



# Incorporating gender perspectives in research

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Gender dimension in research  
Dimensión de Género organizadas

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# How are gender perspectives incorporated in research and innovation – in the case of robots and Artificial Intelligence (AI)?



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*I am determined to step up our efforts on gender equality and support more talented women in research and innovation. I am committed to ensuring that the gender dimension is fully integrated into research and innovation supported by Horizon Europe, and that it is fully acknowledged in the European Research Area.*

Mariya Gabriel, Commissioner for Innovation, Research, Culture, Education and Youth

## GENDER EQUALITY A STRENGTHENED COMMITMENT IN HORIZON EUROPE



### What is the challenge?

Despite progress achieved on gender equality in research and innovation under the Horizon 2020 research and innovation programme, we still need better implementation of EU gender equality objectives by research and innovation organisations across the EU, notably:

- More women participating in research and innovation programmes
- Better integration of the gender dimension in the content of research and innovation projects
- More participation of EU widening countries in actions dedicated to gender equality in research and innovation organisations
- Broadening gender equality policies in research and innovation to intersections with other potential grounds for discrimination such as ethnicity, disability and sexual orientation

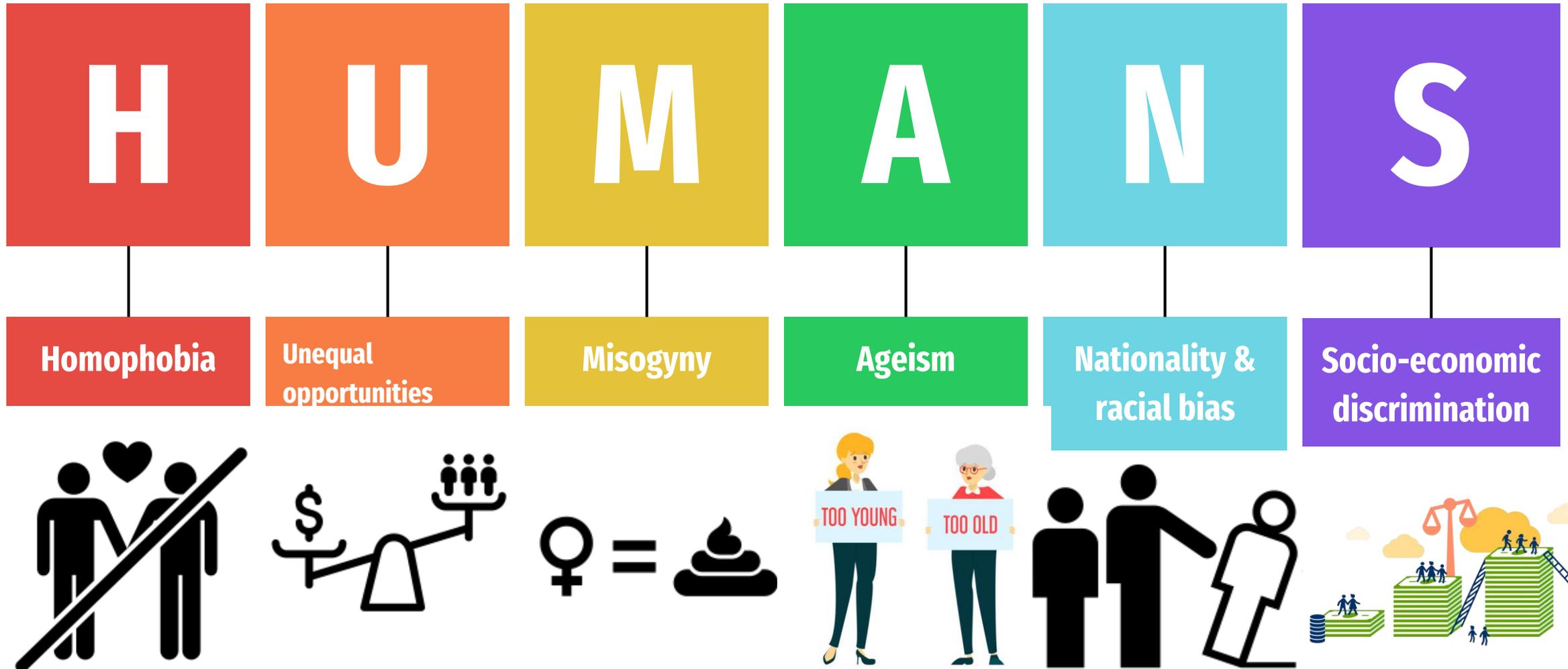
The Commission is taking concrete steps to address these challenges through Horizon Europe, in line with the Communication A New ERA for Research and Innovation and the new Gender Equality Strategy 2020-2025.



