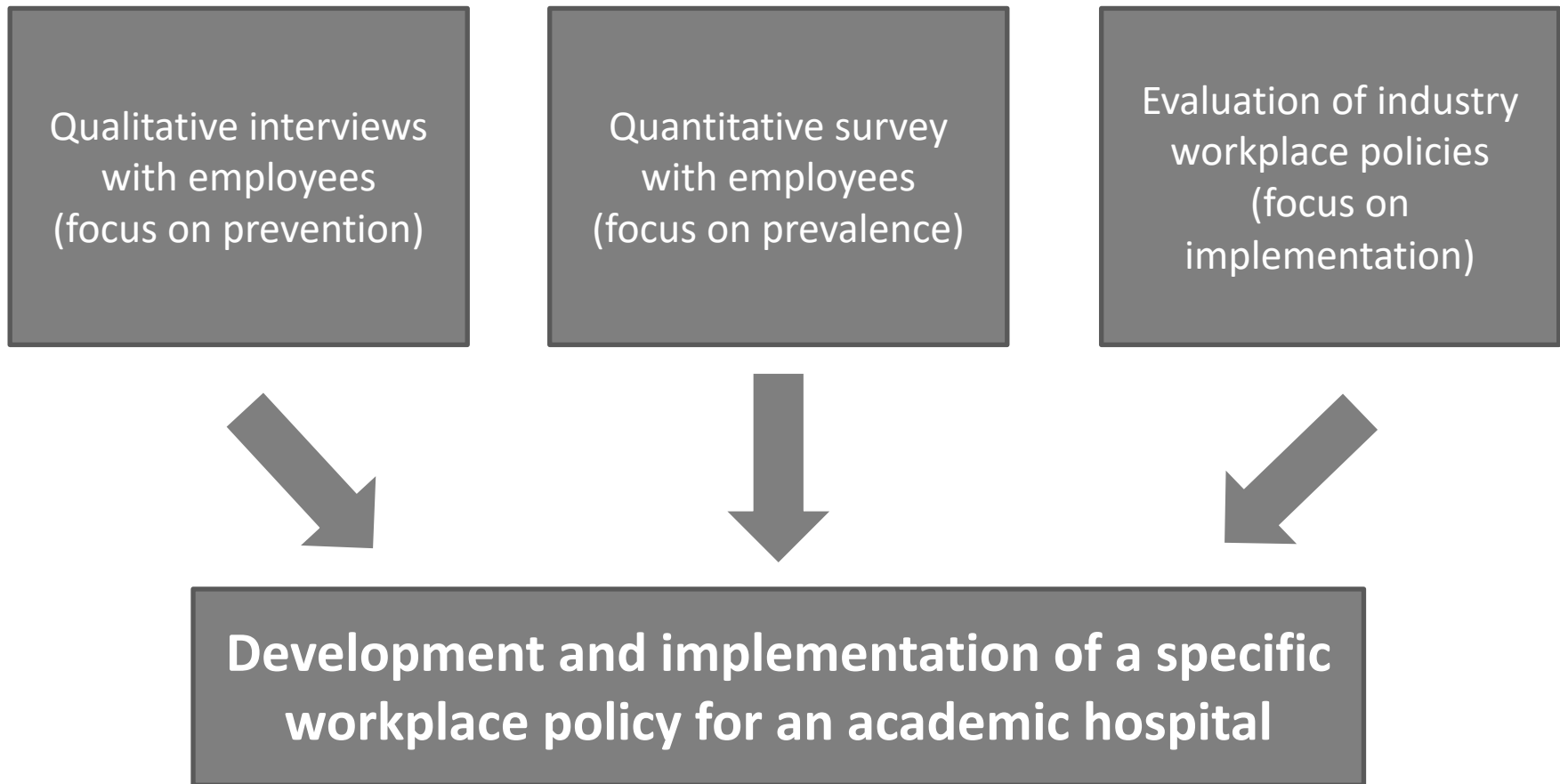
Gender balance in decision making

Gender and power - Sexual harassment

- **Sexual harassment** – "unwelcome sexual advances, requests for sexual favors, and other verbal or physical conduct of a sexual nature . . . when this conduct explicitly or implicitly affects an individual's employment, unreasonably interferes with an individual's work performance, or creates an intimidating, hostile, or offensive work environment" (US Equal Employment Opportunity COmmission)
- **Gender discrimination** - Any distinction, exclusion or restriction made on the basis of sex which has the effect or purpose of impairing or nullifying the recognition, enjoyment or exercise by women, irrespective of their marital status, on the basis of equality of men and women, of human rights and fundamental freedoms in the political, economic, social, cultural, civil or any other field. (UN Women)

