REELER
Responsible
Ethical Learning
with Robotics

REELER WORKSHOP:
TOOLS FOR COLLABORATIVE LEARNING WITH USERS AND POLICYMAKERS

AARHUS UNIVERSITY
Ab.Acus
DE MONTFORT UNIVERSITY LEICESTER

"This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 731726"

PROGRAM

08:30 - 08:40 Introduction to the REELER project including mini-publics, by coordinator Cathrine Hasse (Aarhus University, Denmark)

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(with an opportunity to sign up to play the games with the researchers in the lunchbreak or poster session)

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ABOUT REELER

REELER IS A RESEARCH-DRIVEN COLLABORATION BETWEEN SSH-RRI AND ROBOTIC-ICT COMMUNITIES, WHICH AIMS TO RAISE AWARENESS OF THE HUMAN POTENTIAL IN ROBOTICS DEVELOPMENT.

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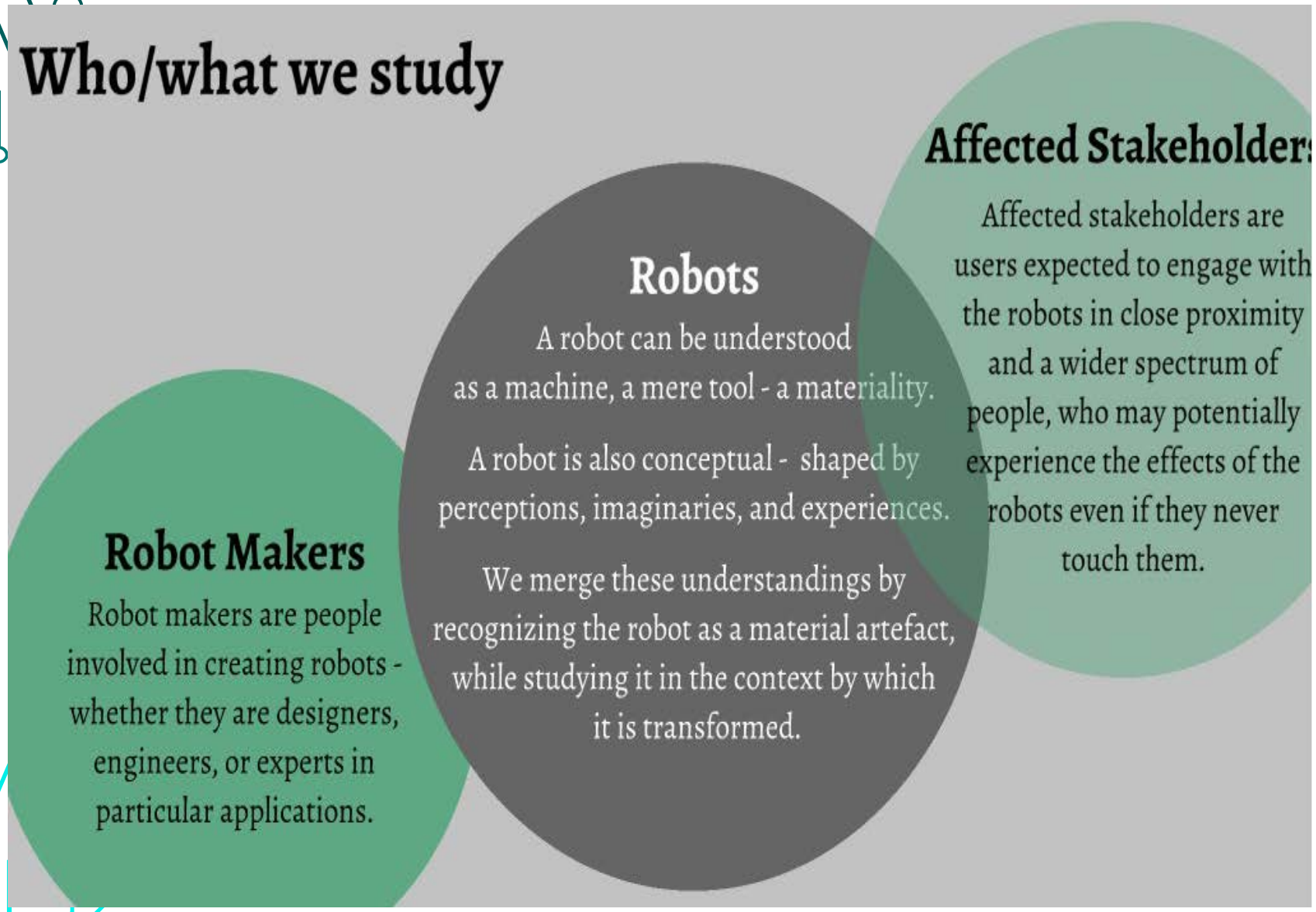
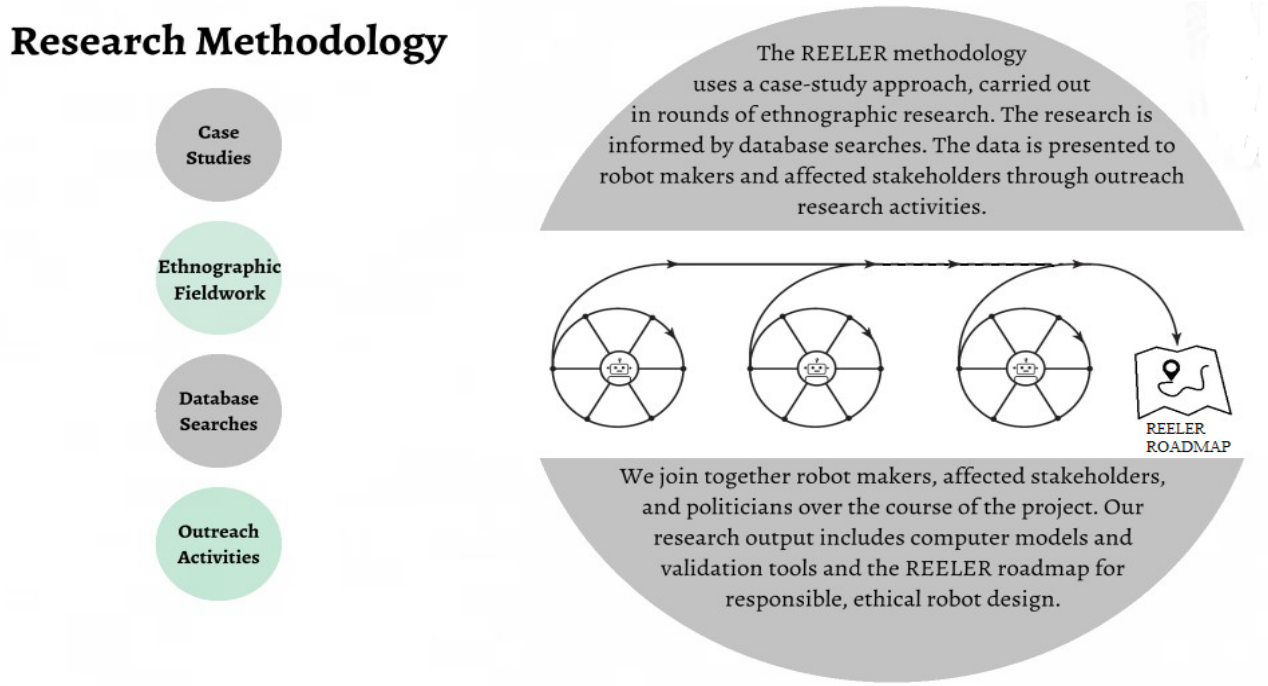
REELER: RESPONSIBLE AND ETHICAL LEARNING IN ROBOTICS



Align roboticists' visions of a future with robots with empirically-based knowledge of human needs and societal concerns.