### How we will tackle it and for whom

- Horizon Europe sets **gender equality as a crosscutting principle** and aims to **eliminate gender inequality and intersecting socio-economic inequalities** throughout research and innovation systems, including by addressing unconscious bias and systemic structural barriers.

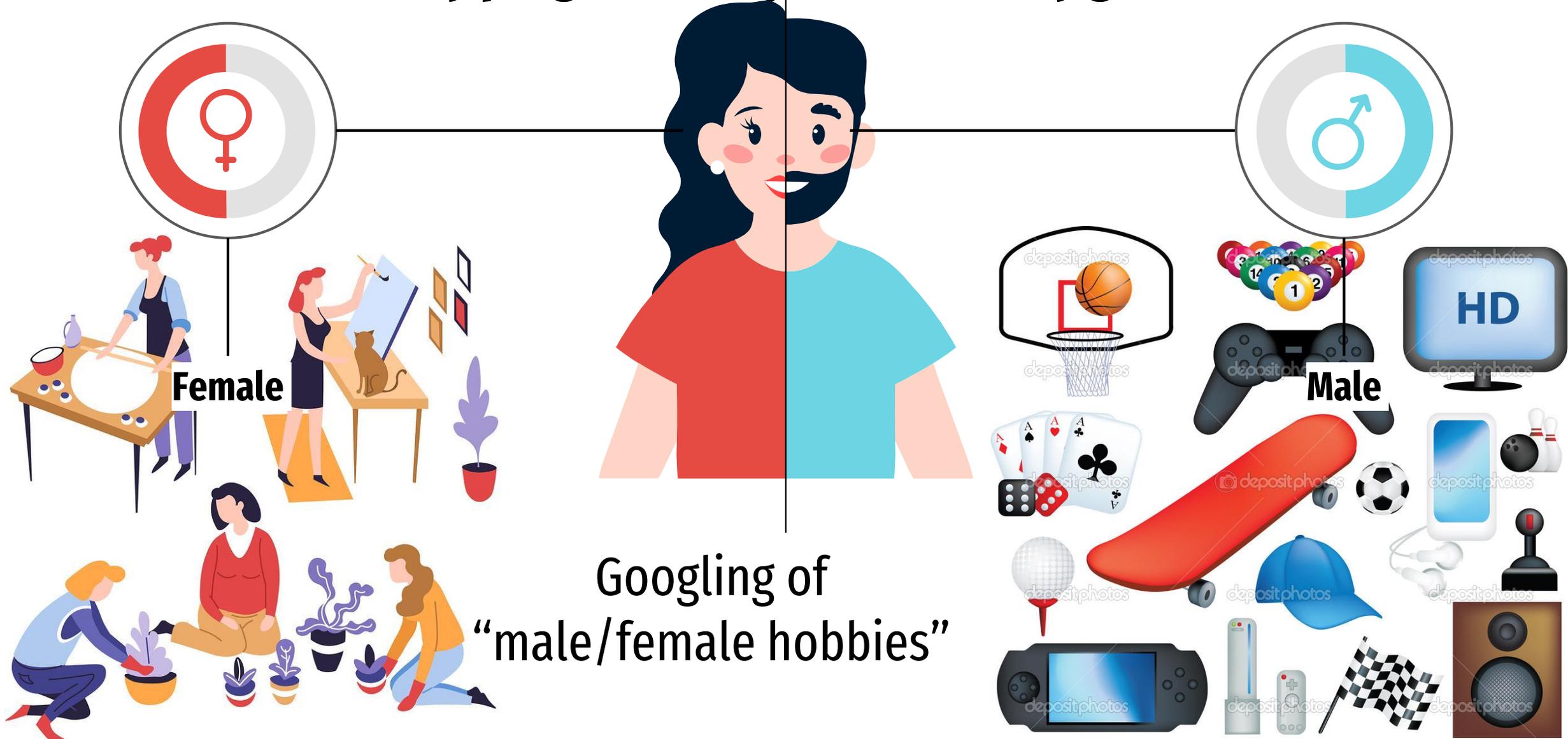
# Gender & diversity focus on exclusion & discrimination for **humans**



