

School of Cognitive and Computing Sciences

First Year School Course — CG019

COGNITIVE MODELLING

Seminar Week 4: Summer Term 2002

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CONNECTIONISM

1. Read the sections on connectionism in [G⁺98] and be prepared to explain parts of it to the class: Chapter 2, 34–49; Chapter 5, 135–136, 142–143; Chapter 6, 158, 160–163; Chapter 10, 307–308.
2. Imagine that you are trying to convince someone that the best way to create an artificially intelligent agent is to simulate the parallel processing activity of the brain using broadly connectionist resources. Think of a list of 5 major features that you would list as selling points for a connectionist approach, and be prepared to expand upon each item in your list.
3. Imagine that you are trying to convince someone that connectionist approaches, though they may be useful for modelling the brain, have very little role to play in the attempt to model and understand the mind. The most important and interesting mental processes, you will argue, occur slowly, in serial, and are best modelled using standard tools. How would you try to make your case?
4. If you can, try to also read at least one of the following: [Bec98, CS98, CC98]

References

- [Bec98] W. Bechtel. Connectionism and the philosophy of mind. In William G. Lycan, editor, *Mind and Cognition: an anthology*. Blackwell, Oxford, 1998. BF 171 Min.
- [CC98] Paul M. Churchland and Patricia S. Churchland. *On The Contrary*. MIT Press, Cambridge, Mass., 1998. BD 418.3 Chu. Also in *SCIENTIFIC AMERICAN* 1990 p. 26-31.
- [CS98] Paul M. Churchland and T. Sejnowski. Neural representation and neural computation. In William G. Lycan, editor, *Mind and Cognition: an anthology*. Blackwell, Oxford, 1998. BF 171 Min.
- [G⁺98] David W. Green et al. *Cognitive Science, An Introduction*. Blackwell, Oxford, 1998. QZ 1000 Cog.