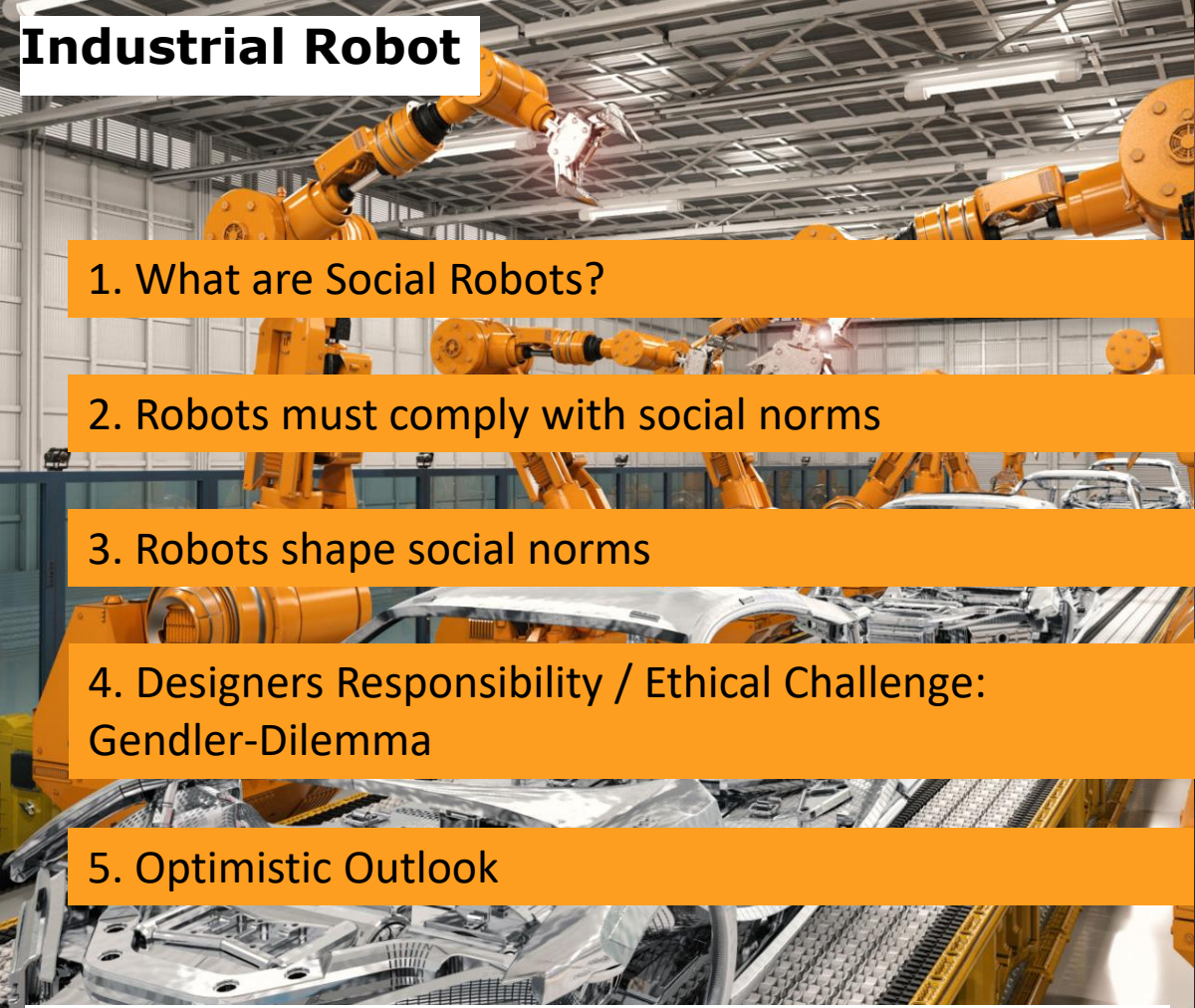


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