

Media Transformation

Vorlesung

WiSe 2020–21

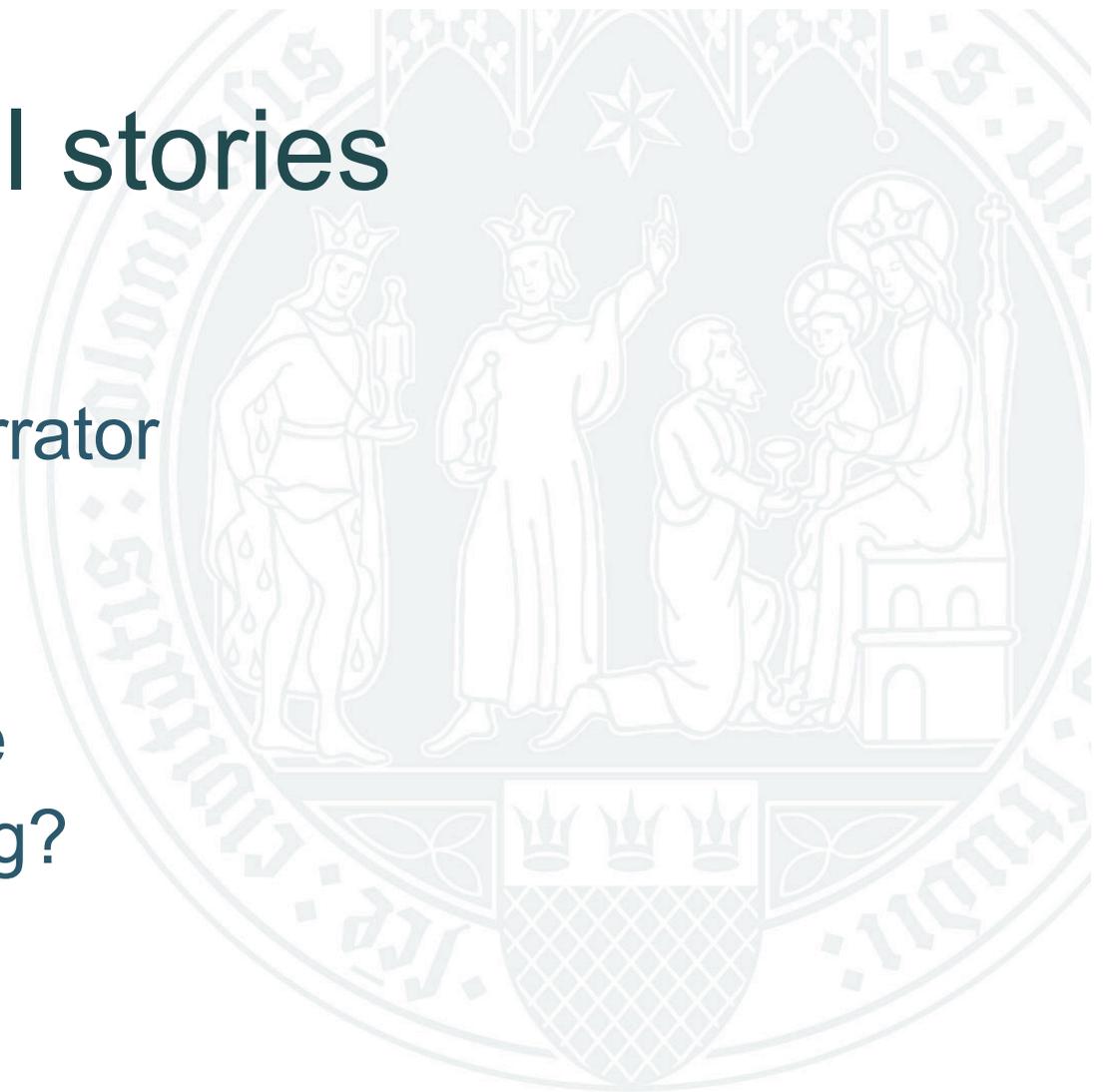
Øyvind Eide

Woche 4



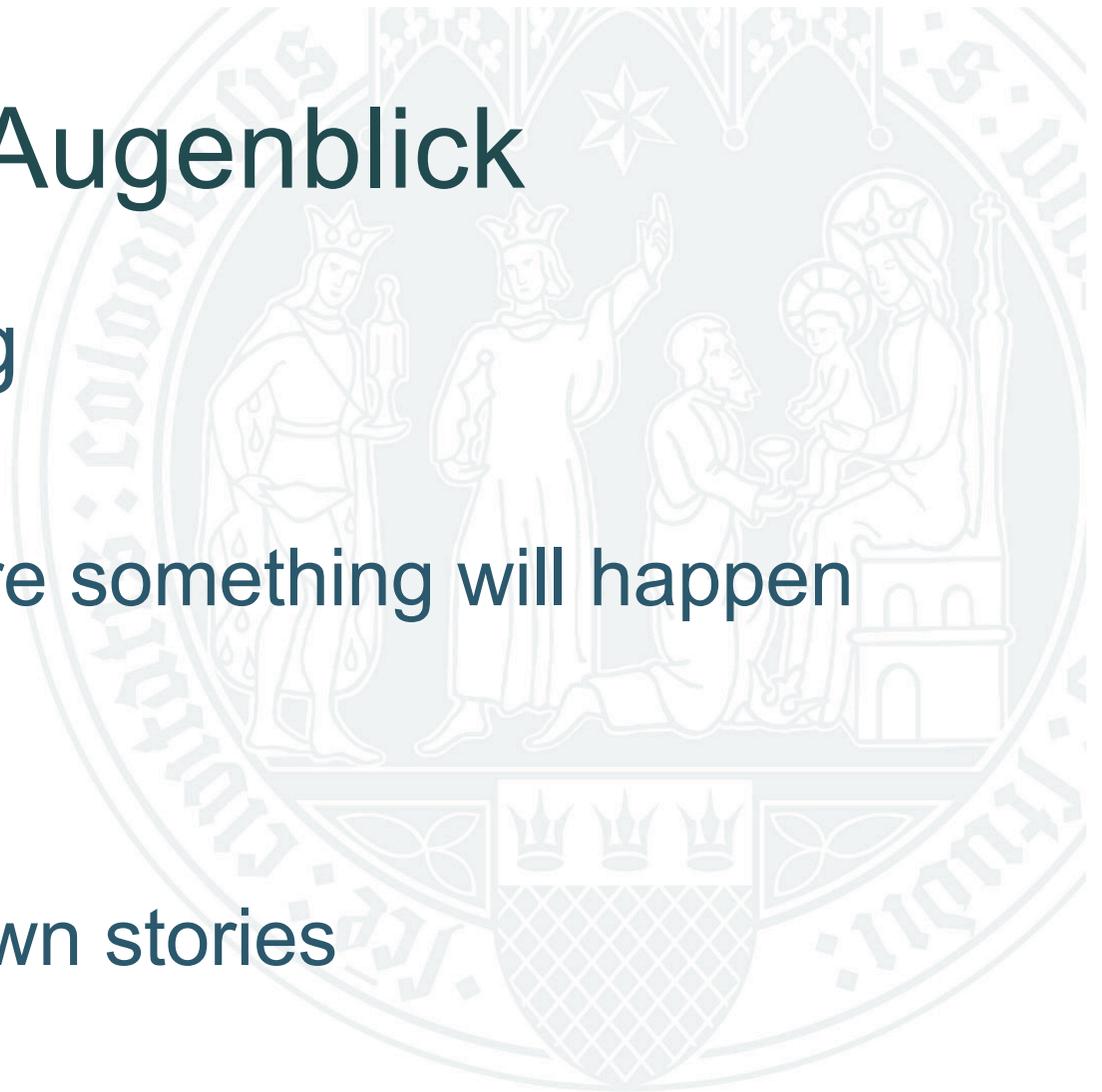
Written and oral stories

- Interaction
 - shouting at the narrator
 - book reviews
- Stability
 - expressions stable
 - stability of meaning?
- Form and memory
 - the art of memory
 - poetic form as a memory system



Der fruchtbare Augenblick

- Stories in painting
 - the untold story
 - the moment where something will happen
- Iconography
 - identification
 - reminders of known stories
- Comics
 - the gospels told to a non-reading audience



Baseball

“Tuesday was a great day for W Roberts, as the junior pitcher threw a perfect game to carry Virginia to a 2-0 victory over George Washington at Davenport Field.

“Twenty-seven Colonials came to the plate and the Virginia pitcher vanquished them all, pitching a perfect game. He struck out 10 batters while recording his momentous feat.

“Tom Gately came up short on the rubber for the Colonials, recording a loss. He went three innings, walked two, struck out one and allowed two runs. The Cavaliers went up for good in the fourth, scoring two runs on a fielder’s choice and a balk.”