The study of sexual harassment in academia -

The „Watch Protect Prevent“ project at Charité



Incidence of different forms of misconduct

Harassment experiences (Entire career)	Total (n=737)	Women (n=448)	Men (n=289)	p
Any form of harassment	519 (70.04 %)	341 (76.12 %)	178 (61.59 %)	< 0.0001
Degrading speech / Obscene language*	456 (61.87 %)	297 (66.29 %)	159 (55.02 %)	0.002
Letter, E-Mail, SMS, jokes, pictures*	44 (5.97 %)	21 (4.69 %)	23 (7.96 %)	0.067
Sexualized speech, sexual innuendo*	185 (25.1 %)	145 (32.37 %)	40 (13.84 %)	< 0.0001
Whisteling, staring*	96 (13.03 %)	89 (19.87 %)	7 (2.42 %)	< 0.0001
Obscene gestures*	39 (5.29 %)	24 (5.36 %)	15 (5.19 %)	0.921
Stories with sexual content*	109 (14.79 %)	79 (17.62 %)	30 (10.38 %)	0.007
Sexual offers, unwanted invitations*	53 (7.19 %)	40 (8.93 %)	13 (4.5 %)	0.023
Unwanted physical contact [#]	127 (17.23 %)	100 (22.32 %)	27 (9.34 %)	< 0.0001
Groping, attempted kissing [#]	16 (2.17 %)	13 (2.9 %)	3 (1.04 %)	0.09
Advantages for sexual favors	11 (1.49 %)	9 (2.01 %)	2 (0.69 %)	0.15
Sexual attack [#]	4 (0.54 %)	2 (0.45 %)	2 (0.69 %)	0.658
Other situations	15 (2.04 %)	11 (2.46 %)	4 (1.38 %)	0.315
None of the above	218 (29.58 %)	107 (23.88 %)	111 (38.41 %)	< 0.0001

Perpetrator profiles and structural factors

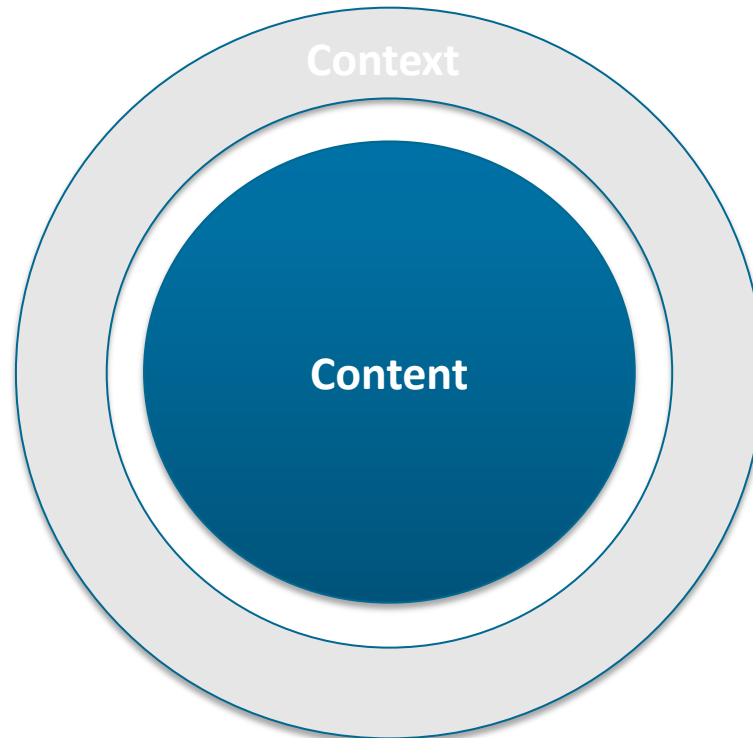
- Colleagues are the most frequently reported perpetrators
- Women are significantly more harassed by superiors
- Of all analyzed structural factors, the only one significantly correlated with harassment in women and men was working in an environment with strong hierarchies