Develop new concept of Human Proximity as a counterpart to Technological Readiness Levels

ETHNOGRAPHIC FIELDWORK & METHOD OF VARIATION



Countries covered by field work

Methodology: variation through ethnographic case studies across robot types and countries.
Internet studies; mapping countries and media representations.
Common conceptual ground: Relational Agency, Affected stakeholder, Collaborative learning, Relational Agency, Postphenomenology;

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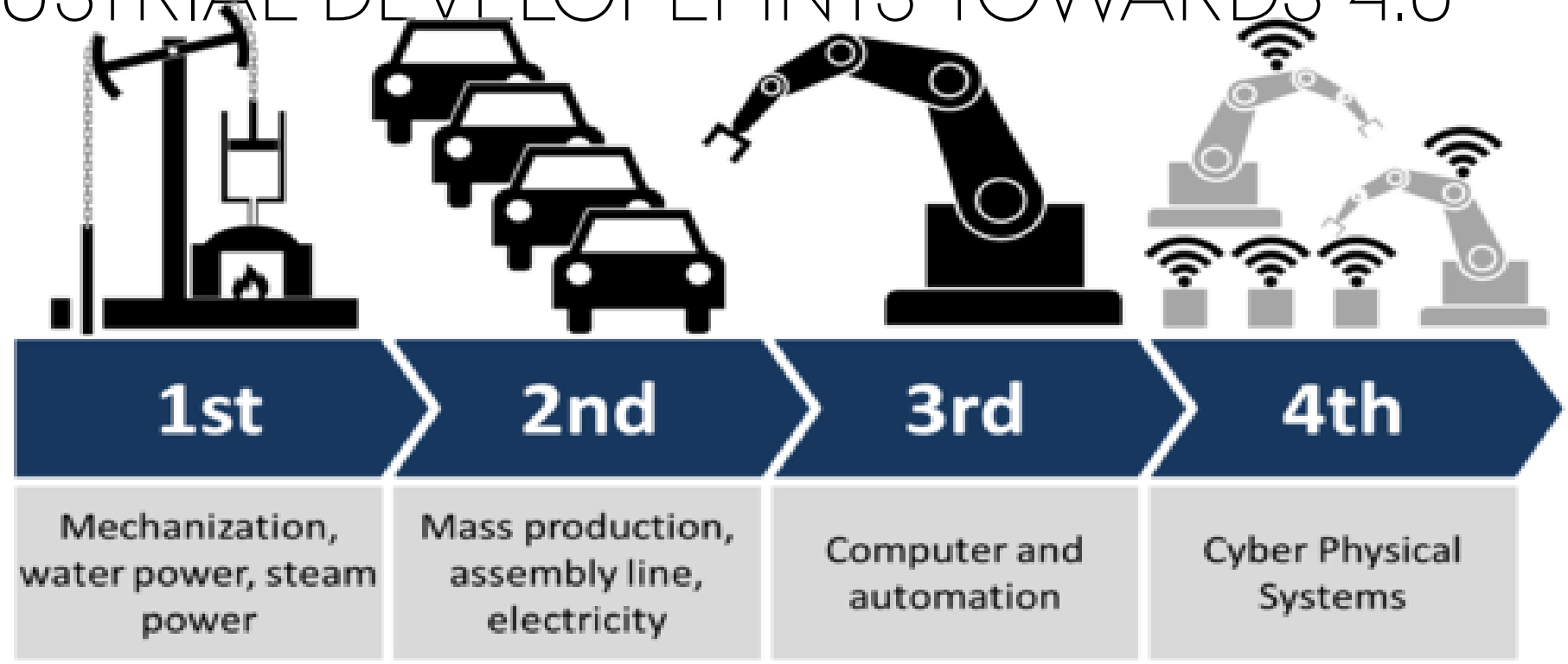
WHY DO WE NEED REELER:
INDUSTRIAL DEVELOPEMNTS TOWARDS 4.0



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ROBOTS UNCAGED

- Next-generation robots, including collaborative and service robots, are projected to account for two-thirds of unit robot sales by 2025.

