



Lunedì 3 Febbraio 2014

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M-PSI/01, , 4 crediti

Corsi di laurea / indirizzi:

> Lauree triennali N.O DM 270/04 / [Scienze psicologiche cognitive e psicobiologiche \(L-1\)](#)[Prof. Flores d'Arcais Giovanni B.](#)[Sede e calendario lezioni](#)[Dati statistici votazioni esami](#)**Teaching language**

Inglese

Educational And Training Objectives

The course offers an overview of the current theoretical and methodological trends in the study of cognition.

Course content

The first part of the course focuses on the recent advances in developing formal models of cognitive functions (connectionism, dynamic systems approach, Bayesian approach) and on the integrative effort to bridge the gap between behavioural data and neural data. The second part of the course takes numerical cognition as a case study to show how interdisciplinary research spanning a variety of methods (behavioural, neuroimaging, neurophysiological) and subject populations (healthy adults, infants, brain damaged patients, learning disabled children, and non-human animal species) offers a coherent and integrated path towards understanding cognition, from neurons to behaviour.

Recommended reading

All reading material will be made available on the course web site.

- Slides of the course

- Scientific articles (provisional list):

Ansari, D. (2008). Effects of development and enculturation on number representation in the brain.

Nature Reviews Neuroscience, 9, 278-291.

Chater, N., Tenenbaum, J.B., & Yuille, A. (2006). Probabilistic models of cognition: conceptual foundations. Trends in Cognitive Sciences, 10, 287-291.

Dolan, R.J. (2008). Neuroimaging of Cognition: Past, Present, and Future. Neuron, 60, 496-502.

Hope, T. H., Stoianov, I., & Zorzi, M. (in press). Through neural stimulation to behavioral manipulation: A novel method for analysing dynamical cognitive models. Cognitive Science.

Houghton, G. (2005). Connectionist models in cognitive psychology (chapter 1). Hove: Psychology Press.

Nieder, A., & Dehaene, S. (2009). Representation of number in the brain. Annual Review of Neuroscience, 32, 185-208.

O'Reilly, R.C. (1998). Six principles for biologically based computational models of cortical cognition.

Trends in Cognitive Sciences, 11, 455-462.

Port, R. (2002). The dynamical systems hypothesis in cognitive science. MacMillan Encyclopedia of Cognitive Science, 1, 1027-1032.