Sexual harassment as the tip of the iceberg

- **Sexual harassment** – "unwelcome sexual advances, requests for sexual favors, and other verbal or physical conduct of a sexual nature . . . when this conduct explicitly or implicitly affects an individual's employment, unreasonably interferes with an individual's work performance, or creates an intimidating, hostile, or offensive work environment" (US Equal Employment Opportunity COmmission)
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- The content -



Gender and sex analysis in research and innovation

Potential consequences

Consequences of ignoring sex differences I:

Reduced reproducibility

We found that exposure of mice and rats to male but not female experimenters produces pain inhibition. Male-related stimuli induced a robust physiological stress response that results in stress-induced analgesia. This effect could be replicated with T-shirts worn by men, bedding material from gonadally intact and unfamiliar male mammals, and presentation of compounds secreted from the human axilla.

Experimenter sex can thus affect apparent baseline responses in behavioral testing.

Consequences of ignoring sex/gender differences II:

Delayed diagnosis

Diagnosis in women with bladder cancer and haematuria is more likely delayed because attributed to cystitis

Although women refer more symptoms of asthma, they are less likely diagnosed. In girls wheezing is less common than in boys

Men are diagnosed later with osteoporosis and autoimmune diseases, because these are perceived as „female“

If not diagnosed correctly, men with MS are more likely referred to an orthopedic surgeon, women to a psychiatrist.



Consequences of ignoring sex differences III:

Mortality due to increase of unexpected side effects

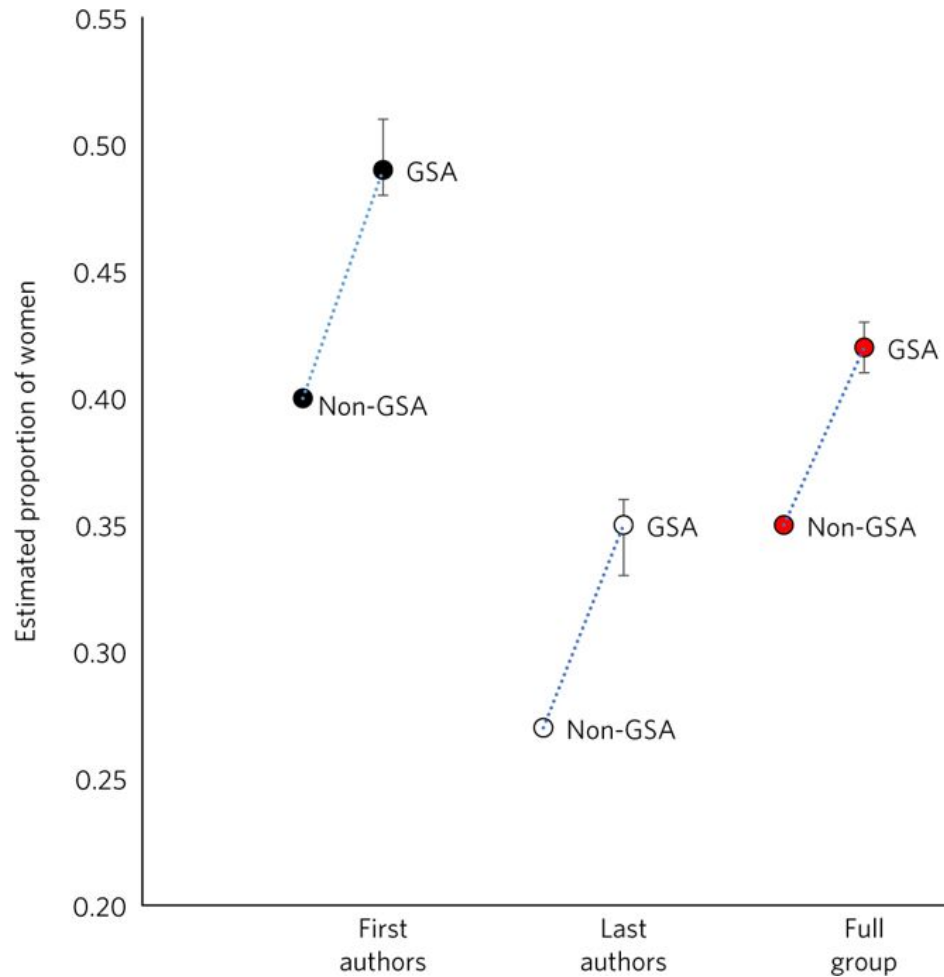
TABLE 1. PRESCRIPTION DRUGS WITHDRAWN FROM UNITED STATES MARKET, JANUARY 1, 1997–DECEMBER 31, 2000