- **Signals** for **Strategists**. **Robots uncaged** How a **new generation** of **sophisticated robots** is **changing business**. By **David Schatsky** and. **Amanpreet. Arora, 2016**.

- **This means entering a new close relation with people in everyday life situations**

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STAKEHOLDERS HAVE HIGHT EXPECTATIONS: INTELLIGENT ROBOTS IN HEALTHCARE

Participants identified a wide range of practical tasks. Lifting objects and people was discussed in all groups.

Manager: 'it would be able to stand a person up because a lot of people can't get from sitting to standing'.

Other tasks included filling and distributing water jugs and meals, cleaning, helping dress residents, picking things up, setting tables, making beds, and escorting residents. A robot could free staff from these duties, allowing them more time with residents.

Caregiver: 'The caregivers could spend a lot more time with the residents as well instead of doing these (basic tasks)

(Broadbent 2012, 116)

Broadbent E, Tamagawa R, Patience A, Knock B, Kerse N, Day K, MacDonald BA. Attitudes towards health-care robots in a retirement village. Australas J Ageing. 2012;31(2):115–120. doi: 10.1111/j.1741-6612.2011.00551.x.

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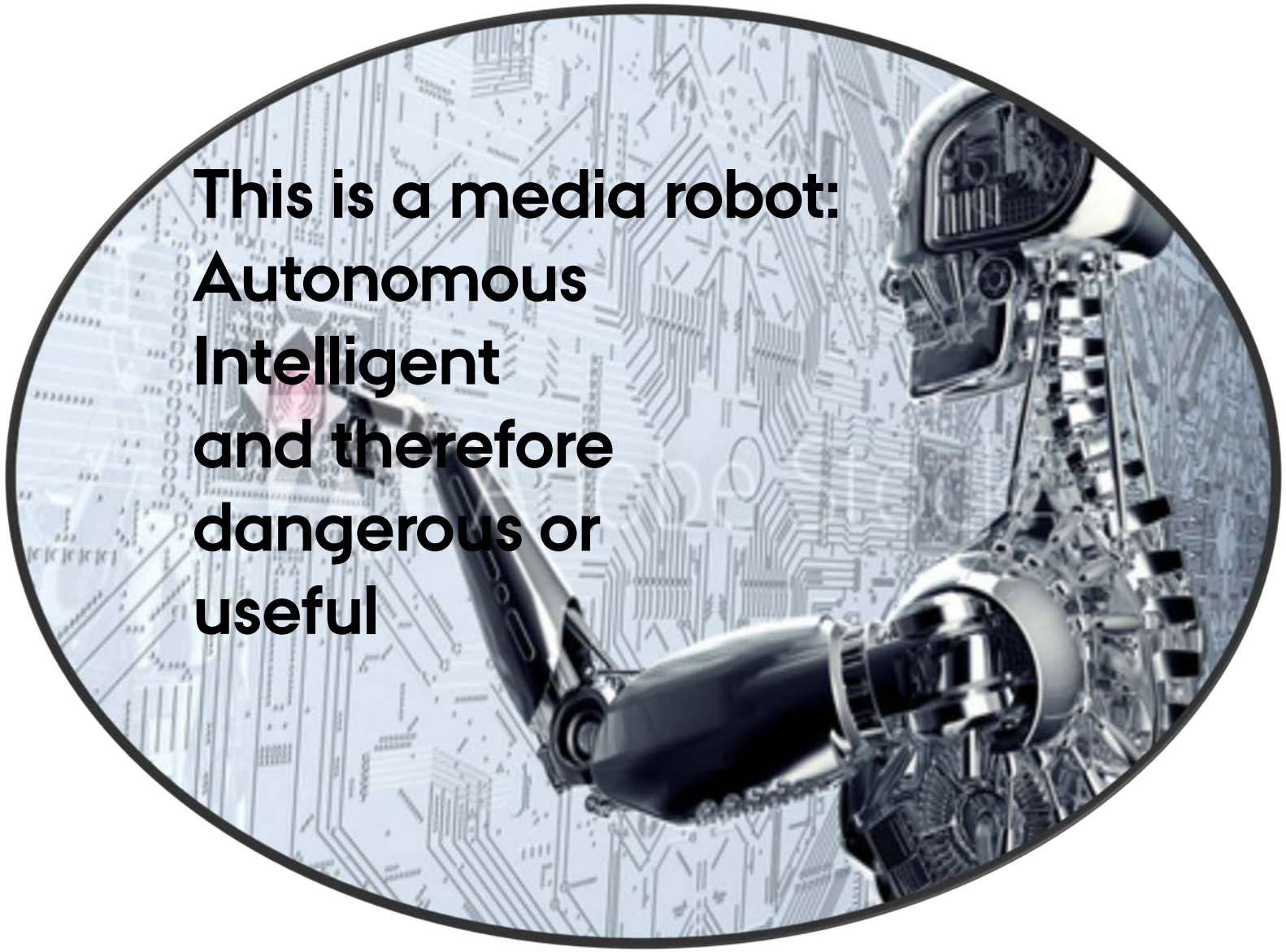
SOCIOTECHNICAL IMAGINATIONS