Computer generated stories

- Based on baseball game statistics
- Natural language generation
 - data-to-text systems
- Company: Narrative science
 - teaching machines how to write journalism
 - limited to basic sports reports and business news
 - humanising the machine
 - *from* looking at data
 - *to* telling stories

<https://www.theguardian.com/technology/2015/jun/28/computer-writing-journalism-artificial-intelligence>



Stock market

“Apple Inc (AAPL) on Tuesday reported fiscal first-quarter net income of \$18.02bn.

“The Cupertino, California-based company said it had profit of \$3.06 per share.

“The results surpassed Wall Street expectations. The maker of iPhones, iPads and other products posted revenue of \$74.6bn in the period, also exceeding Street forecasts. Analysts expected \$67.38bn...”

Company: Automated Insights



Good enough?

- Blind study by Christer Clerwall
 - how sports reports written by computers and by humans compared
- Reports written by humans slightly more accessible and enjoyable
- Reports written by computer a little more informative and trustworthy

Clerwall, C. (2014)

Enter the Robot Journalist: Users' perceptions of automated content. Journalism Practice



Targeted news

- Company
 - how does a storm impact your business?
- Individuals
 - do you have relatives in the area?
- Even more personalised news
 - consequences?
- From big to small to personal stories
 - the death of serendipity
 - from postmodernism to the personalised world?