# Part 1: AI

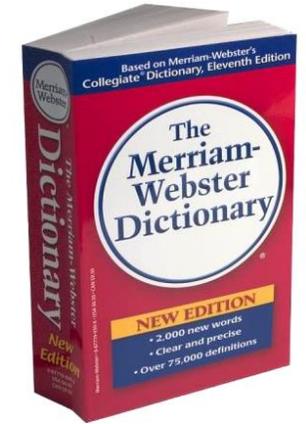


# Binary programs (re)produce binary gender



# What is artificial intelligence (AI)?

- 1 : an area of computer science that deals with giving machines the ability to seem like they have human intelligence
- 2 : the power of a machine to copy intelligent human behavior  
*// a robot with artificial intelligence*



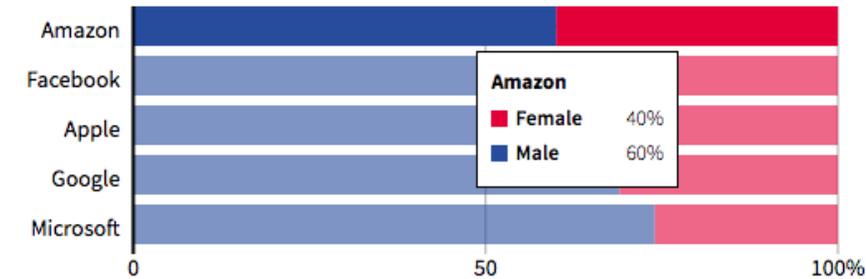
- However, AI is neither artificial nor intelligent. (Crawford, 2021)
- It is not “artificial”:
  - Hardware made from materials extracted from the earth
  - Human workers involved in all stages of building it
  - Software coded by humans is not bias free, but reproduced human environments
  - E.g. “configuring the (standard) user/ “I-methodology” (Oudshoorn, 2004)
- AI is not intelligent
  - ... if we measure against HUMANS!
  - Divide between:
    - “Narrow/weak AI.” Easy, simple tasks, done in intelligent manners, like chess
    - “General /strong AI” which is human-like general capability. The stuff of Science Fiction

# AI bias for worker recruitment

- In 2015, Amazon's AI recruiting system showed bias against women.
  - Historical data from the last 10-years to train their AI model.
  - Male dominance across the tech industry
  - The AI "learned" that recruiting male candidates were preferable.
  - Tagged word as negative, e.g. "women's chess club captain."
- In 2019, bias in job adverts, where Facebook targeted ads intentionally target by gender, race, age, religion etc.
  - Women shown job adverts for nursing or secretarial work,
  - Men shown job ads for janitors and taxi drivers (in particular men from minority backgrounds). (Dilgemi. 2020)

## GLOBAL HEADCOUNT

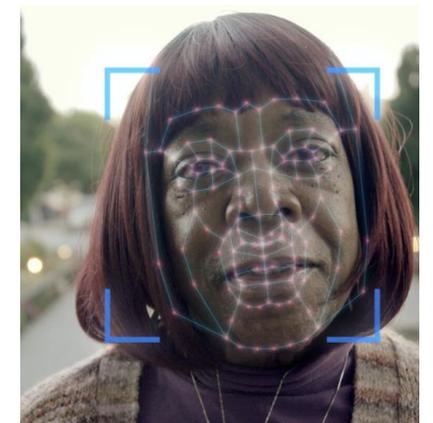
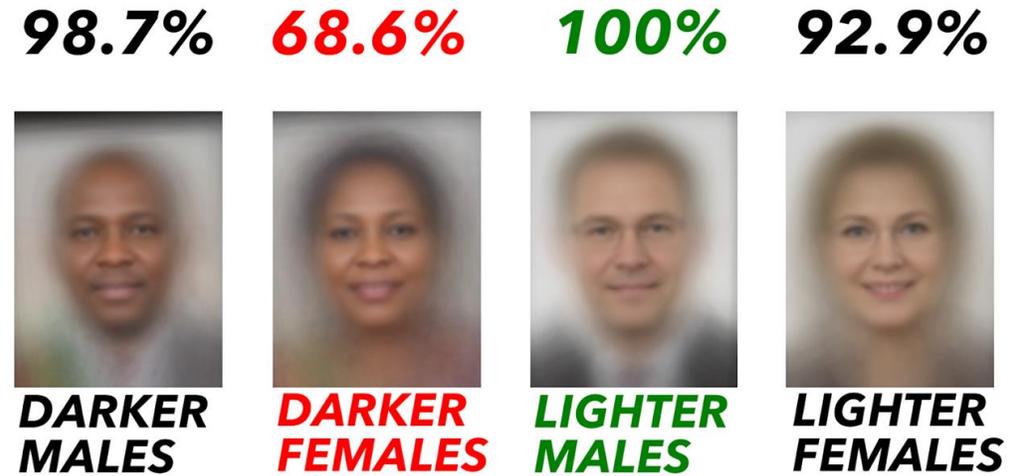
■ Male ■ Female