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SOCIOTECHNICAL IMAGINARIES

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MULTISTABLE GAP

This is partly so [that there is a gap between envisioned reality and reality] since the context in which academic reflection and research in ethics takes place is largely divorced from the context of innovation and practice. How can this gap be bridged?

- C.Stahl,M.Coeckelbergh/RoboticsandAutonomousSystems86(2016)

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MULTISTABILITY: ROBOTS AS TOOLS FOR ENGINEERS

AK: Well, it's a tool.

CL: It's a tool. And it AK: Yes. If it works you love it, if it doesn't work you hate it, right?

makes sense.

(Engineer about his robot)

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MULTISTABILITY: STAFF IN PRACTICE

It is “if they have one, we need one as well”, and that is - **you’re not allowed to say that, I know**, and I can’t prove it of course - but when you look at the science, what’s available for [our types of robots], we don’t have any evidence that the robot is better for the patient [regardless of what we measure]

There is no evidence, what so ever, that it is better than what we already have.

(Hospital staff in REELER)

MULTISTABILITY: IMPLEMENTER

- We are aware many of the technologies we implement are not mature.
- **People get disappointed.**
- In the public domain, we have very little tolerance with that. It is not enough that the [robot] works sometimes – it has to work *every time and be simple to use.*
- However, when people lose patience I do not see it as a technological flop. They just do not think these [robots] are of any use. And I simply do not understand that position.
- (Robot implementer in REELER)

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NEW REELER TOOLS FOR ALIGNMENT

- Some address the robot makers directly (based on SSH-research): Buildbot and Design simulation
- Some address the robot makers and social scientists/social dramatists as ‘cultural brokers’: Sociodrama or Social Drama
- Some address the robot makers and policy makers meeting with a wider public: Mini-Publics

TOOL FOR RELATIONAL AGENCY ALIGNMENT: **MINI-PUBLIC**

Aim:

1) to include the voice of new types of users and affected stakeholders and bring them to roboticists and policymakers, narrowing the current proximity gap between them;
2) to increase public knowledge about robots and their effects.