Data analysis

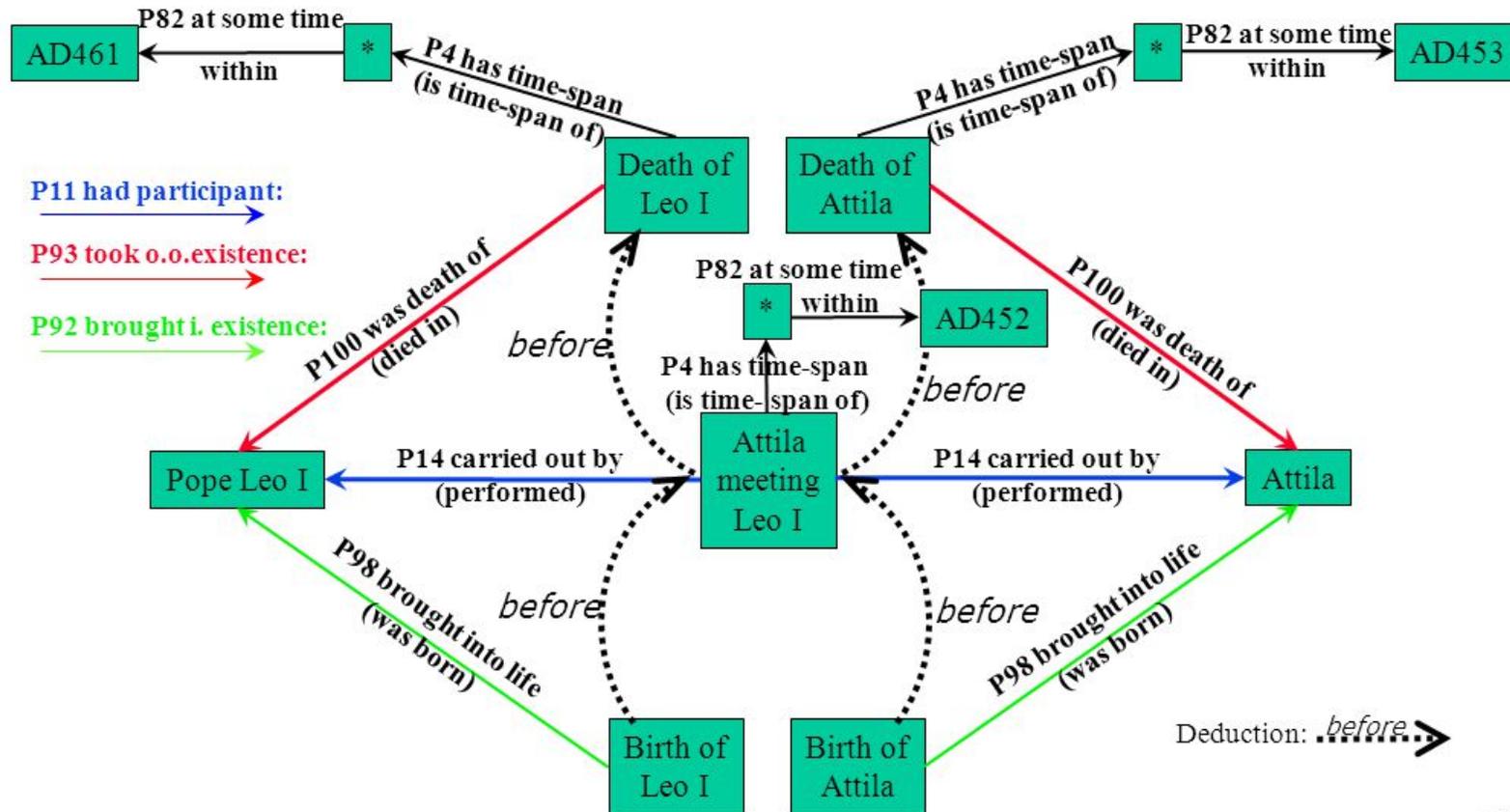


- How to cope?
 - extracting the important story from the data

<http://darkroom.baltimoresun.com/2014/03/three-mile-island-nuclear-disaster-pennsylvania/>

The CIDOC CRM

Termini postquem / antequem



23

Database based stories in cultural history

Which stories can we tell based on this CIDOC-CRM model?

Intimacy with machines

```
(defparameter *eliza-rules*  
'((((?* ?x) hello (*? ?y))  
  (How do you do. Please state your problem.))  
  (((?* ?x) I want (*? ?y))  
    (What would it mean if you got ?y)  
    (Why do you want ?y) (Suppose you got ?y soon))  
  (((?* ?x) if (*? ?y))  
    (Do you really think its likely that ?y) (Do you wish that ?y)  
    (What do you think about ?y) (Really-- if ?y))  
  (((?* ?x) no (*? ?y))  
    (Why not?) (You are being a bit negative)  
    (Are you saying "NO" just to be negative?))  
  (((?* ?x) I was (*? ?y))  
    (Were you really?) (Perhaps I already knew you were ?y)  
    (Why do you tell me you were ?y now?))  
  (((?* ?x) I feel (*? ?y))  
    (Do you often feel ?y ?))  
  (((?* ?x) I felt (*? ?y))  
    (What other feelings do you have?))))
```

Computer generated stories: How?

- What people want to communicate
 - thus human agenda driven
 - *answering* questions
 - Eliza using external data sets
- Analyse data
 - “mining data for meaning and insight”
- Deliver analysis in natural language



Natural language generation

- Translating
 - *from* computer based representations
 - *into* natural language representations
- Either explicit models (grammars)...
- ...or statistical models of human text
 - as in NLP in general



Natural language generation

1. Content determination
2. Document structuring
3. Aggregation
4. Lexical choice
5. Referring expression generation
6. Realisation

Further reading (example): Dale, Robert; Reiter, Ehud (2000). *Building natural language generation systems*. Cambridge.



Publish or perish

- Need more text produces
- Less time to produce it
- Solution
 - domain-independent creative writing tool
 - when quality is not essential
 - based on large content collections
- Machine learning
 - topic analysis of content



Creative writing assistance

- Domain dependent template
 - built automatically
 - event description, biography, political news, ...
 - can include dialogue/argumentative structure
- Epistemic structure
 - extracted from texts in domain



