

title of the subject: Introduction to Cognitive Science	credits: 2
type of the subject: lecture	
appraisal (examination/ practical course mark / other): examination	
place in the curriculum (semester): 1	
prerequisites (<i>if any</i>):	
description of the subject:	
<p>Historical and conceptual introduction to cognitive science from a combined philosophical, psychological, biological and computational point of view. We start with the prehistory of the cognitive paradigm and discuss how cognitivism endeavours to solve its problems. We characterize classic cogsci from the point of view of language, formal systems, and computations and discuss its basic philosophical underpinnings as well as the arising problems. Then we turn to connectionism and the soft computing, brain theory inspired metaphors of the mind, to conclude with the modern picture (and its criticism) in embodiment, the “dynamic hypothesis” as well as the new philosophy of mind.</p> <p><i>I. The Nature of Cognitive Science</i></p> <ol style="list-style-type: none"> 1. From Behaviorism to Cognitivism 2. Intentionality, Folk Psychology and the Animals 3. Functionalism and the Mind/Body Problem <p><i>II: The Representational Theory of the Mind</i></p> <ol style="list-style-type: none"> 1. Mind and Language. The Classical Symbolic Picture 2. Origins of the Computer Methaphor 3. Can Machines Think? The Turing Test and Understanding <p><i>III. The Subsymbolic Paradigm and Related Matters</i></p> <ol style="list-style-type: none"> 1. Connectionism 2. Elimination, Supervenience and Identity Theories 3. Individualism versus the Social Theory of Mind <p><i>IV- Mind and Body</i></p> <ol style="list-style-type: none"> 1. Consciousness and Qualia 2. The Dynamic Hypothesis 3. Embodiment 	
required readings:	
<p>A Reader in Cognitive Science (n.d.). Retrieved from http://hps.elte.hu/~gk/books/cogreader.html</p> <p>I/1. From Behaviorism to Cognitive Science</p> <p>Sellars, W. (1963). <i>Science, Perception and Reality</i>. London : Routledge & Kegan Paul.</p> <p>Skinner, B: (1938). <i>The Behavior of Organisms</i>. Englewood Cliffs: Prentice Hall.</p> <p>Tolman, E. C. (1932). <i>Purposive Behavior in Animals and Men</i>. New York: Century.</p> <p>I/2. Intentionality, Folk Psychology, and Animal Intelligence</p> <p>Searle, J. R. (1983). <i>Intentionality: An essay in the philosophy of mind</i>. Cambridge: Cambridge University Press.</p> <p>Goldman, A. I. (1993). The psychology of folk psychology. <i>Behavioral and Brain Sciences</i> 16, 15-28.</p> <p>Stich, S. (1983). <i>From Folk Psychology to Cognitive Science</i>. Cambridge, Mass: MIT Press.</p> <p>I/3. The Mind-Body Problem. Functionalism</p> <p>Dennett, D. C. (1991). <i>Consciousness Explained</i>. Boston: Little Brown.</p> <p>Putnam, H. (1960). Minds and machines. In: S. Hook (Ed.), <i>Dimensions of Mind</i> (pp. 362-385). New York: New York University Press.</p> <p>Block, N. (1995). The mind as the software of the brain. In E. E. Smith & D. N. Osherson (Eds.),</p>	

Thinking: An invitation to the cognitive science (pp. 377-425). Cambridge, MA: MIT Press.

II/1. Mind and Language. The Representational Conception

Millikan, R.G. (1984). *Language, Thought and Other Biological Categories*. Cambridge, Mass: MIT Press.

Chandler, D. (1999). *Semiotics for Beginners*. Retrieved from <http://www.argyroneta.com/s4b/semiotic.html>

Chomsky, N. (1963). *Language and mind*. New York: Harcourt Brace Jovanovich.

Fodor, J. A. (1981). *Representations: Philosophical Essays on the Foundations of Cognitive Science*. Cambridge, Mass: MIT Press.

II/2. The Computational Metaphor

Floridi, L. (2000). *Philosophy and Computing: A Webliography*. Retrieved from <http://www.wolfson.ox.ac.uk/~floridi/webliography.htm>

Lee, J. A. N. (2000). *History of Computing*. Retrieved from <http://ei.cs.vt.edu/~history/IEEE> Computer Society: The History of Computing, <http://www.computer.org/history/>

II/3. Can Machines Think?

Turing, A. M. (1950). Computing machinery and intelligence. *Mind LIX*(236), 433-460. Retrieved from <http://hps.elte.hu/~gk/books/cog/turing.htm>

Weizenbaum, J. (1965). ELIZA - A computer program for the study of natural language communication between man and machine. *Communications of the Association for Computing Machinery* 9(1), 36-45. ELIZA (n.d.). Retrieved from <http://hps.elte.hu/~gk/Eliza/index.html>

Loebner-prize (n.d.). Retrieved from <http://hps.elte.hu/~gk/Loebner/TT.html>

III/1. Symbolic and Subsymbolic Processing

Newell, A. (1980). Physical symbol systems. *Cognitive Science* 4, 135-183.

Newell, A., & Simon, H. (1976). Computer science as empirical enquiry: Symbols and search. *Communications of ACM* 19, 113 -126.

McCulloch, W. S., & Pitts, W. S. (1943). A logical calculus of the ideas immanent in nervous activity. *Bulletin of Mathematical Biophysics* 7,115 - 133.

McCulloch, W. S. (1965). *Emodiments of Mind*. Boston, Mass: MIT Press.

IV/2. Dynamical Models of the Mind

Chomsky, N. (1965). *Aspects of the Theory of Syntax*. Cambridge, Mass.: MIT Press.

Fodor, J. A. (1981). *Representations*. Cambridge, Mass.: MIT Press.

Fodor, J. A., & Pylyshyn, Z. (1988). Connectionism and cognitive architecture: A critical analysis, *Cognition* 28, 3-71.

Person in charge of the subject (*name, position, scientific degree*): **György Kampis, professor, PhD, DSc, Dr. habil.**

Teacher(s) of the subject if any (*name, position, scientific degree*) : **György Kampis, professor, PhD, DSc, Dr. habil., Zoltán Jakab, assistant professor, PhD**