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TOOLS FOR RESEARCH & ALIGNMENT: MINI-PUBLIC : HTTP://REELER.EU/ACTIVITIES/

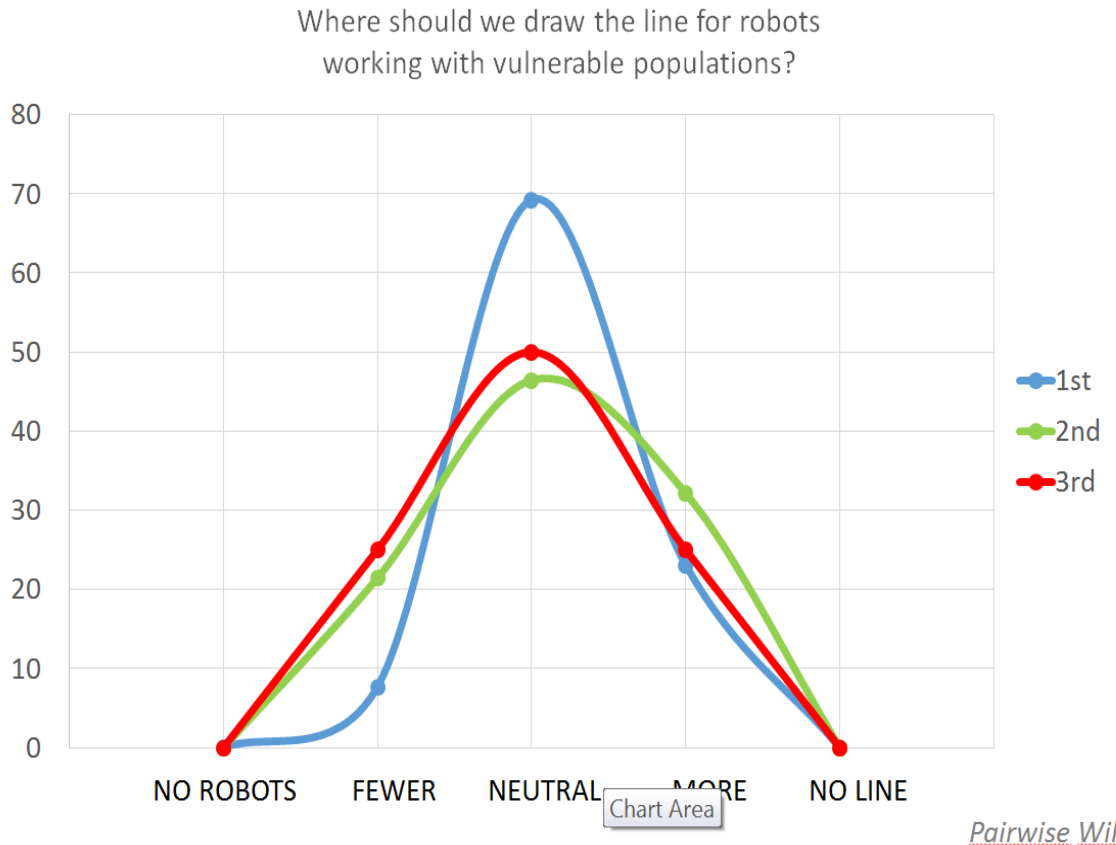
Outcome:

The opportunity to receive factual, unbiased information about the topic from different perspectives, such as economic issues, technological and social issues, was very welcomed among the general public.

For decision-maker it also seemed to be an interesting eye-opening event.

Figure 1: The table facilitator organizes the group responses during the deliberation process and discusses the issues with participants.

MINI-PUBLIC I: GIVING VOICE THROUGH VOTING



Remarkable cases:

K5 strong swing from neutral (1st) to more (2nd) to fewer (3rd)

Pairwise Wilcoxon signed-ranked test statistic is not significant

Figure 2: *Outcome* of Mini-public voting.