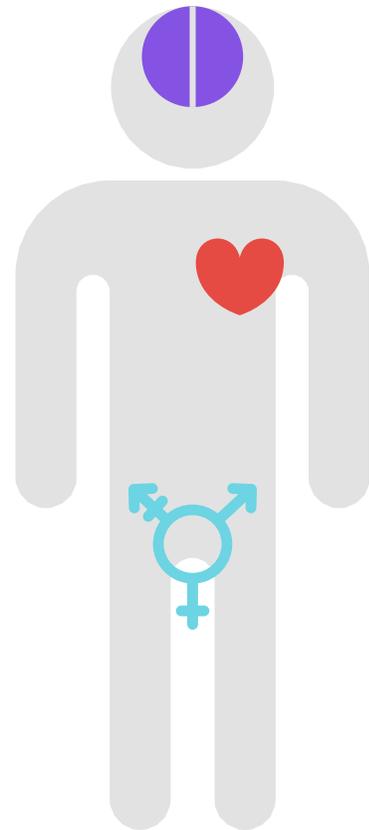
# Facial recognition problems

- For the large companies, a white male face is prioritized to be recognized. A dark female face is not.
- Trans people are deprioritized and discriminated against, e.g. (binary) airport control, security and surveillance

Buolamwini & Gebru (2018)