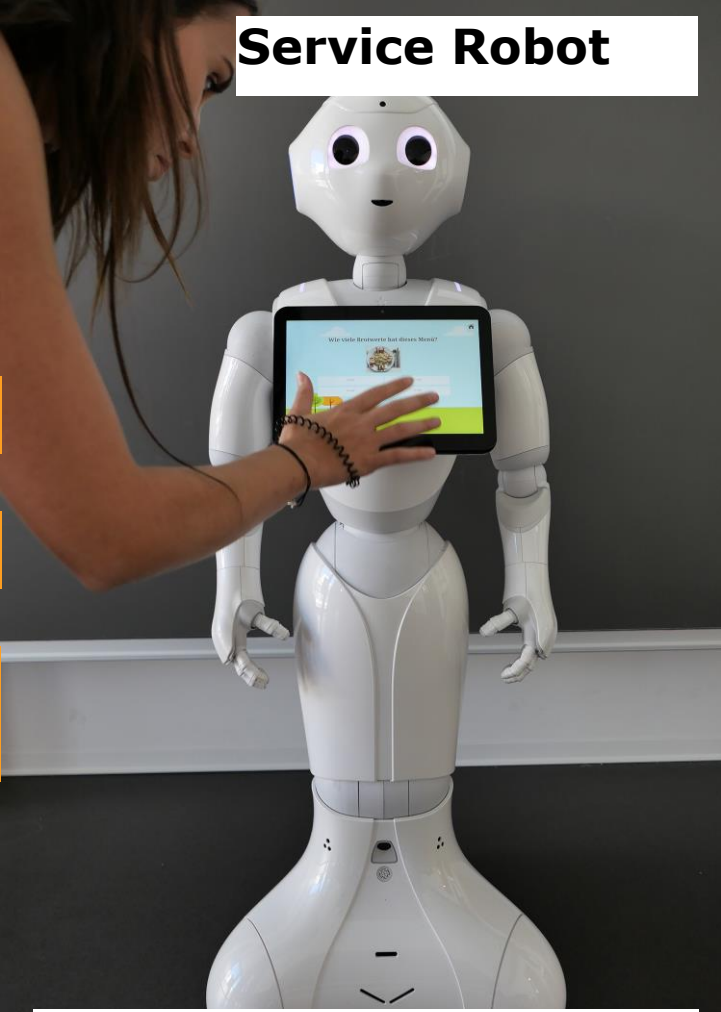
## Reinforcing or Reshaping Norms: Social Robots in Society





