
KUKA

Social scientists involved in technology development

Experiences with social drama

ERF Session: Tools for collaborative learning with users and policymakers

22.03.2019

Nadine Bender

Before we start

Choose one of the concepts below or come up with your own

- Ethics
- Communication
- Dignity
- Human development
- Future of work
- Fieldwork
- Motivation
- Design Process
- …

- Engineering
- Exploration
- Learning
- Innovative systems
- Curiosity
- Autonomy
- Reluctance
- …

Note it down somewhere

Social Scientist in Technology Development

- Educational background
  - ➢ Bachelor in Social Sciences
  - ➢ Master in International Financial and Political Relations

- Work Life
  - ➢ Scientific researcher in the KUKA Innovation Office (2.5 years)
    - ▪ Small team
    - ▪ Colleagues with mixed educational backgrounds

  - ➢ Analyst Social Impact of Robotics in the KUKA Corporate Research (since 09/2015)
    - ▪ Up to 40 colleagues
    - ▪ Apart from administrative team (4 persons), all others are engineers of some sorts
    - ▪ Island topic

Source: http://en.espn.co.uk/olympic-sports/sport/story/280229.html

Experiences with Social Drama

Jacob Moreno's *Sociodrama (1932)* is a creative action method used with groups to **explore the dynamics, communication, culture and power relations** between multiple roles within or between organisations.

Within the context of the REELER project, Sociodrama has been adapted to ***Social Drama*** and facilitates the exploration of how sociality influences and shapes the work of the REELER research team, and how the work of roboticists and technology shapes sociality.

Adapted form REELER material

Social Drama as a method

Collaborative learning between robotic engineers and social sciences	⑩ Work in engaged creative and spontaneous explorations of wider cultural and philosophical issues and themes
Goals	• Explore a particular issue from multiple perspectives • Reflect on responsible ethics in relation to robots • Explore how social scientists can contribute to the expertise of roboticists with their own expertise

Picture source: https://www.eschoolnews.com/2015/11/18/collaborative-learning-986/

How does it work?

Grouping	• Have participants select either a concept/theme or decide for a robot • Form groups of 3, maximum 4 protagonists: Each group needs one 'roboticist protagonist' impersonating the robot in question paired with at least two social scientists that can impersonate themes connected to their expertise
Planning the action + warm-up	• 40 minutes to get acquainted with details about the robot and concepts • Devise a scenario/sketch that could open a discussion they would like the other groups to join • Find a scenario based on their robot that also included their concepts/themes
Sharing	• Each group dramatizes their themes with a relevant scenario. Max. 5 minutes per group.
Processing	• Protagonists are asked to stay on the stage and engage in an approx. 30 min. dialogue with the rest of the audience. • Protagonists take on the role of their theme or robot and thus answer questions from the perspective of e.g. ethics, learning, design or a given robot.

Picture source: http://www.writeratplay.com/2017/12/29/how-to-format-a-stage-play-script/

Transfer of REELER's social drama method to the Corporate Research at KUKA

- Corporate Research: 35 developers with different fields of expertise – all engineers
- Most profound difference: At REELER, concepts have been embodied by social scientists, choosing themes from their field of expertise
- Voluntary experiment at CR: 9 participants from different Clusters of CR, 2 female/7 male engineers
- Chosen concepts:
  - ❖ At both the REELER and the CR social drama:
    - o Ethics
    - o Future Employment
    - o (Communication – different interpretation!!)
  - ❖ New in the CR experiment:
    - o Safety
    - o Skepticism
    - o Autonomy (in the daily life)

Example: *Ethics* in the REELER / CR scenarios

Similarities:

✓Similar care-at-home scenario with the same setting (grandma living on her own, children/grandchildren very busy, grandma has accident, robot has a defect)

✓Human-human interaction endangered through technology

→ CR suggestion: design solution which makes humans aware of this development/danger

Additional topics @ CR:

➢ Difference between internalized ethics of a person vs. ethical responsibility towards society/others

➢ Ethical design: Physical safety – current standards and certificates don't include societal aspects/issues at the moment

→ Is top-down the right method or should ethical responsibility be ensured differently?

Example: *Future Employment* in the REELER / CR scenarios

Similarities:

- ✓ After a first period of skepticism, the robotic help was accepted by the worker
- ✓ New work requires new skills
- ✓ New work was experienced as “more exciting”

  → Very positive feedback

Additional topics @ CR:

- ➢ Requests for re-education measures by the employer or state
- ➢ More training for workers and better communication when implementing the robot
- ➢ Financial reimbursement for workers that were driven out

Summary and lessons learned

- ***Communication*** was an important theme at the CR experiment
  - There are different meanings for the concept ***Communication***
  - Very prominent in the CR team because a research focus lies on it?
- The concept ***Safety*** was no topic in the REELER social drama
  - Do social scientists see it as a „boring“/already solved issue?
- ***Autonomy*** *in* ***Daily Life*** and ***Dignity*** (REELER) came into play in similar scenarios and generated similar reactions
- The discussions after the group plays differed
  - More critical in the CR
  - More solution oriented in the CR
  - The ability to discuss from the perspective of the chosen concept was very similar, very rarely engineers had to be reminded to “stay in their concept”
- When presenting the experiment to the whole department, non-participants did not understand how colleagues could see their scenarios/robots in their scenarios so critically

KUKA

Thank you very much for your attention!

Get in touch:

Nadine.Bender@kuka.com

Also: on twitter, LinkedIn and Xing ☺