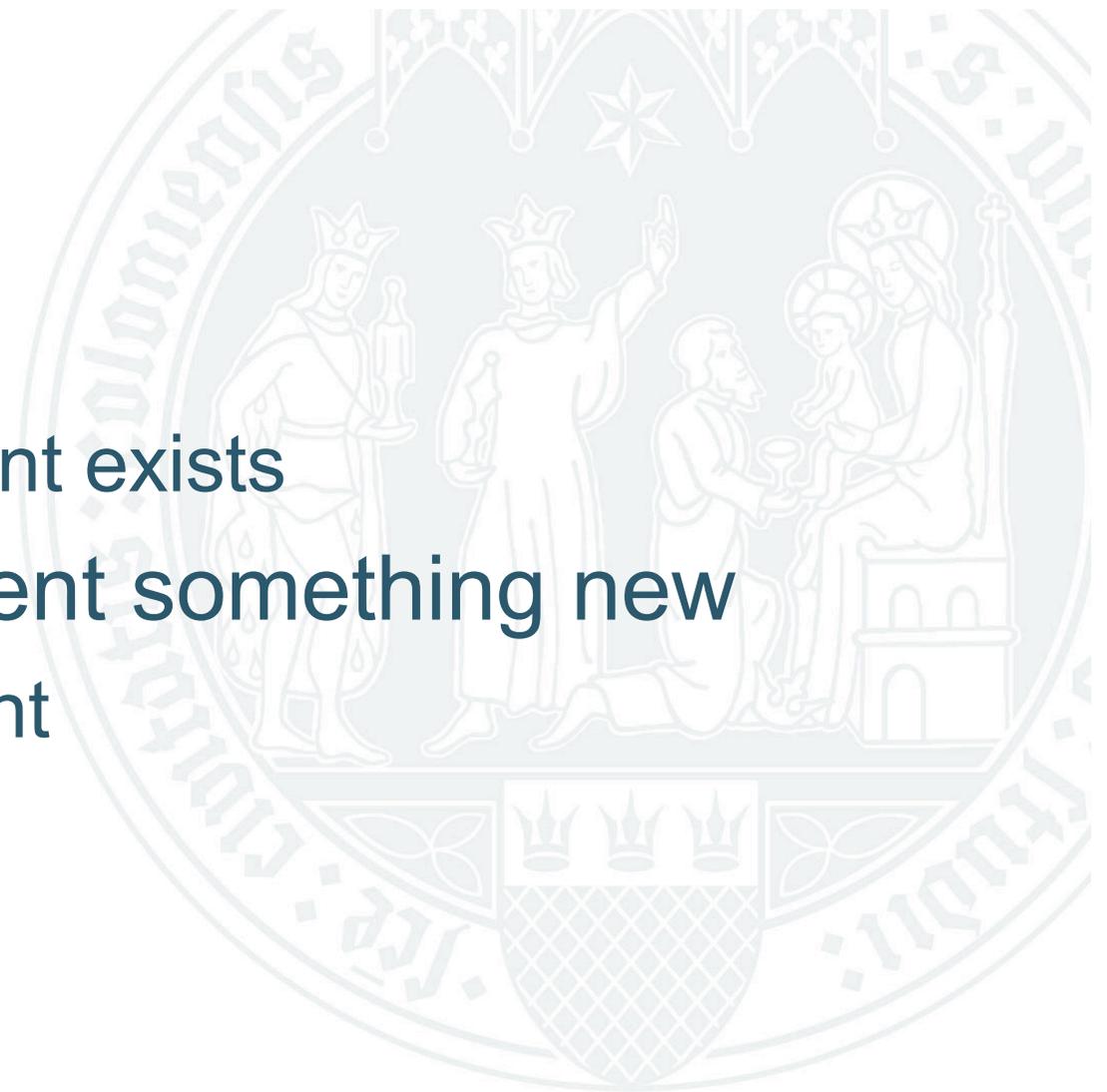
Creative writing

- Search the web
 - tool
- Find pieces
 - tool
- Merge them
 - tool, human do final acceptance/rejection
- Final text polishing
 - human



The process

- For any idea
 - a similar document exists
- Cannot really invent something new
 - find that document
 - substitute
- Starting point
 - seed sentences
 - basis for construction of search



Questions

- Who will read all this text?
 - computers?
 - algorithms analysing it to make new texts
- What is it to tell a story
 - to express oneself?
 - to produce a number of words?



So what is this really?

- Analysis of data...
- ...presented not as a graph...
- ...but as a text
- Stories as a visualisation tool
 - from image to text—as—visualisation
 - (impression of) objectivity?
- So who is the winner?
- Poetry or painting?
 - that is, the textual or the graphical?



