A BRIEF HISTORY OF HUMANS AND TECHNOLOGY

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Why this sudden eruption of technological diversity?

- Innovative phases in Middle Stone Age technology at Still Bay and Howieson’s Poort (app. 71-72 000 and 60-65 000 years ago) linked to formation of social networks in expanding populations (Jacobs & Roberts, 2009)

- Increasing population size → accumulation of skills in Late Stone Age Europe and sub-Saharan Africa (Powell et al., 2009)

- Higher population density facilitates communication and exchange, specialisation, ... , and, thus, technological change (Klasen & Nestmann, 2006)
HUMANS & TECHNOLOGY – PREHISTORY

• In Oceania, islands with small populations had less complicated marine foraging technology
  • “genetic drift” – loss by chance
  • Imperfect social learning
  • Smaller pool of experts (Kline & Boyd, 2010)

Ergo, technology requires a strong social context
HUMANS & TECHNOLOGY – PREHISTORY

Additionally, technology shapes society

E.g., agriculture

- From Fertile Crescent (11,000 ya) to the rest of the Old World
- Spreading of the idea rather than displacement of people (Sykes, 2001)
- 1 hunter-gatherer requires resources of 10 km² → agriculture increases resources by a factor of 50
Peopling of the Pacific depended on technology

- 50,000 – 30,000 ya Melanesia was populated
- Rapid expansion about 1500 ya to Polynesia → navigation technology
HUMANS & TECHNOLOGY - MORE RECENTLY

Technology influences us, and we influence (the effects of) technology

- Printing press
  - Spreading of ideas
  - Boost to capacity for empathy
  - Reduction in violence (Pinker, 2011)

- Mobile phones
  - Safer events: social media to monitor, or communicate with crowds
  - Safer society: Amber Alert, NL-Alert
  - Detrimental effects on social life?

- Rebound effect
  - Energy-efficient lighting → Lights burn longer
  - Economical car → More kilometers
HUMANS & TECHNOLOGY

- Invention of the wheel → automotive technology → mobility patterns
  - We can commute and have greater freedom in choosing a place to live
  - Explore the world after retirement
HUMANS & TECHNOLOGY @ EINDHOVEN (THE ROARING NINETIES AND BEYOND)

The study of human-technology interaction from a psychological perspective

- Acting and non-acting habits (with Henk Aarts and Cees)
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- Trust in systems (with Cees, Don Bouwhuis, Anneloes Meijnders, and Stéphanie van den Berg)
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- Interactive Eco-feedback (with Teddy McCalley and Cees)
- Persuasive Technology (although the term had yet to be coined)
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- Stimulating environment and *esprit de corps*
- However, pressure from above (university) and within (faculty) to integrate technology
- Human-technology interaction has come to fruition since then
- Position within university firmer than ever
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• E.g., Persuasive Technology
  • Eindhoven-Stanford collaboration
  • 10th international conference last June in Chicago
  • 12th will be in Twente/Amsterdam
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- Serious game “EnerCities”; evaluation
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- Detecting leaders and followers (with Raymond Veldhuis)
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• Communication, technology, and event safety (with Mirjam Galetzka and Jan Gutteling)
  • Mobile technology may affects persuasiveness of communication by event organisers
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- Effects of CCTV cameras on perceived safety (with Thomas van Rompay)
  - Positive effect on safety and interpretation of ambiguous stimuli
  - Camera presence (vs. absence) makes safe neighbourhoods more safe, and unsafe ones more unsafe
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• Similar pressure and naïve ideas to “integrate” technological component from the board → reactance
• Wind of change: “High tech human touch”
• Tech4People program
  • Stimulate cross-disciplinary research and collaboration
  • Technology to complement or replace more conventional methods
  • Sociometric badges, GPS trackers, Tobii Glasses 2 (eye tracking), Oculus Rift (VR), …
As we can learn from palaeontology…

- Increasing social networks and research populations may well lead to proliferation of innovative ideas (cf. Jacobs & Roberts, 2009)
  - Accumulation of skills (cf. Powell et al., 2009)

So… let’s work together! For human-technology interaction in The Netherlands the social context has never been better
Here’s to you, Cees!

Many happy camper-based explorations!