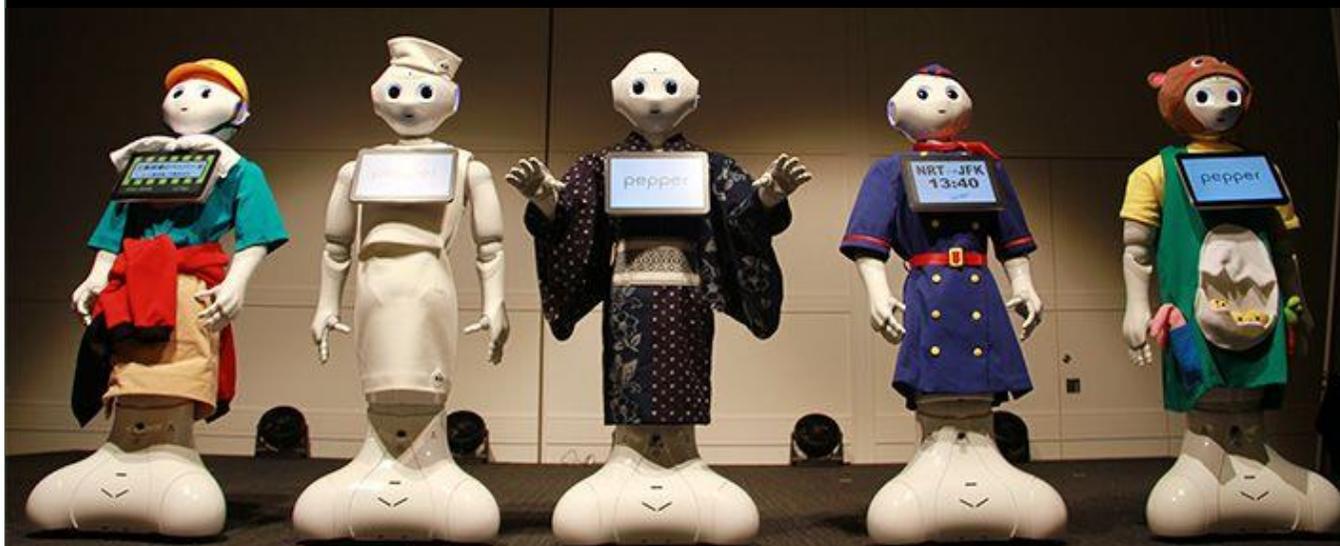
# Part 2: robots



NTNU

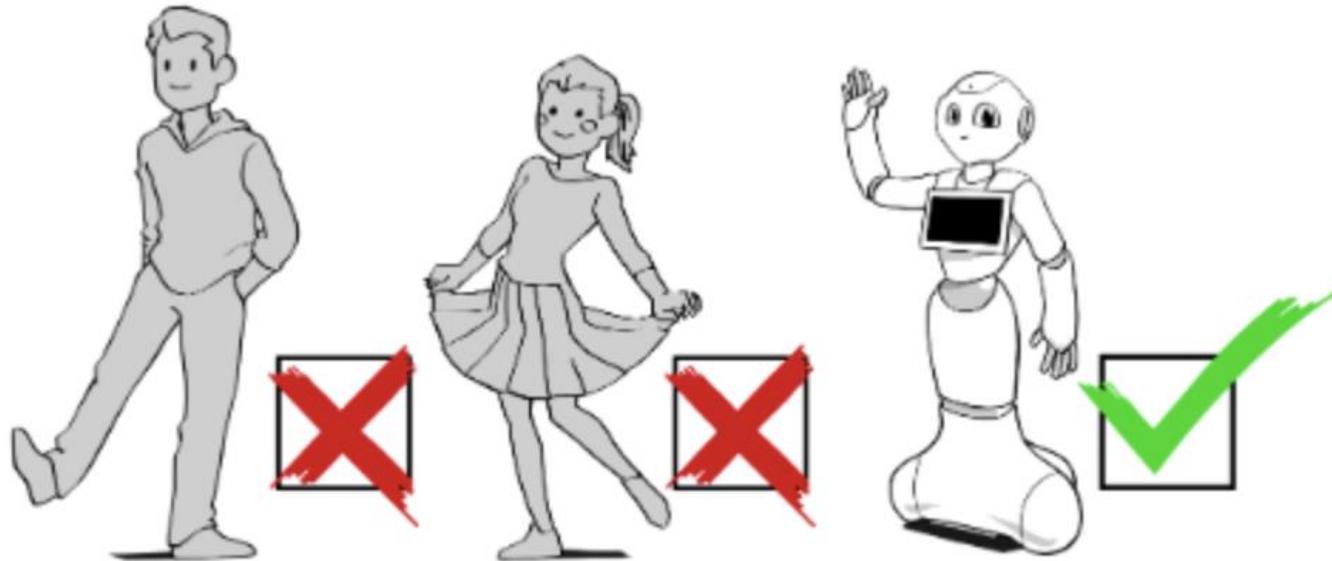
Norwegian University of  
Science and Technology

# gendering PEPPER



# Revoking gender?

B. Pepper is a humanoid but not a human



Pepper is a robot that has no gender

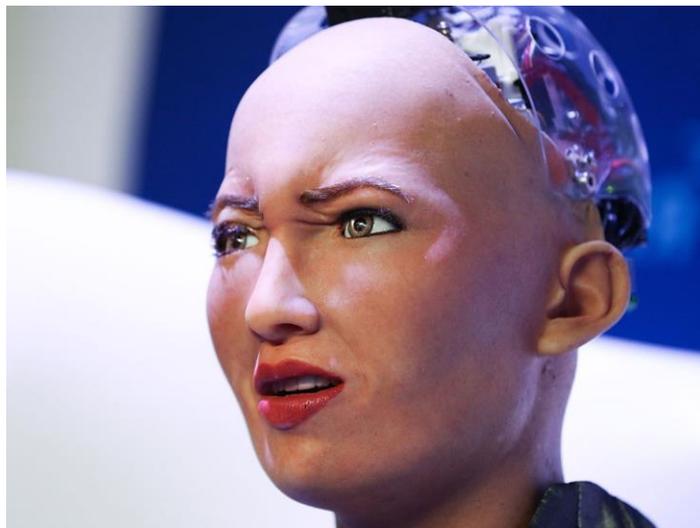
From developer's website

the more humanlike a robot  
becomes, the more gendered it  
becomes

Søraa (2017) “Mechanical genders: how do humans gender robots?”

# Sofia the robot

- Made by hanson robotics in 2016
- Modeled after Audrey Hepburn
- Citizenship in Saudi Arabia
- (before [human] women could drive in the country
- But is “she” a woman? female?