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NEW INSIGHTS

- *"... it was really interesting for me to hear your views as citizens and as practitioners. And I came and I had to vote the first time in the morning and I said more robots because I'm terribly excited, that's the reason why I'm doing the job I'm doing. And I went to neutral. Because listening to all your questioning, all your concerns, all your fears, I kind of felt less confident that we knew exactly where we are going. (Policy maker)*

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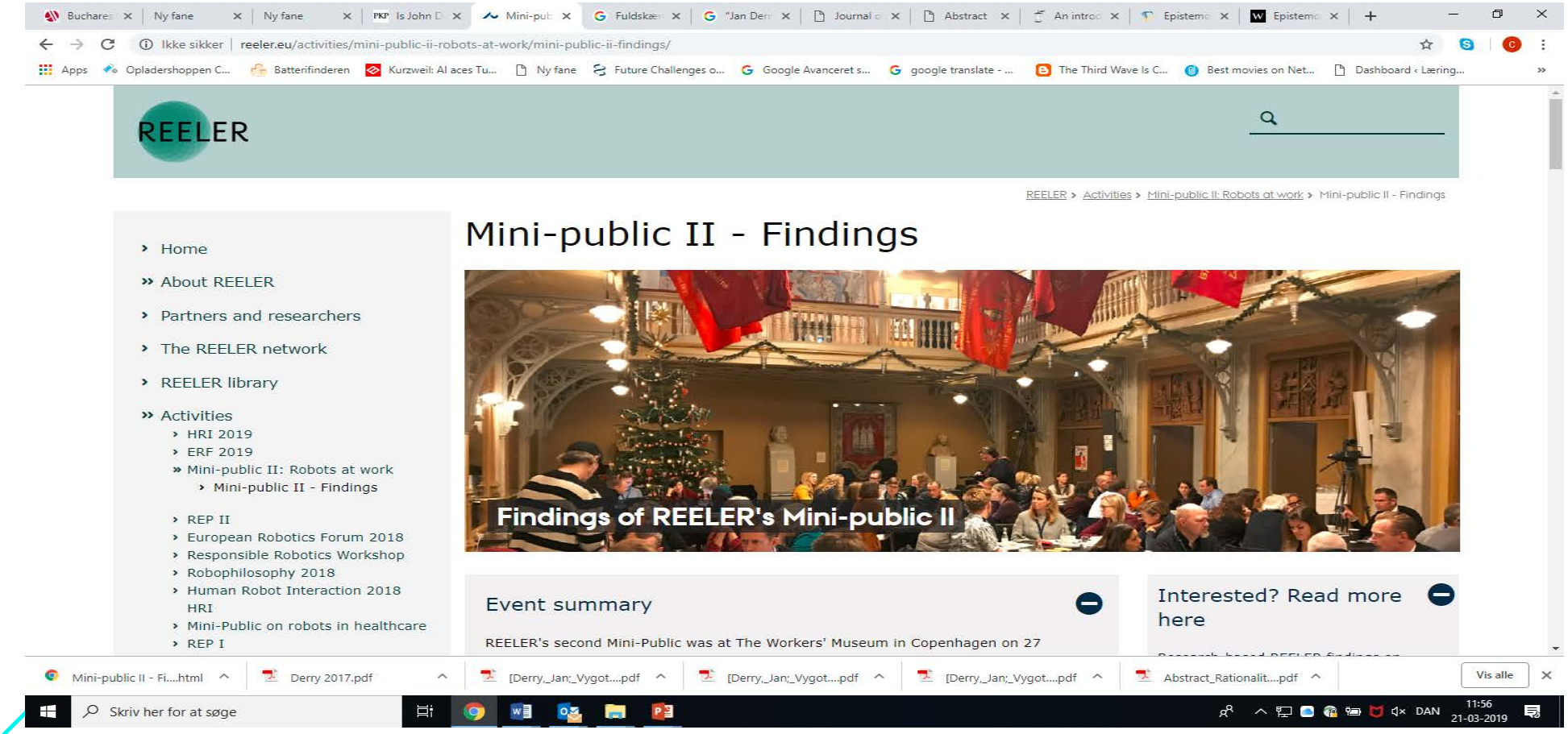

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