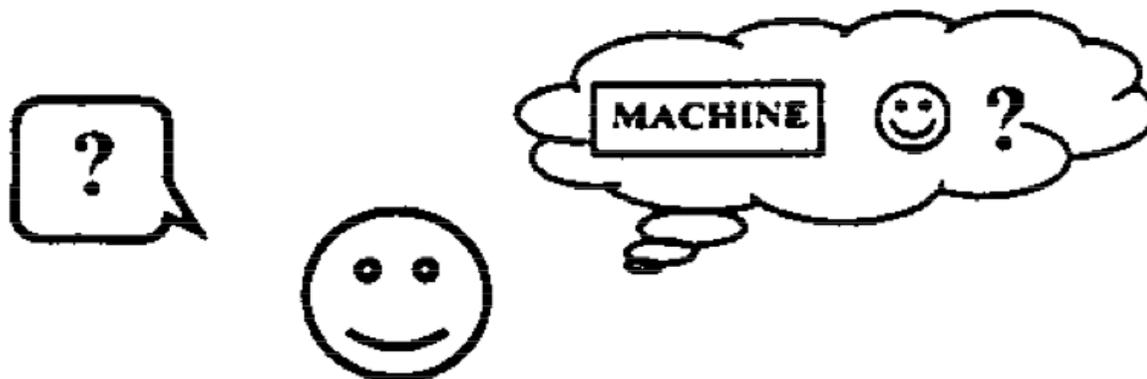
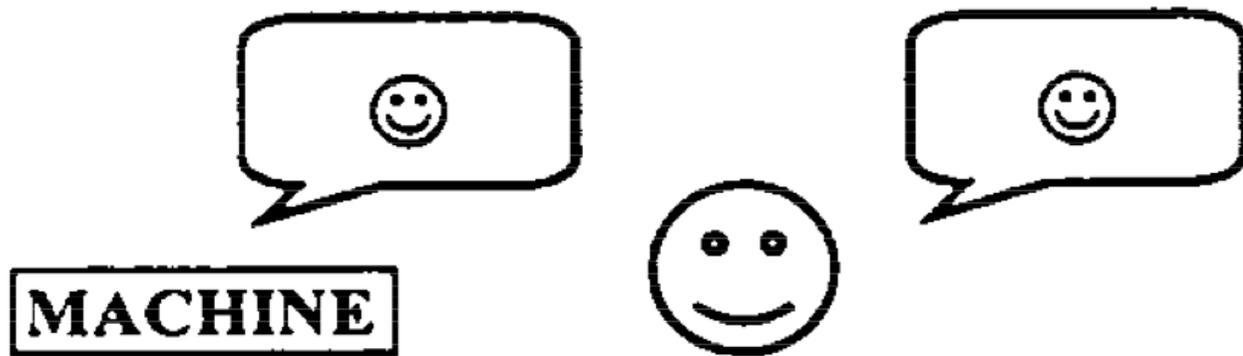
Interactivity

- The quality or condition of interaction
- Can be higher or lower
- Human to human interactivity
 - communication between people
- Human to computer interactivity
 - the artefact does not desire communication
 - interactive behaviour experienced by human



The Turing test

- Alan Turing, 1950
- Testing the machine's ability to show intelligence



Saygin, A. P.; Cicekli, I.; Akman, V. (2000), "Turing Test: 50 Years Later" (PDF), *Minds and Machines*, 10 (4): 463–518

Dialogism

- Dialogue between people talking
- Dialogue with historical sources
- Dialogue with natural environment
- Text and text interpreter
- Bakhtin: literary texts are dialogical
 - intertextuality
- Forming thoughts through dialogue
 - learn what we know by saying it



Affordances

- Based on the verb “to afford” (Gibson)
- Complementarity animal—environment
- Relative to the animal
 - surface of the lake for a flea and for a dog
- Intention irrelevant
 - a tree is shelter against the rain
 - this is not the purpose or intention of the tree



In dialogue with our surroundings

- Using affordances
 - natural
 - language: potentials in concrete utterances (Linell)
- The language is part of the dialogue
- Context of interaction
- Interaction at many levels
 - with each others
 - with tools
 - with landscape...



Grounding problem

- General Problem Solver (1957)
 - could solve all problems... when they were formalised
 - symbol based solutions
- How can AI systems be connected to the world?
 - complexity of representation
- How do humans connect to the world?
 - no representation (ecological understanding)
- *Can one connect formal symbol systems to an external reality?*



Interhuman communication

- Talking to each other
- Happens in context
- Significant shared background
 - common affordances
- Face to face
 - sound, sight, smell, touch, ...
- Mediated
 - narrower in varying degree



