

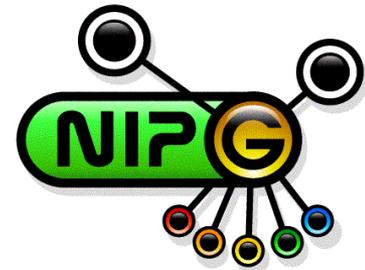
Faculty of Informatics

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# The Achilles point of general AI: The *symbol learning* problem



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# Artificial General Intelligence

- GOFAI:
  - There are symbols
  - we **just** have to ground them
  - symbol grounding problem

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# From Compressive Sampling to the ‘Symbol Learning Problem’

Lőrincz 2009

A different view

## Constraints

- from neuro
- from math

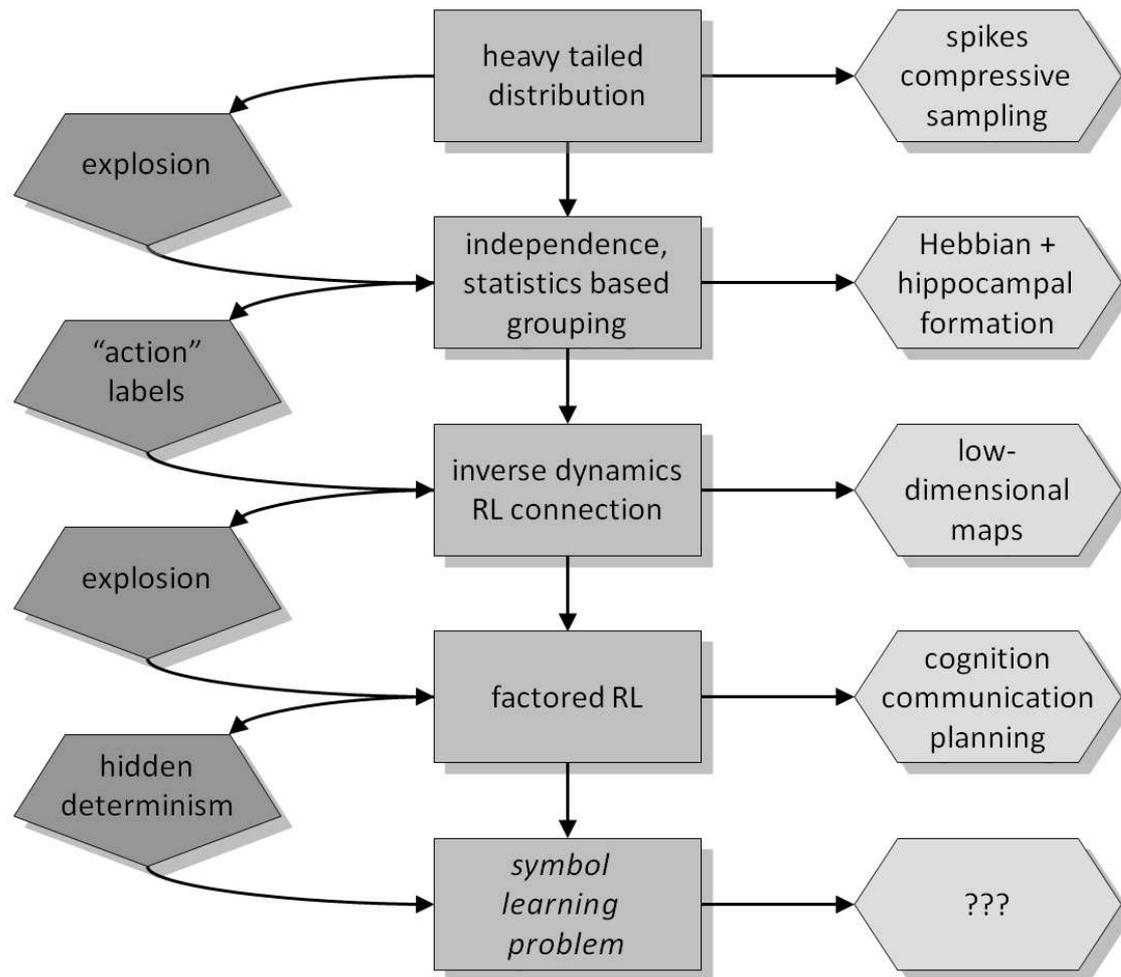
# From Compressive Sampling to the 'Symbol Learning Problem'

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# Artificial General Intelligence

- GOFAI:
  - There are symbols
  - we **just** have to ground them
  - symbol grounding problem – exponentially hard
- Conjecture for AGI:  
symbol learning = graph partitioning

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- **Recent mathematical advances claim**
  - even for extreme graphs
  - symbol learning should be possible in polynomial time

# Symbol learning

Recent mathematical advances claim

- even for extreme graphs
- symbol learning should be possible in polynomial time

AGI (even) for extreme graphs:

- **Symbol learning** → separation of structure and noise
- Separation of structure and noise in extreme graphs  
→ Terrence Tao

# References

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*Contributions to Discrete Mathematics, 1: 8-28, (2006)*

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*Thanks for your attention*



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