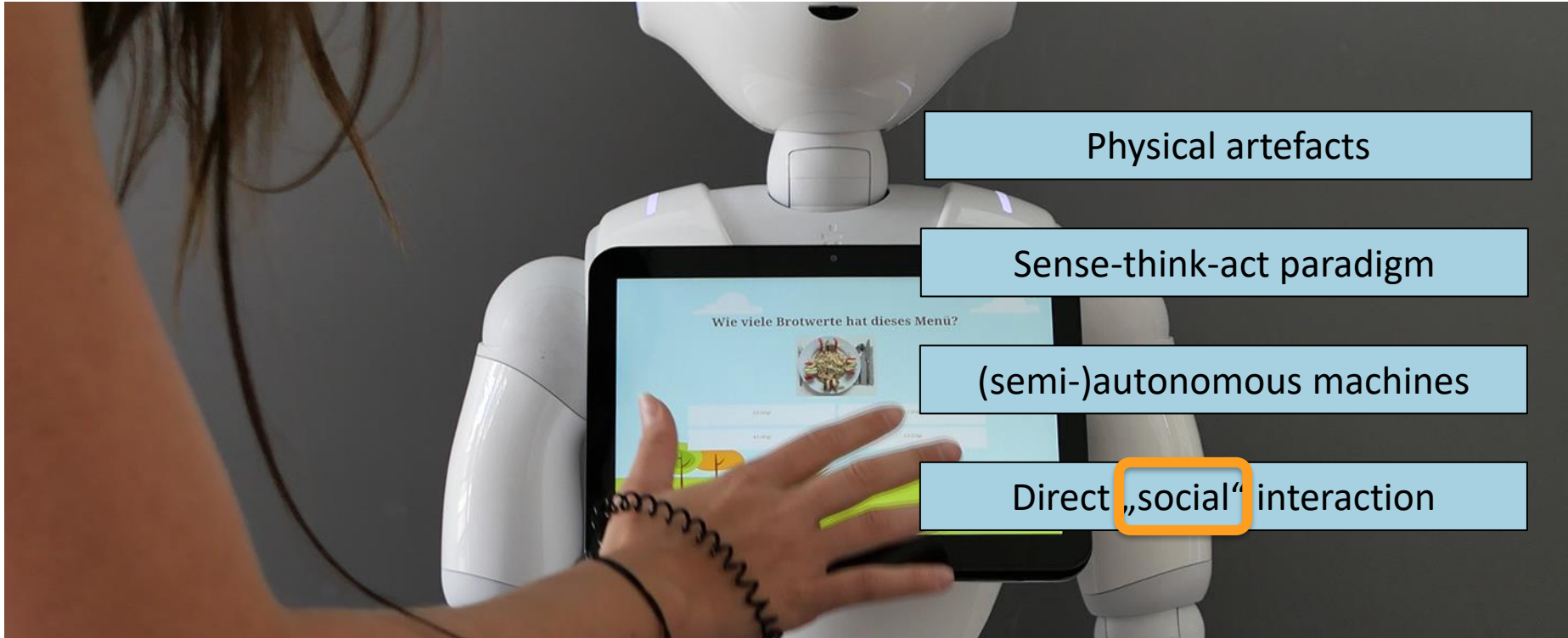
# Industrial Robot

1. What are Social Robots?
2. Robots must comply with social norms
3. Robots shape social norms
4. Designers Responsibility / Ethical Challenge: Gendler-Dilemma
5. Optimistic Outlook



# Service Robot

## Service Robot > Social Robot



## Social Robot

*"The gap between norms and robots is even narrower if we consider the fact that they function in highly regulated normative contexts."* (Leenes et al. 2014, p. 3)

*"I propose mutual shaping of robotics and society, which depicts a bidirectional dynamic between society and technology"* (Sabanovic, 2010, p.440)

*„...by studying interactions with robots in public spaces, we can better understand the range of behaviors and norms that robots will need to manage autonomously in longer-term deployments. (Bu et al. 2023, p.875)*

*"Technology gadgets [...] perpetuate gender norms such as sex robots that mimic feminine bodies"* (Hipólito et al., 2023, p.2)

*"robots and AI are performing among us, and as they increase in autonomy and sophistication they are increasingly performing the social norms that we have necessarily embedded in them."* (Millar, 2020, p.5)

