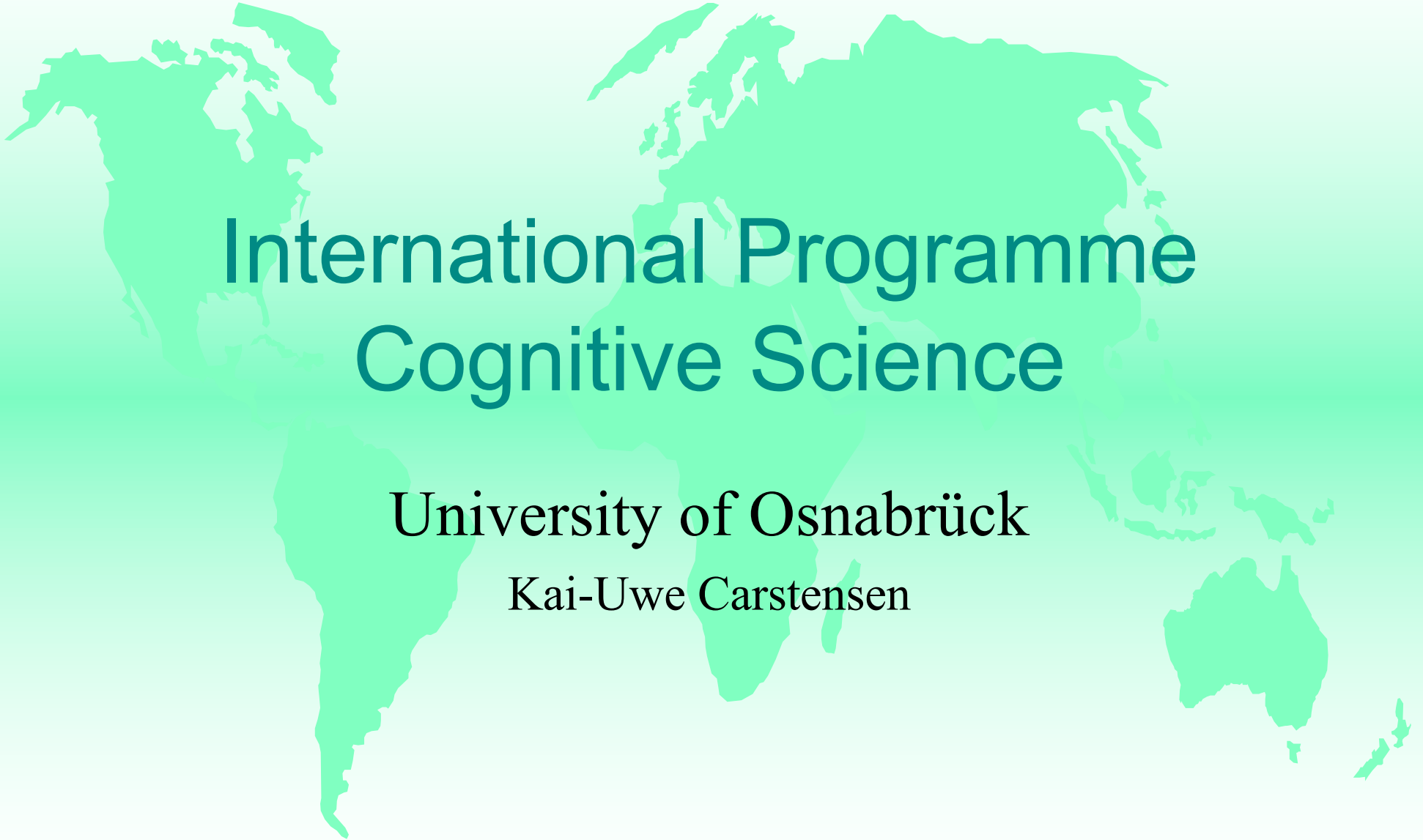
International Programme Cognitive Science

University of Osnabrück



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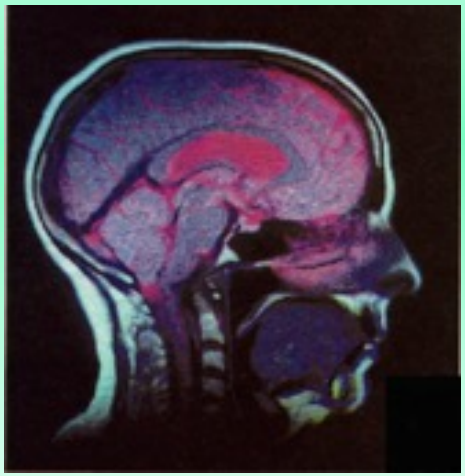
What is Cognitive Science?