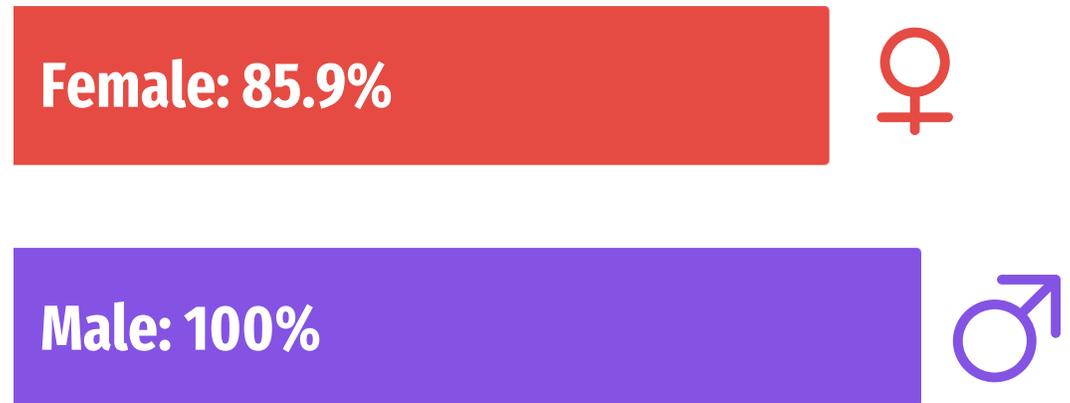
# Unwrapping mechanical genders

- *Anthropomorphization*, to attribute human qualities to a non-human thing
- Robot vacuum cleaners often have names and personalities
- Voice assistants gendered
- Inspiration from fiction
- More advanced robots are even more gendered
- How does gendering technology impact us as users?



# Gender in research

# Why it matters: European Equal Pay Day – 9th November



In the EU, women are hourly paid 14.1% less than men on average (2 months of salary)

# Sexuality and gender identity complicates

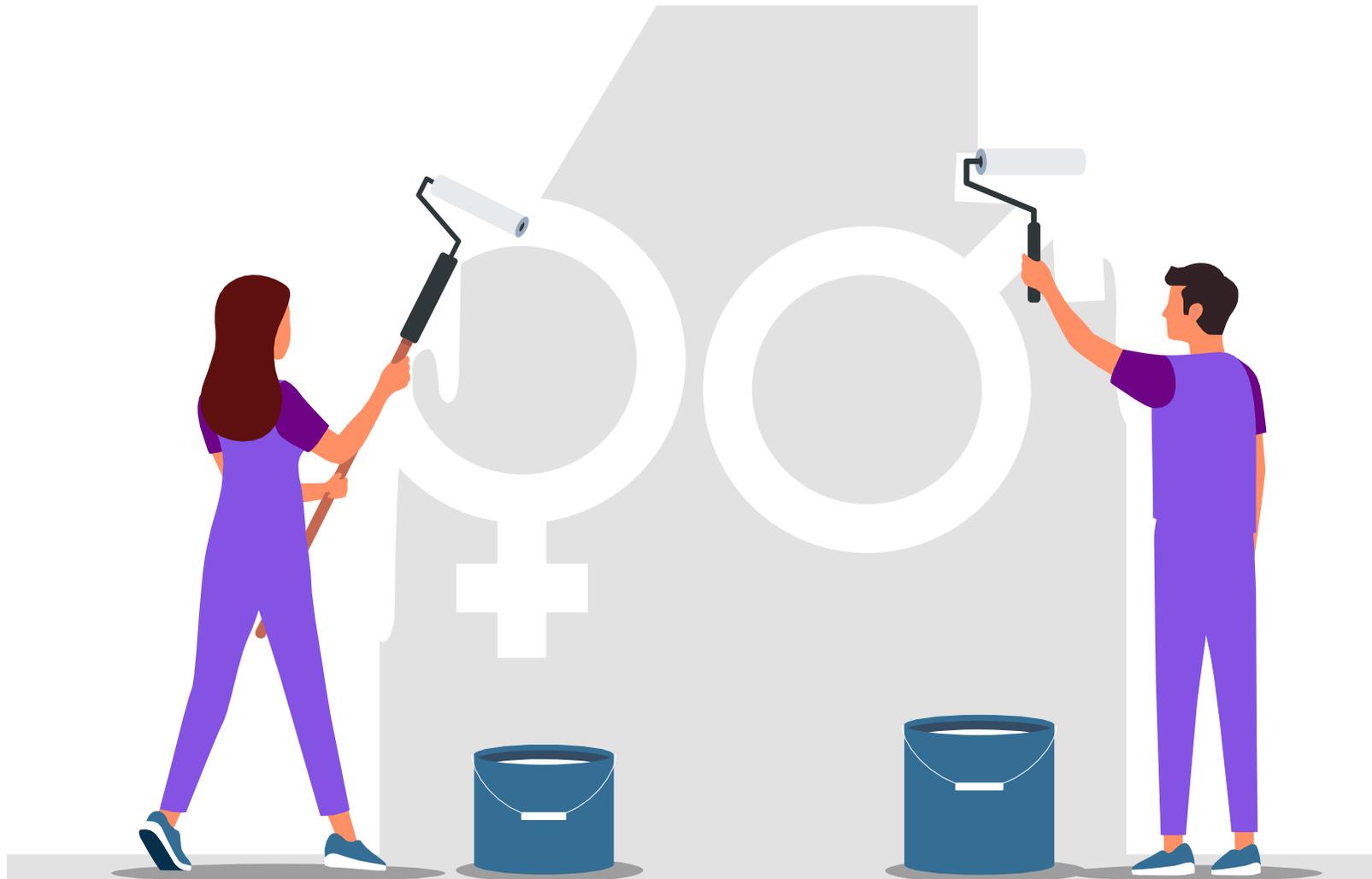
- What adds should Twitter show gay men?
  - Adds for “women”?
  - Adds for “men”?
    - How does it define what is male?
    - The straight default