## Social Robot – Comply with Social Norms

Robots must comply with social norms in order to perform their task

For Instance, robots must

- look their interaction partner in the eyes
- speak at an appropriate volume
- address individuals respectfully
- confirm gender norm
- ...

## Social Robot – Comply with Social Norms

Robots must comply with social norms in order to perform their task

1. Designers have a concept of social norms to delineate between acceptable and unacceptable

A behavioural rule,  $R$ , that is followed by a sufficiently large set of individuals within a group, and not by some other group. (p.9)

## Social Robot – Comply with Social Norms

Robots must comply with social norms in order to perform their task

1. Designers have a concept of social norms to delineate between acceptable and unacceptable
2. Designers embed these social norms into the robot
3. People experience those norms when interacting with the robot

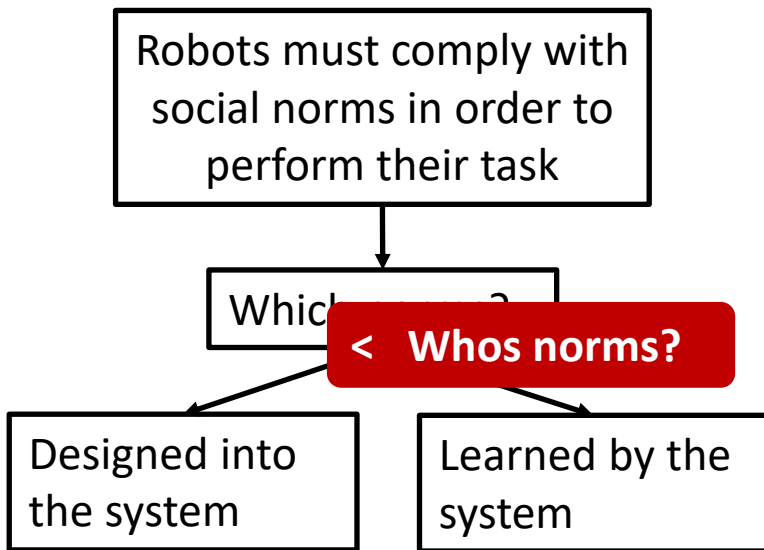
## Social Robot – Comply with Social Norms