- The science of **cognition**
  - how we perceive
  - how we learn, think and reason
  - how we (plan to) speak, act etc.

↳ of what is involved in
mapping sensory input to motor output

☛ that is, of what the **brain** does
(but of course not all of it)

What is Cognitive Science?



- The study of
  - the **brain** (neuroanatomy)
  - neurons (neurobiology)
  - ⍰ structure and function!

in order to find out

how the brain does what it does

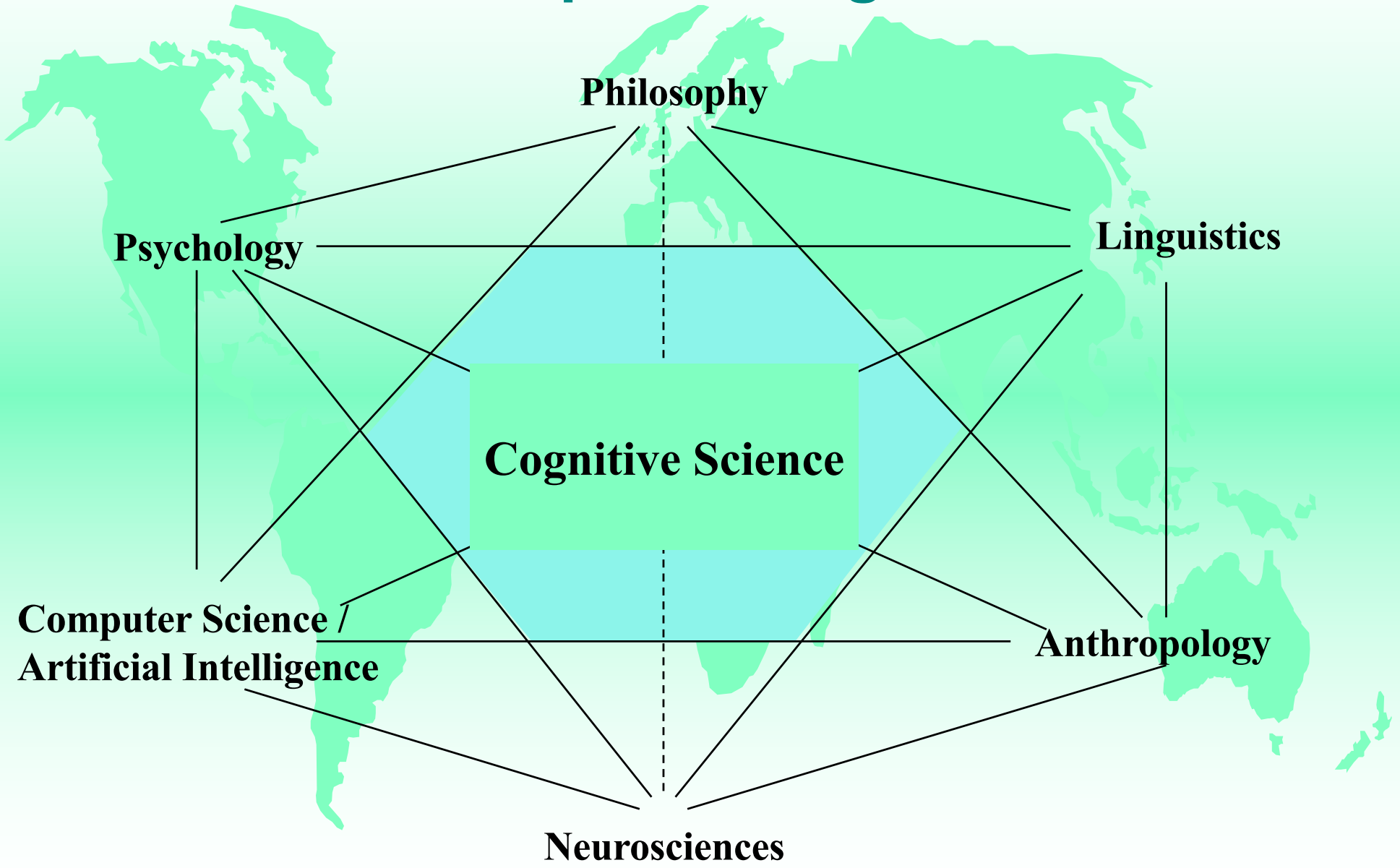
What is Cognitive Science?

