

An aerial photograph of a coastal region, likely in the Baltic Sea area, showing a complex coastline with numerous islands and peninsulas. The water is a light blue-grey color, and the land is a mix of brown and grey tones. A grid of thin black lines is overlaid on the image, suggesting a coordinate system or a map projection. The text is overlaid on the lower right portion of the image.

PANEL INTRODUCTION  
AKRR'08

Timo Honkela  
Helsinki University of Technology

# Cognitive architectures for multimodal multilinguality

AKRR08



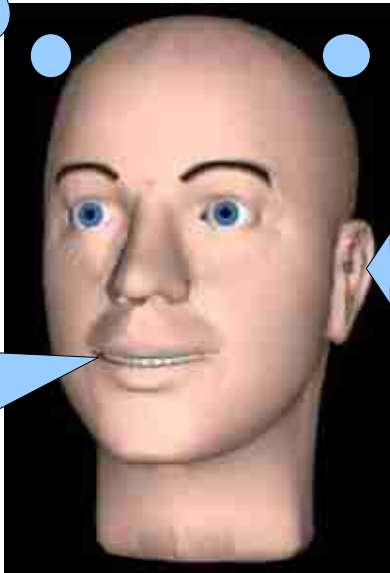
- Applications in machine translation and information retrieval/search
- Methodology based on cognitive systems and adaptive systems (statistical machine learning) research



# A tentative objective: high proficiency of spoken and written languages in **context**...



Czech Republic is one of the few inland countries whose borders can be seen from satellite photographs.