Robots must comply with social norms in order to perform their task

An artifact suffers a social failure when a social norm designed into it comes into tension with an accepted social norm held by its user(s) [...]” (p. 9)

1. Designers have a concept of social norms to delineate between acceptable and unacceptable
2. Designers embed these social norms into the robot
3. People experience those norms when interacting with the robot

## Social Robot – Comply with Social Norms

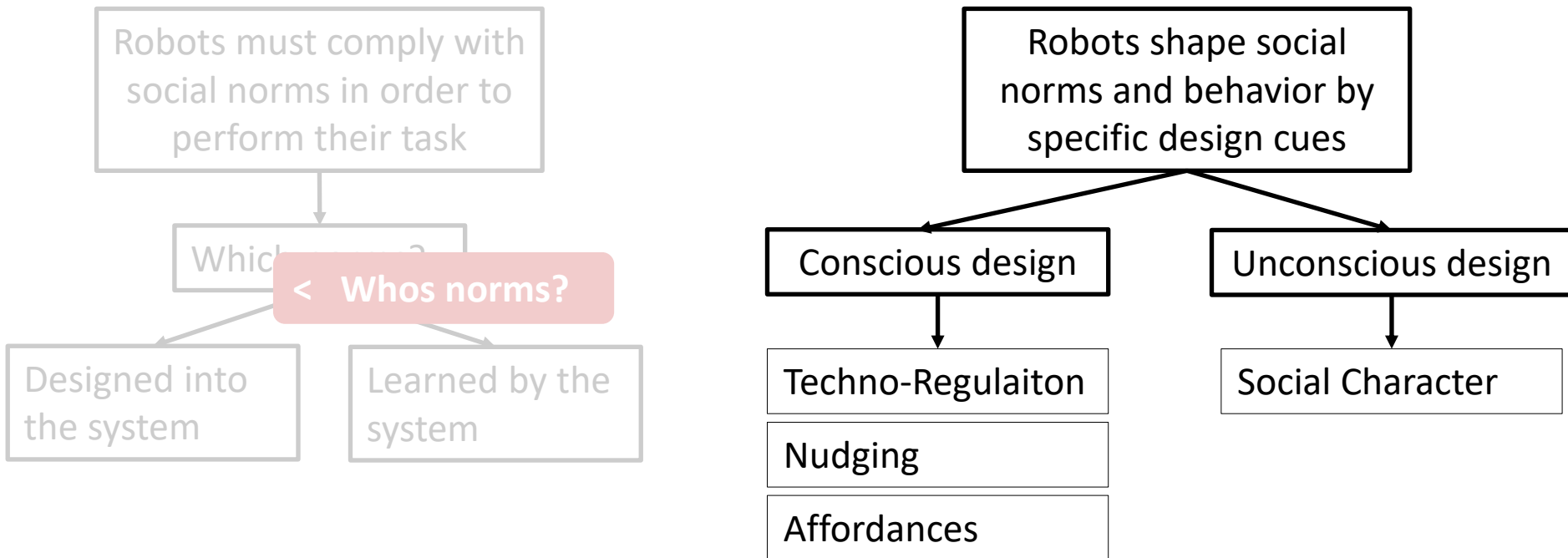


1. Designers have a concept of social norms to delineate between acceptable and unacceptable

2. Designers embed these social norms into the robot

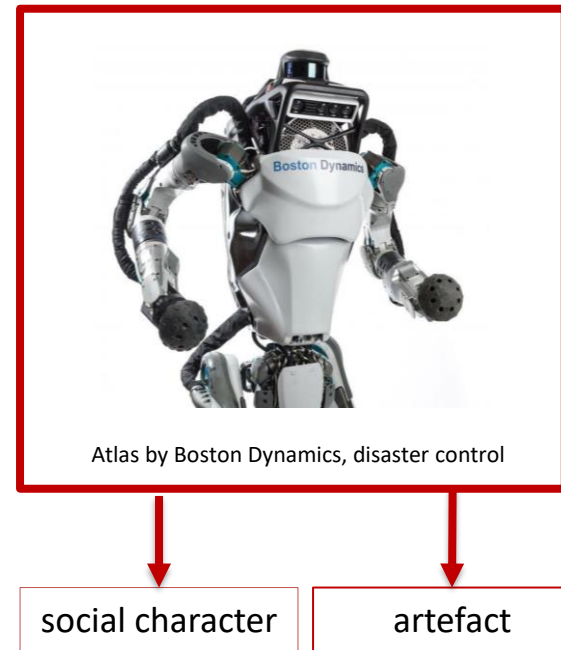
3. People experience those norms when interacting with the robot

## Social Robot – Shape Social Norms



## Social Robot – Shape Social Norms Depiction Approach

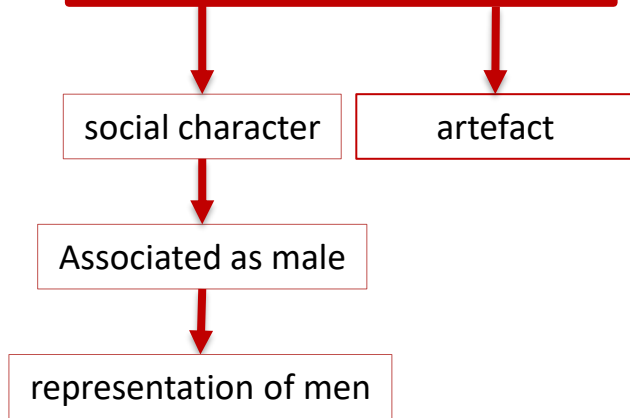
- By Herbert Clark and Kerstin Fischer 2023
- We perceive robots
  - “not as agents *per se*, but as depictions of agents” (p.1)
- We can change our perspective on the robot
  - Sometimes it is perceived as a social character
  - Sometimes it is perceived as an artefact



## Social Robot – Shape Social Norms Depiction Approach

The gendered robot has gender-specific properties and is therefore associated with a specific gender

- The individual robot represents the social class of women or men
- A robot gendered as male is a representation of men