- The study of the "wheels of the mind"
  - "what the brain does" is viewed as **computation**
  - methods used:
    - empirical observation
    - theoretical explanation
    - formal modelling
    - simulation (i.e. implementation)

A short history of Cognitive Science

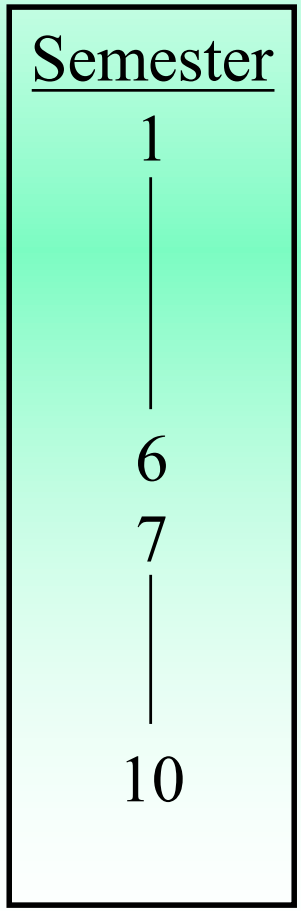
- **1956:** **important scientific meetings**
  people from different disciplines (psychology, computer science, linguistics) discuss a "cognitive" alternative to behaviorism based on symbolic computation
- **1977:** **Journal "Cognitive Science"**
  (in Germany: 1990)
- **1979:** **Cognitive Science Society**
  (in Germany: 1994)
- **1998:** **International Programme Cognitive Science at the University of Osnabrück**

The “Inter-discipline” Cognitive Science



Cognitive Science

- consists of
  - a **method**-oriented Bachelor-programme
    - Introductions and Foundations
    - Methods and Techniques
    - one semester studies abroad
  - a **topic**-oriented Master-programme
    - students' project
    - treatment of complex topics on different levels (theory, model, implementation)



Studying Cognitive Science

Example: Courses of the first semester

- Foundations of Cognitive Science
- Mind, Brain, and Computation: Aspects of Cognitive Science
- Introduction to Neurobiology
- Introduction to Linguistics
- Mathematics I
- Methods of programming (Algorithms)
- Foundations of Logic I
- Functional Programming (LISP)

Studying Cognitive Science in Osnabrück

Features of Osnabrück

- nicely located at the edge of the Teutoburger Wald (hilly region)
- close to the netherlands

Features of the University

- main part of campus in the centre of the historical city
- young university, ~12000 students

Features of the programme

- first (!) undergraduate programme Cognitive Science in Germany
- close cooperation with neighbouring universities, leading to high teaching quality
- unprecedented education in analytic, empirical, and constructive methods
- one-year students' projects

Special conditions on admission

- no restriction on applications in 1998 besides
  - application deadline: 15. July (no guarantee afterwards)
  - the known proof of proficiency in
    - German ("German as a foreign language", ZDaF-certificate) and
    - English (IELTS-certificate ("International English Language Testing System") or equivalents
  - general admission requirements
- however (due to weak restrictions)
  - initial restriction on immatriculation period
  - temporary immatriculation lasts one year
  - after that: a certain amount of credit points **must** be proven to get non-temporary admission

Courses

1

Foundations of Cognitive Science
Mathematics I
Methods of programming (Algorithms)
Foundations of Logic I
Introduction to Neurobiology
Introduction to Linguistics
Mind, Brain, and Computation: Aspects of Cognitive Science
Functional Programming (LISP)

2

Theory of Cognition I
Mathematics II
Cognitive Psychology I
Programming in Logic (PROLOG)
Foundations of Logic II
Introduction to the Philosophy of Mind
Cellular Neuroscience

3

Theory of Cognition II
Methods of Programming
Foundations of Logic I
Introduction to Linguistics
Cognitive Psychology II
Propaedeutics to Empirical Methods in Cognitive Science

4

Theory of Cognition III
Cognitive Neuroscience
Empirical Methods in Cognitive Science
Philosophy of the Mind
Foundations of Logic II