<i>Drug</i>	<i>Type of drug</i>	<i>Date approved</i>	<i>Date withdrawn</i>	<i>Primary health risk</i>
Pondimin (fenfluramine hydrochloride)	Appetite suppressant	6/14/1973	9/15/1997	Valvular heart disease
Redux (dexfenfluramine hydrochloride)	Appetite suppressant	4/29/1996	9/15/1997	Valvular heart disease
Seldane (terfenadine)	Antihistamine	5/8/1985	2/27/1998	Torsades de pointes
Posicor (mibefradil dihydrochloride)	Cardiovascular	6/20/1997	6/8/1998	Bradycardia in elderly and adverse drug interaction
Hismanal (astemizole)	Antihistamine	12/19/1988	6/18/1999	Torsades de pointes
Rezulin (troglitazone)	Diabetic	1/29/1997	3/21/2000	Liver failure
Propulsid (cisapride monohydrate)	Gastrointestinal	7/29/1993	7/14/2000	Torsades de pointes
Lotronex (alosetron hydrochloride)	Gastrointestinal	2/9/2000	11/28/2000	Ischemic colitis
Raxar (grepafloxacin hydrochloride)	Antibiotic	11/6/1997	11/1/1999	Torsades de pointes
Durac (bromfenac sodium)	Analgesic and anesthetic	7/15/1997	6/22/1998	Liver failure

Why representation and content?

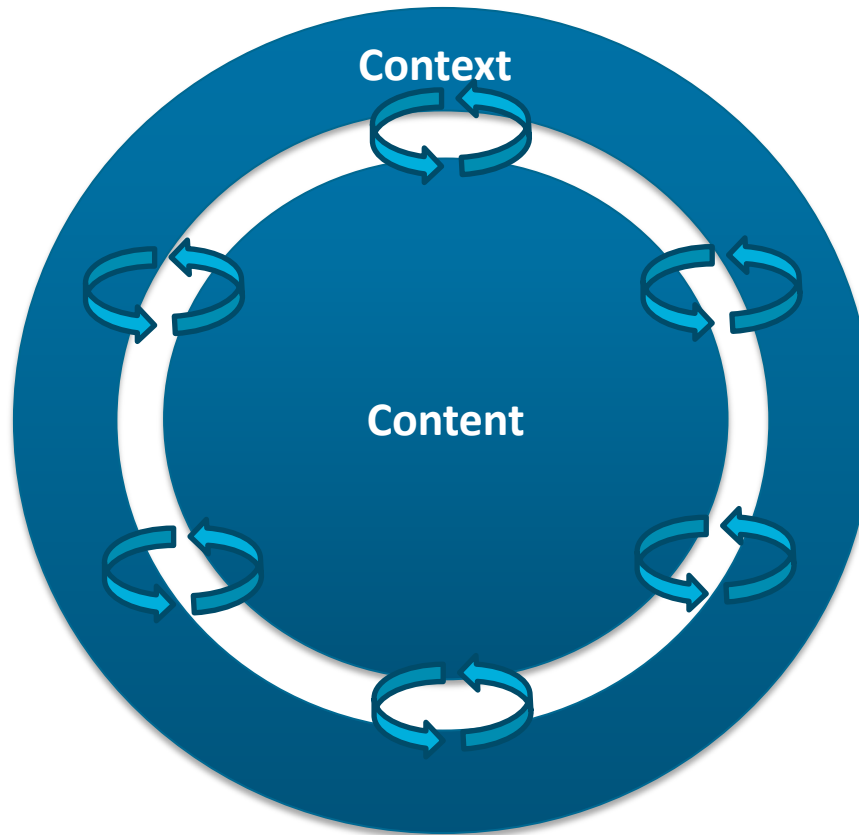
Why are there three gender dimensions?

Influence of the researcher on the researched topic



The gender dimension

Content and context



Thank you for your attention!

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@smoertelt



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