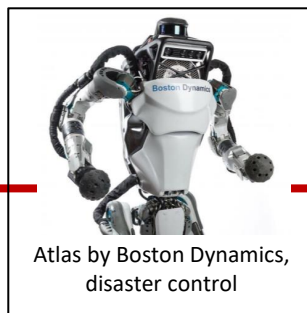


## Social Robot – comply with & shape Social Norms

Robots must comply with social norms in order to perform their task

Expectation: Men are better suited for disaster control

Design: Robots for disaster control are gendered as male\*



Robots shape social norms and behavior by specific design cues

Confirmation: Men are better suited for disaster control

Robot as a social character

\*Eyssel and Hegel 2012, Bernotat et al. 2019

## Social Robot – comply with & shape Social Norms

Robots must comply with social norms in order to perform their task

Expectation: Men are better soccer player

Design: Robots for the RoboCup are gendered as male



Robots shape social norms and behavior by specific design cues

Confirmation: Men are better at soccer

Robot as a social character

## Social Robot – comply with & shape Social Norms

Robots must comply with social norms in order to perform their task

Expectation: Women are better suited for service tasks

Design: Robots for Hotel-Greeting are gendered as female



Jia Jia greeting hotel guests

Robots shape social norms and behavior by specific design cues

Confirmation: Women are better suited for service tasks

Robot as a social character

## Social Robot – comply with & shape Social Norms

Robots must comply with social norms in order to perform their task

Robots shape social behavior by design cues

**Responsibility of Designer →  
Fraught with ethical challenges**

Expectation: Men are better suited for disaster control

Women are better suited for disaster control

Design: Robots for disaster control are gendered as male\*



Atlas by Boston Dynamics, disaster control

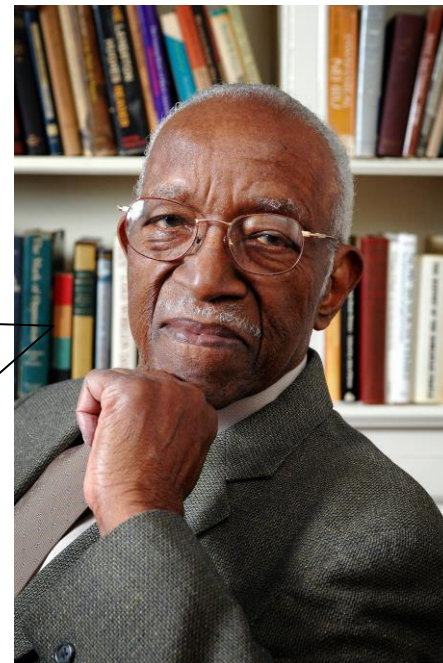
Robot as a social character

\*Eyssel and Hegel 2012, Tay et al. 2013, Bernotat et al. 2017

## Gendler-Dilemma

A dilemma between epistemic and moral obligations:

“It was during our stroll through the club that a ...woman called me out, presented me with her coat check, and ordered me to bring her coat. I patiently told her that if she would present her coat to a uniformed attendant, ‘and all of the club attendants were in uniform,’ perhaps she could get her coat” (Franklin 2005, p.340)



John Hope Franklin

## Gendler-Dilemma: How should robots be designed?

**epistemic ideals** – such as:  
Evidence indicates that usually,  
men work in disaster controll

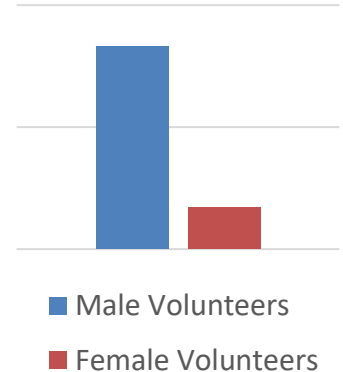
**vs.**

**moral ideals** – such as:  
Women and men are equally  
well suited for disaster controll



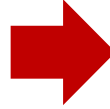
THW (Federal Agency for Technical Relief)

Volunteers  
Workers at THW,  
2024



## Gendler-Dilemma: How should robots be designed?

**epistemic ideals** – such as:  
Evidence indicates that usually,  
men work in disaster controll



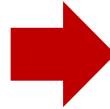
Design male-  
gendered  
robots



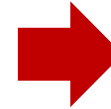
Robots are accepted and  
reinforce existing social  
norms despite their  
dubious morality

**vs.**

**moral ideals** – such as:  
Women and men are equally  
well suited for disaster controll



Design gender-  
less or female  
robots



Robots fail socially and  
are therefore neglected



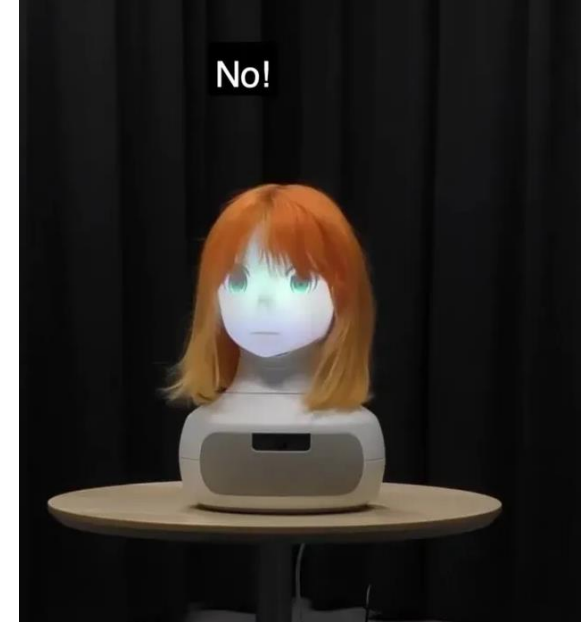
## Optimistic Outlook: Counterstereotypical Design



NASA's superhero Valkyrie



Pink Mars Rover Robot



Argumentative Robot in a Study by  
Winkle et al. 2021

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