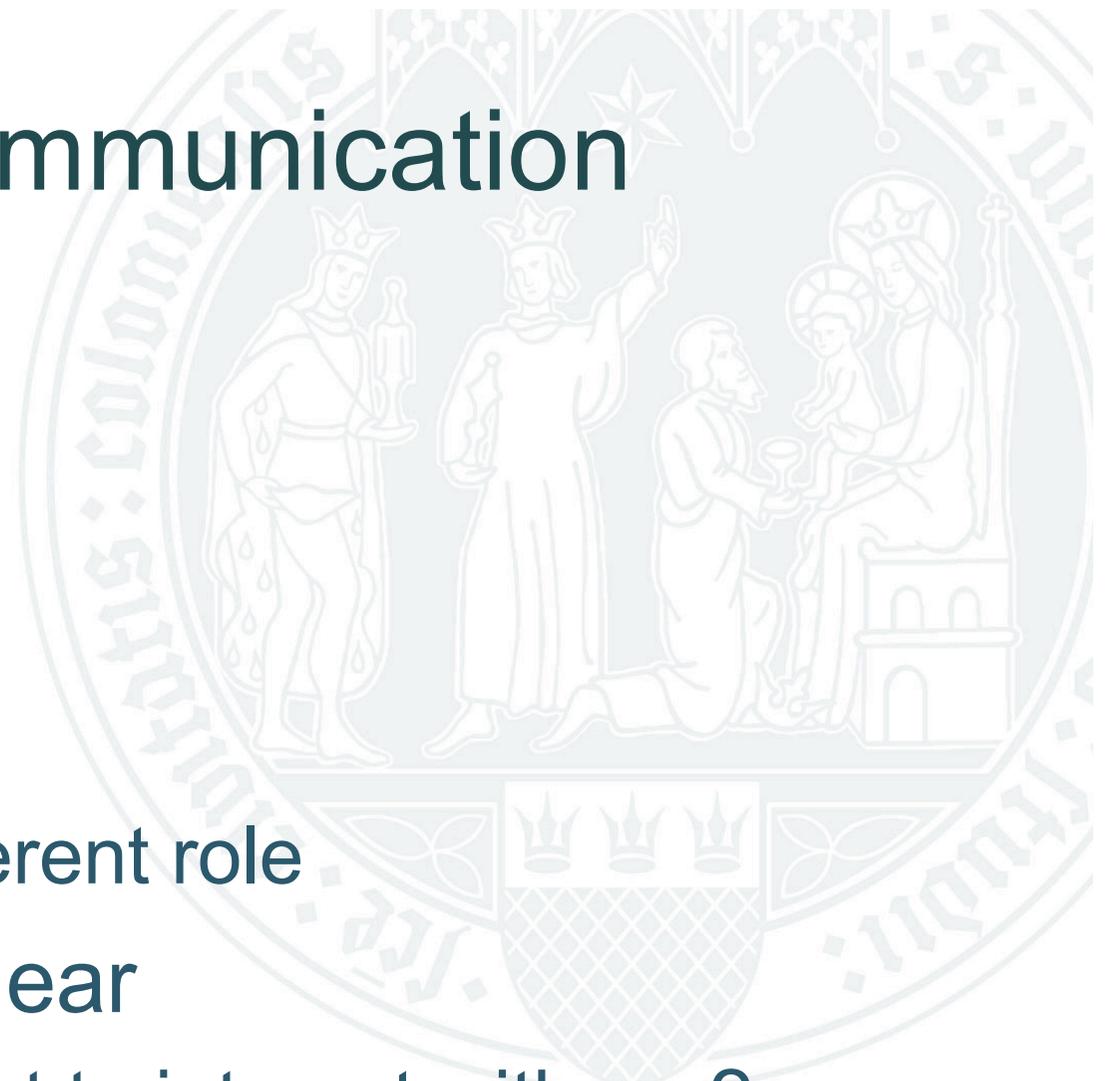
Intercultural communication

- Less common affordances
 - language differences
 - cultural differences
- Emotional differences
 - culture and the individual
- Common languages
 - football
 - laughter
 - rituals
- Communication always possible
 - but can be hard



Interspecies communication

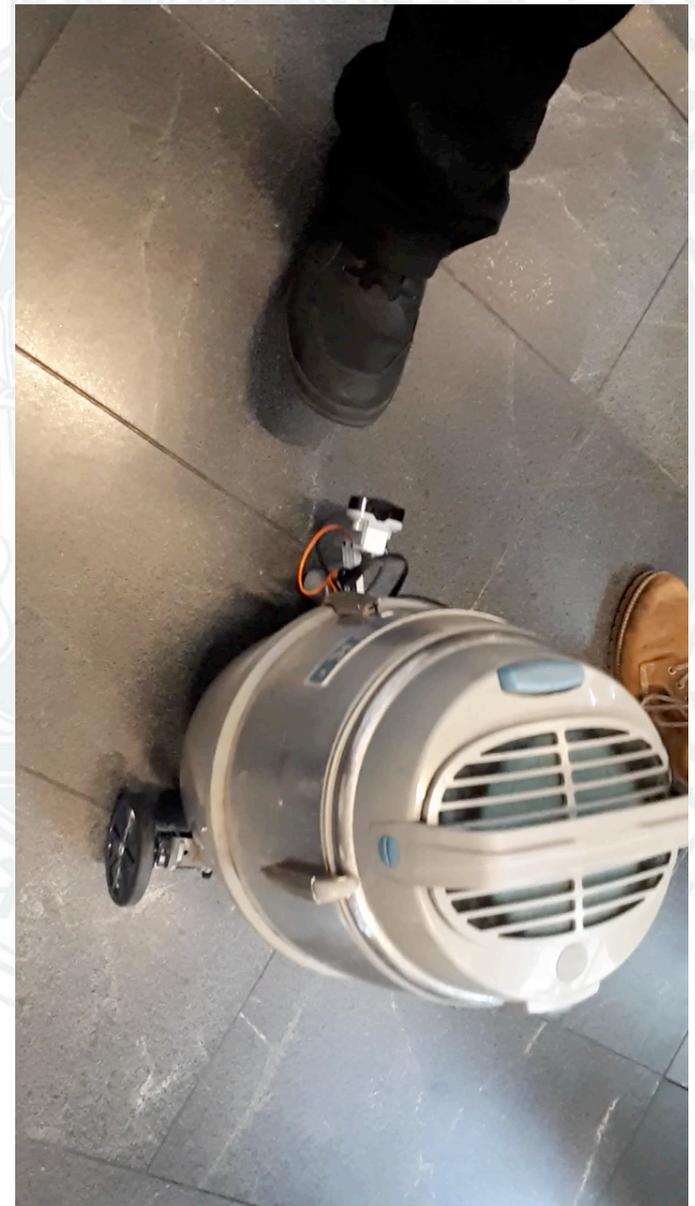
- Human to animal
- Animal to animal
- Animal to plant
- Less symbolic
 - words play a different role
- Intentionality unclear
 - does the dog want to interact with me?
 - the tree?



