



Rathenau Instituut

Extending reality

On the social impact of AR in the Netherlands

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Lilian van Hove



VARR - 8 November 2019 - Amsterdam

Rathenau Institute

- **Founded in 1986**
- **Royal Dutch Academy of Sciences, financing ministry of Education**
- **Mission:**
 - To support the formation of political and public opinion on socially relevant aspects of science and technology.
 - Societal perspective
- **Around 60 staff members**



1. What is the current state of AR technology?
2. What ethical and societal issues are associated with use of AR?
3. How can politics and government in the Netherlands steer the development of AR in a socially responsible way?

Pokémon Go





Businesses paid to have Pokemon Go players directed to their locations, says author



We're living in an age of 'surveillance capitalism,' says Shoshana Zuboff

CBC Radio - Posted: Feb 28, 2019 2:53 PM ET | Last Updated: February 28



THE AGE OF SURVEILLANCE CAPITALISM

THE FIGHT FOR A
HUMAN FUTURE
AT THE NEW
FRONTIER OF POWER

SHOSHANA
ZUBOFF

Intimate technology moment

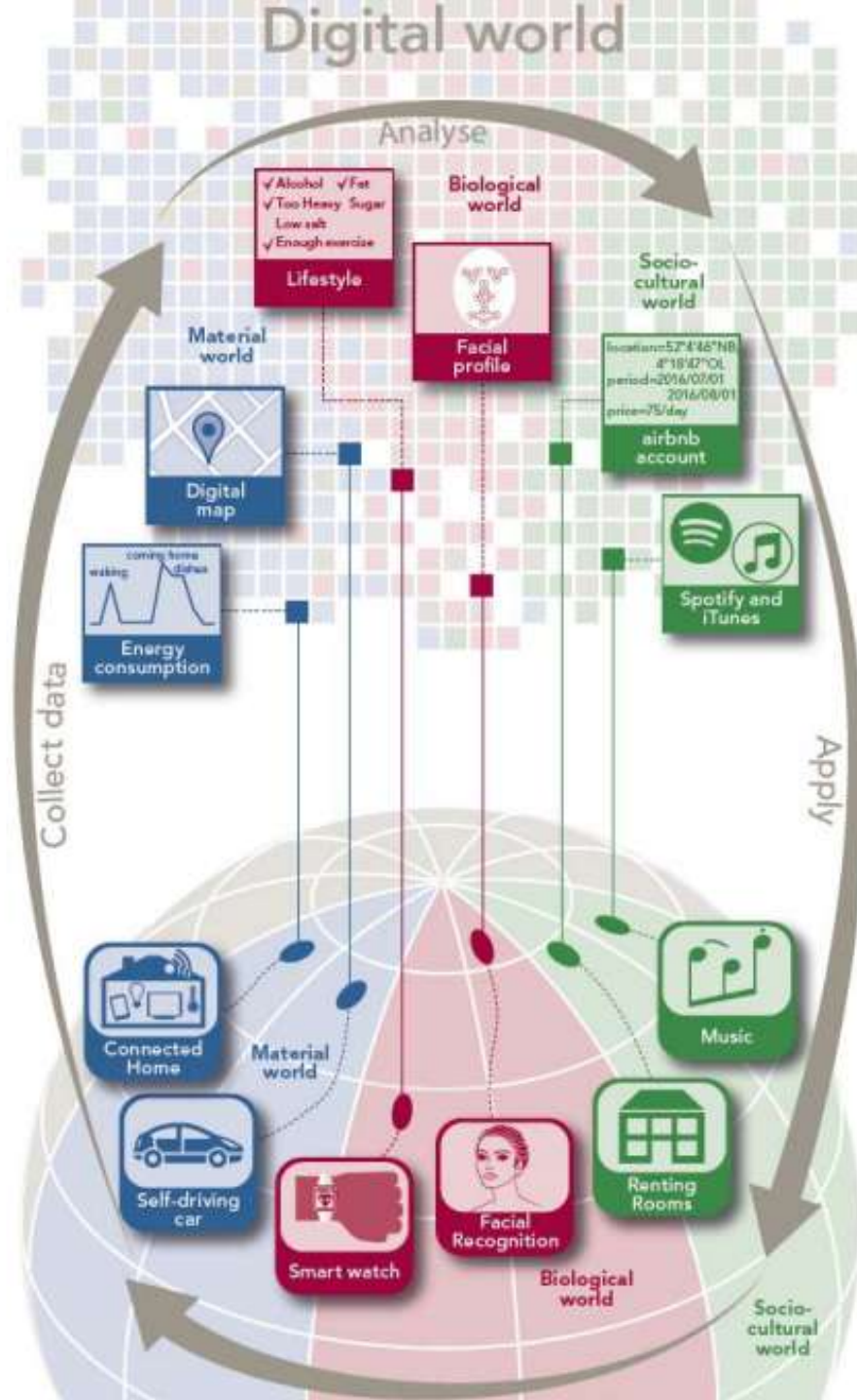
**Technology
nearby and in us**

**Technology
between us**

**Technology
Just like us**

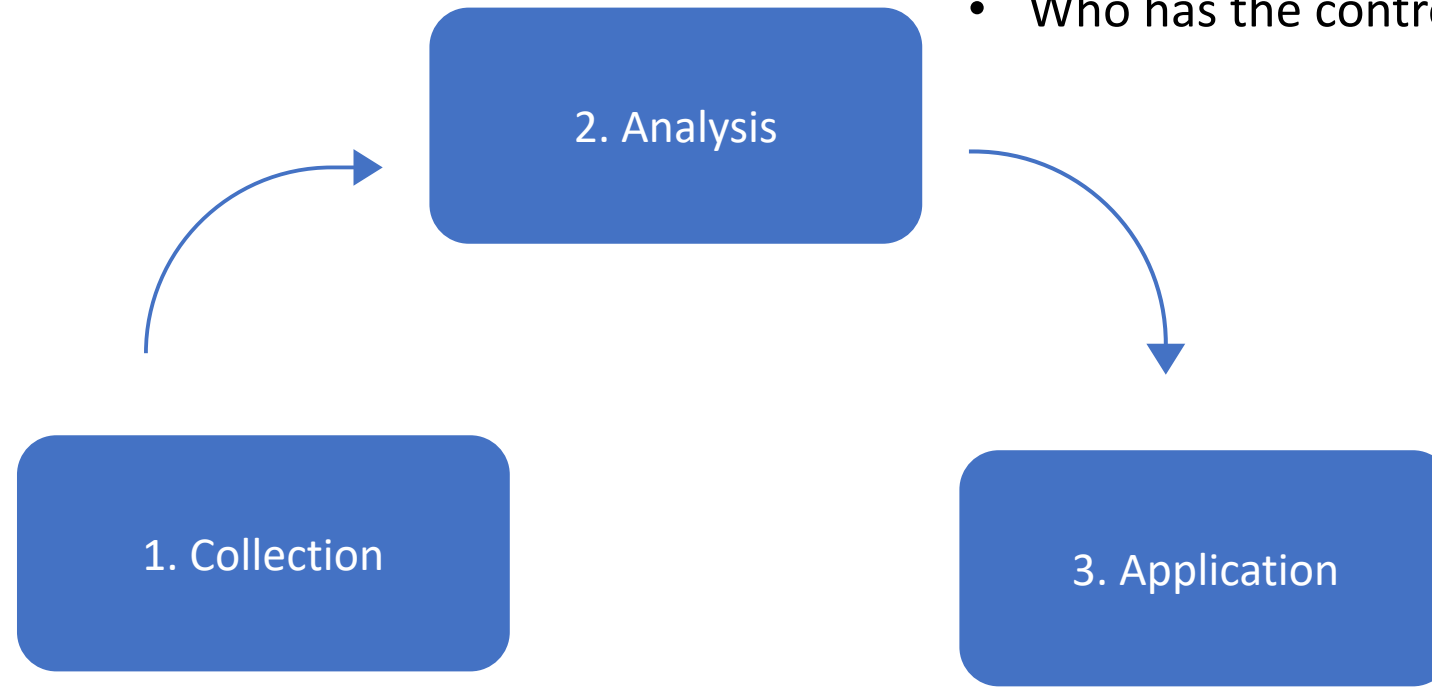
**Technology
about us**





Cybernetic Feedback Loop

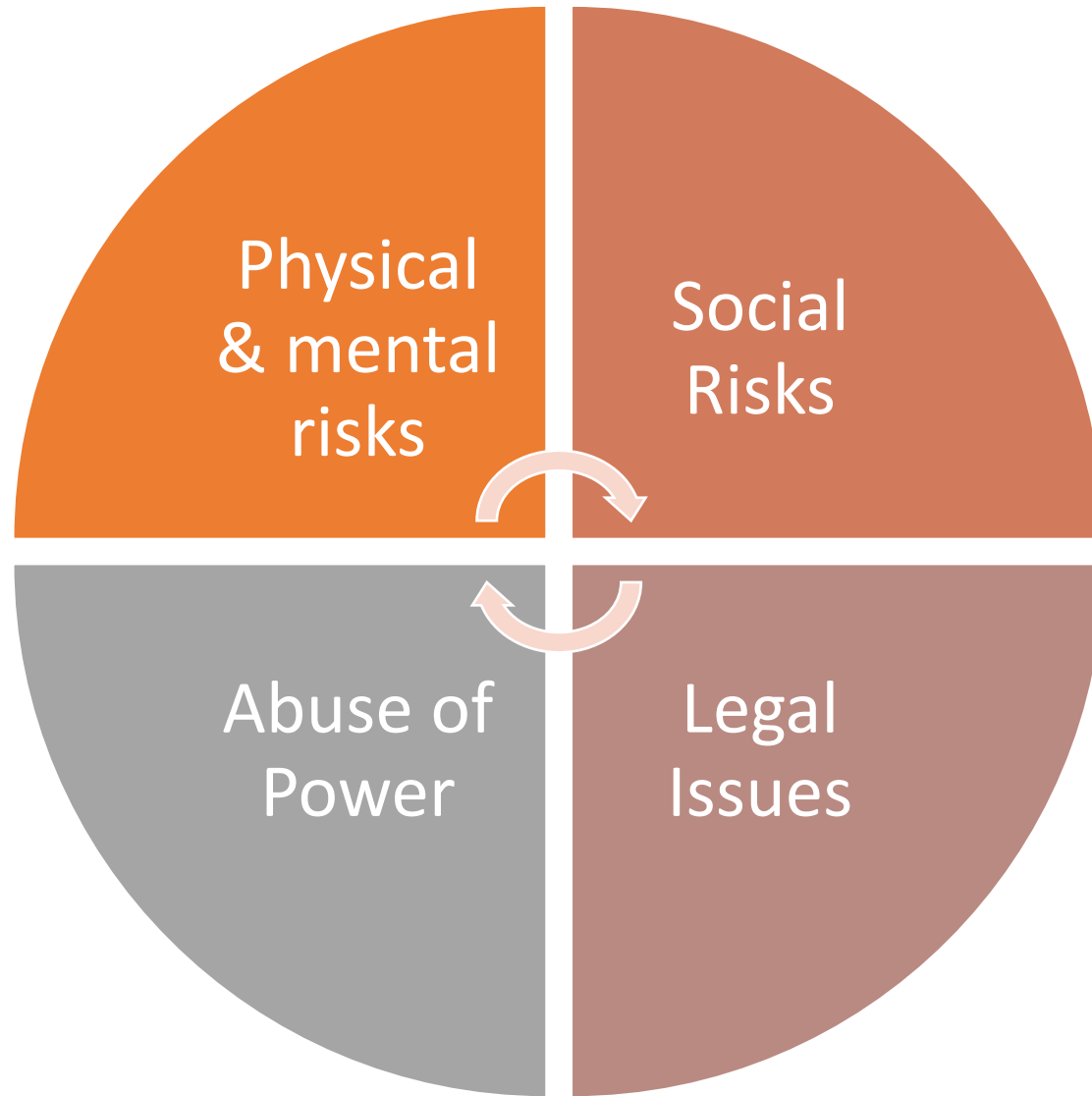
1. COLLECTING DATA
2. ANALYSE DATA
3. APPLY DATA