<http://www.lce.hut.fi/publications/annual2002/node18.html>

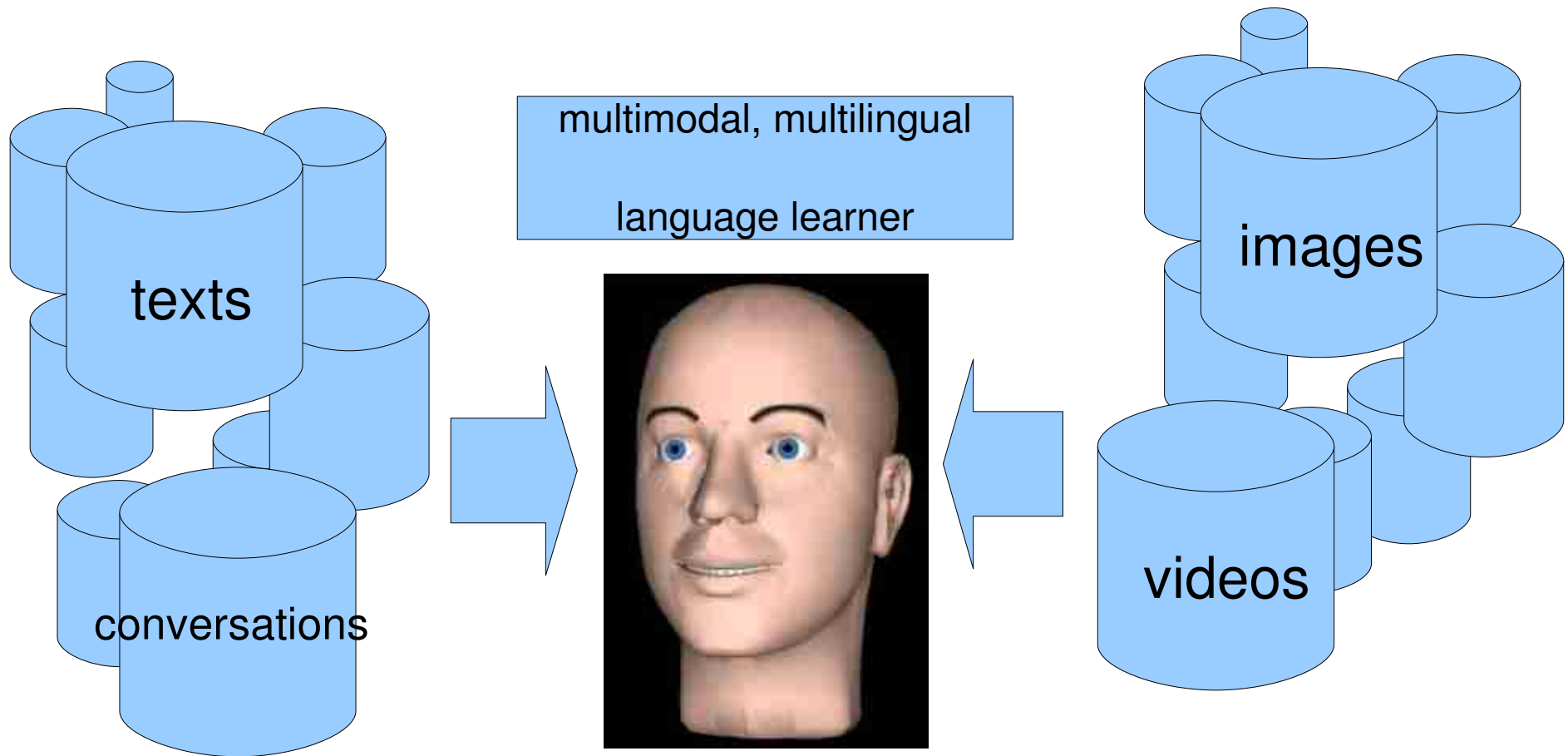


Česká republika je jedním z mála vnitrozemských států, jehož obrysy lze rozeznat na satelitních snímcích.

[http://www.czech.cz/vite\\_ze/](http://www.czech.cz/vite_ze/)

... learned using vast data collections  
and rich contexts

AKRR08



# Desired properties

AKRR08

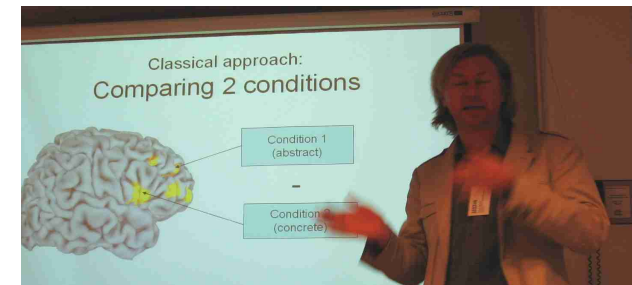
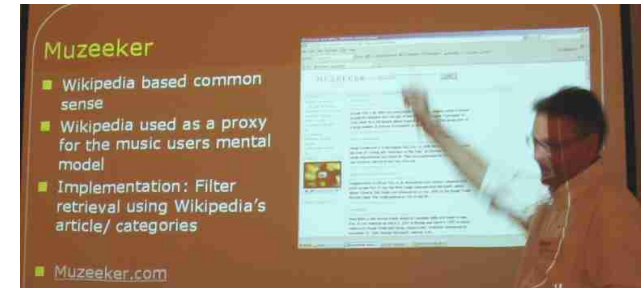


- Representation of world knowledge
  - symbol grounding
  - multimodality (and its relation to translation)
- Learning from mistakes
- Support for communication

# Resources / methods

AKRR08

- Broader use of freely accessible content
  - e.g. monolingual corpora
- Various kinds of semantic networks and treebanks as data (not as “ground truth”)
- Use of crowd sourcing
  - image labeling – availability of current resources?
  - translations
  - feedback
- Contribution of brain research?
  - empirical data



# Background questions

AKRR08

- “Human behavior project” (cf. Hansen)
- Nature of representation?  
Representation versus process?
- Relationship between language understanding and language learning
- What kind of cognitive architecture?

# Organizing ourselves

AKRR08



- Collaboration between EU projects and national projects
- Network of Excellence in Adaptive Language Technology