Robots

- Robots move in the world
 - do not need representations
- Interaction based algorithms
 - robots in the physical world
 - can use affordances
- Robots in interaction with the environment
- The foundation problem is bypassed

Christiansen, H., Hoby, M., & Lindelof, A. M. (2019). „Robot Gestalts in Staged Performances: Poster abstract.” Poster session præsenteret på 4th Digital Humanities in the Nordic Countries, Copenhagen, Danmark.



Tools and animism

- Beyond (behind) AI/robots: „simple” tools
- Auto-movement and animism

“**These technical distinctions are fully understood** by Nuaulu who have wondrous ways of **fixing malfunctioning engines**. But the combined features that give them quasi-autonomy also give them the vitality that is more than the combination of their parts, and which crosses a boundary that **places them with other biological and quasi-biological entities**. Humanly operated machines may have agency, but **engines act ‘intentionally’**. When Basil Fawlty is thrashing the car he is exacting revenge on an entity that has ‘stalled just once too often’. It has willfully disobeyed its owner and driver. We laugh because we recognize that all of us, while **fully accepting the technical reasons for mechanical failure, insist on treating the vehicle as if it were a sentient person who is deliberately contrary.**”

Ellen, R. (2016) „Tools, agency and the category of ‘living things’” in Des êtres vivants et des artefacts, Paris („Les actes”).



Animals and tools

- Interaction
 - animal—tool?
 - animal—human?
- Usability
 - for animals
 - for humans
- Intention
 - in humans
 - in animals
 - in the tool?



Communication with the dead

- Religion/mythology
- Literature
 - “Sapho speaks to me”
 - (but do I reply?)
 - model reader → author instance in text
- Talking to fictional persons
- Art
 - falling in love with a painting – or the motive?
- Virtual reality
 - talking to historical persons?



Cyberspace

- „The matrix has its roots in primitive arcade games [...] in early graphics programs and military experimentation with cranial jacks. [...] Cyberspace. A consensual hallucination experienced daily by billions of legitimate operators, in every nation, by children being taught mathematical concepts . . . A graphic representation of data abstracted from the banks of every computer in the human system. Unthinkable complexity. Lines of light ranged in the nonspace of the mind, clusters and constellations of data. Like city lights, receding. . .“
- „She was quite a visionary. She imagined us in a symbiotic relationship with the AI's, our corporate decisions made for us. Our conscious decisions, I should say. Tessier–Ashpool would be immortal, a hive, each of us units of a larger entity.”
- „Wintermute was hive mind, decision maker, effecting change in the world outside. Neuromancer was personality. Neuromancer was immortality. Marie-France must have built something into Wintermute, the compulsion that had driven the thing to free itself, to unite with Neuromancer.”

Gibson, W. (1984). *Neuromancer*. New York, Ace Books.



Swarm intelligence and symbiosis

- Bees
- Micro-organisms in human bodies
 - especially in the digestion system
- Human-horse
 - work
 - control
 - communication
- Human-reindeer
 - pastoralism
 - detailed control
 - general direction
- Ants – aphids
 - communication
 - control
- Intentionality



https://influentialpoints.com/Gallery/Aphis_viburni_viburnum_aphid.htm