- Who is collecting data?
- Which data is essential?
- Who has control/access to the data?
- What is the quality of the data?
- Are there limits to data collection?

- Who is analysing the data?
- What is the quality of the analysis?
- Is the analysis transparent and explainable?
- Who has the control of the analysis?

- Who is responsible for the application?
- How can we guarantee public values, security. Transparency, and an open and competitive data economy?



- Addiction
- Emotional involvement
- Overstimulation
- Blurred boundaries
- Alienation
- Identity issues

Physical
& mental
risks

- Public disorder
 - Harassment
- Discrimination
 - Distrust
- Security hacks

Social
Risks

- Manipulation
- Deception
- Lack of consent
- Disregard of public values

Abuse of
Power

- Privacy
- Virtual ownership
- Consumer protection
 - Autonomy
- Responsibility

Legal
Issues

Preliminary observations

- Increasing use of AR-technology in society
- Consumer protection measures by industry, but limited
- Literature flags many societal issues/risks
- Lack of public debate about these
- Lack of political debate

Urgent Upgrade

Protect public values
in our digitized society



Report

Theme	Issues
Privacy ✓	Data protection, privacy, spatial privacy, mental privacy, surveillance, function creep
Autonomy ✓	Freedom of choice, freedom of expression, manipulation, paternalism
Safety and security	Information security, identity fraud, physical safety
Control technology	Control and transparency of algorithms, responsibility, accountability, unpredictability
Human dignity	Dehumanization, instrumentalization, deskilling, descocialization, unemployment
Equity and equality	Discrimination, exclusion, equal treatment, unfair bias, stigmatization
Balance of power	Unfair competition, exploitation, shifting relations between consumers and businesses, and between government and businesses.

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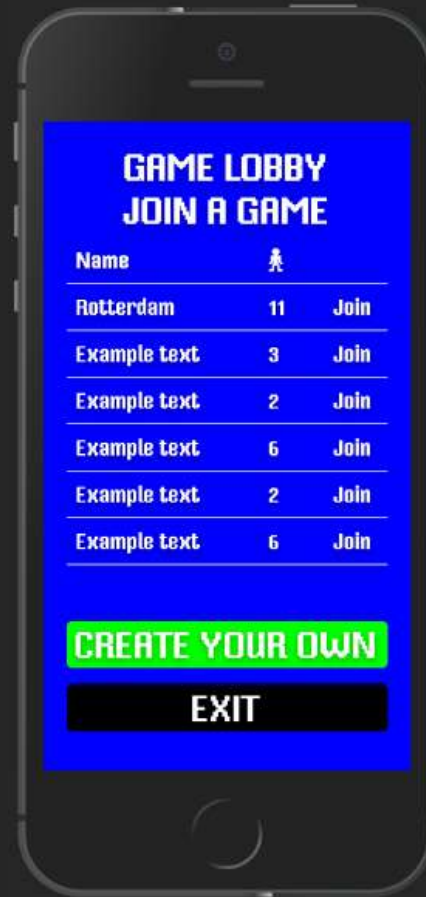
Dhoya Snijders

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Thank you for your attention.

Let's open up the debate!

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Publications on smart society www.rathenau.nl