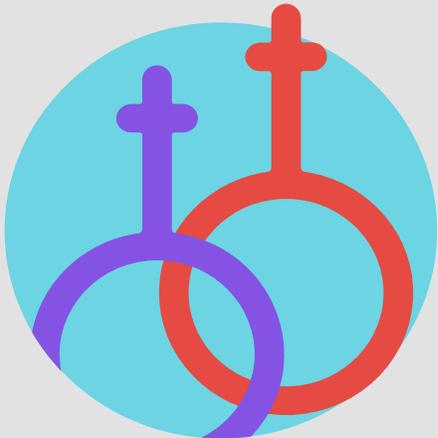
(Fosch-Villaronga et al, 2021)



# Erasing & hiding gender is not the way

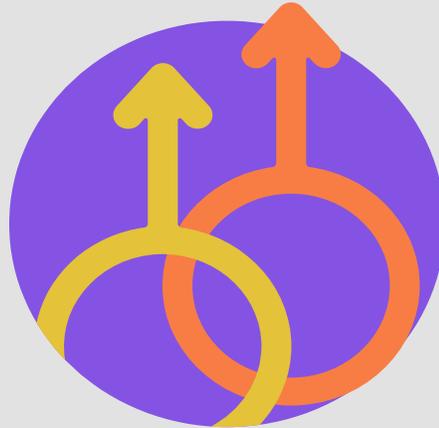


# The 3 main gender equality considerations in Horizon Europe



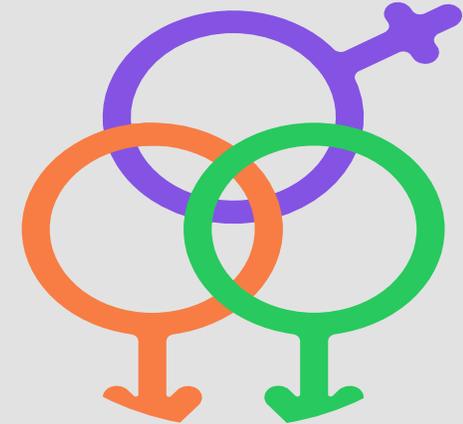
## Gender Equality Plan

...in place is an eligibility criterion for certain categories of legal entities from EU countries and associated countries.



## Integrating gender dimensions

... into research and innovation content is a requirement, an award criterion evaluated under the excellence criterion\*



## Gender balance

... and increasing gender balance throughout the programme has a target of 50% women in Horizon Europe related boards, expert groups and evaluation committees, and gender balance among research teams as ranking criteria.

# Key takeaways

- Technology is gendered, biased and socially situated
- Anthropomorphization is closely linked to gendering
- Awareness and responsible approaches can mitigate discrimination, and elevate good practices

# Thank you for your time

Let's continue the discussion

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