UCLouvain

lcomu2270

2025

COGNITIVE SEMIOLOGY

5.00 credits	30.0 h	Q2

Teacher(s)	Claes Arnaud (compensates Fastrez Pierre) ;Fastrez Pierre ;
Language :	French
Place of the course	Louvain-la-Neuve
Main themes	The course aims at presenting the main conceptual frameworks that federate research in cognitive science (cognitivism, connexionism, experientialism) and at showing their usefulness for the study of mediated communication. The main themes to be discussed are the respective epistemologies of each of these paradigms (objectivism, constructivism...) and the central concepts of cognitive semantics and cognitive linguistics, which delineate the current orientations in cognitive semiotics, as well as their consequences on the study of the relationship between representational systems and cognitive activity (cf. contents...). The course also aims at showcasing the usefulness of the semio-cognitive approach to the design of media messages and communicational artifacts.
Learning outcomes	**At the end of this learning unit, the student is able to :** 1. Become knowledgeable on the topics of the main theoretical paradigms that have structured cognitive science, and of the main concepts they yielded, which underlie the semio-cognitive analysis of communication situations. 4. Apply these concepts to analyze a given mediated communication situation or media message, and to formulate hypotheses on the relationship between its techno-semiotic properties and the cognitive activity of its users.

Evaluation methods	Course evaluation includes:
	- a written assignment consisting in:
	  - reading one or two scientific articles related one of the course chapters (part 2);
	  - the application of the concepts presented in this/these paper(s) to a mediated communication situation of choice, in the form of a report showcasing the student's ability to understand these concepts and apply them in an analytical approach.
	- a written examination consisting of four to five questions covering the major chapters of the course, each student being exempted from answering the question corresponding to the chapter he / she has addressed in his / her assignment;
	- participation in the course sessions organized in the form of a seminar (presentation and discussion of texts)
	In the January session, the three parts of this evaluation account for 30%, 60% and 10% of the student's final grade respectively. As participation in the seminar sessions cannot be modified for the June or September sessions, the student's final grade is then calculated alternatively according to the proportion described above, keeping the original grade for this participation, or according to a proportion of 1/3 for the work and 2/3 for the exam, whichever is more favorable to the student.
	Depending on the health measures related to covid19 in force during the examination session, the written examination may either be maintained in person, or be organized remotely, or be replaced by a remote oral examination.

Teaching methods	The course is structured as follows
	1. Introductory session presenting the course, its teaching and evaluation methods, the main questions covered and the theoretical evolutions that led to the emergence of cognitive semiotics
	2. First part of the course on the origins of human communication
	  1. Sessions in seminar mode, involving
	  1. preparatory reading and writing work on the part of the students,
	  2. the revision in session, in small groups, of the written productions of the participants,
	  3. and the collective discussion of these revised productions
	  2. Synthesis session of the material discussed in the seminar sessions
	3. Second part of the course
	  1. Lectures on theoretical approaches
	  2. When applicable, exercises in applying the concepts to media devices, prepared in session by the students formed into groups, then discussed collectively
	All of the course sessions are normally given face to face.
	Depending on the evolution of health measures relating to covid19, the following adjustments may be made:
	1. The parts of the seminar sessions (part 1) requiring work in small groups could be conducted in asynchronous remote mode, between the sessions.
	2. The work on the application exercises (part 2) in small groups could also be carried out in asynchronous mode at a distance, between the sessions (this may lead to shortening some sessions).
	3. If the capacity of the classroom does not allow for all the students to attend, the course will be switched to a flipped classroom: videos of the lectures will be made available to the students (to be viewed between the lecture sessions) and the lecture sessions will be organized in the form of question-and-answer sessions and presentations of application exercises by the students. These sessions will be given either in co-modality (presence of the majority of students, and possibility of remote participation via Teams) or remotely (via Teams), depending on the sanitary measures in force.

Content	The course contains two parts: **1. Origins of human communication:** the cognitive infrastructure of human cooperative communication. **2. Communication and Cognition: Conceptual Tools.** This part presents a set of concepts that underlie the semio-cognitive analysis of communication settings: · the notion of conceptual projection in the study of metaphor, analogy and conceptual integration; · the notion of cognitive system in the context of distributed cognition; · the notions of schema/schematicity and of mental models and their entailments on the issues of representation and knowledge. The first part of the course provides a theoretical framework contextualizing the subjects of the second part, which is oriented towards the analysis of communication devices.
Inline resources	Moodle website: · course description · course announcements · slides projected during the course (pdf posted after each session) · course syllabus (pdf) · further readings (pdf) · collaborative writing space (glossary / wiki) · instructions and storage area for final essay If covid19 health measures prevent face-to-face class sessions, Microsoft Teams can be used to provide co-modal or remote instruction.

Bibliography	Première partie du cours (texte de base) • Tomasello, M. (2008). Origins of Human Communication. Cambridge (MA): MIT Press. Seconde partie du cours (liste indicative) • Collins, A., & Gentner, D. (1987). How people construct mental models. In D. Holland & N. Quinn (Éd.), Cultural Models in Thought and Language (p. 243#265). Cambridge (MA): Cambridge University Press. • Fauconnier Gilles & Turner Mark (2002) [Chapter 3: The Elements of Blending] in The Way We Think – Conceptual Blending and the Mind's Hidden Complexities, New York : Basic Books, pp. 39-57 • Fauconnier, Gilles (2001) "Conceptual blending and analogy", in D. Gentner, K. Holyoak, & B. Kokinov, The analogical mind: Perspectives from cognitive science, Cambridge, MA: M.I.T. Press, pp. 255-286 • Gentner D., Bowdle B., Wolff Ph. & Boronat C. (2001) "Metaphor is like Analogy." In Gentner D., Holyoak K. & Kokinov B. (eds) The analogical mind: Perspectives from cognitive science, Cambridge (MA): M.I.T. Press, pp. 199-253 • Gentner, D. (2002). Mental Models, Psychology of. In N. J. Smelser & P. B. Baltes (Éd.), International Encyclopedia of the Social and Behavioral Sciences (p. 9683#9687). Amsterdam: Elsevier Press. • Gentner, D., & Gentner, D. R. (1983). Flowing waters or teeming crowds: Mental models of electricity. In D. Gentner & A. Stevens (Éd.), Mental Models (p. 99#129). Hillsdale, NJ, USA: Lawrence Erlbaum Associates Inc. • Grady, Joseph, Oakley, Todd, & Coulson, Seana (1999) "Conceptual Blending and Metaphor", in Steen G. & Gibbs R. (dir.) Metaphor in Cognitive Linguistics, Amsterdam & Philadelphia: John Benjamins, pp. 101-124 • Hegarty, M., & Just, M. A. (1993). Constructing mental models of machines from text and diagrams. Journal of memory and language, 32(6), 717–742. • Hollan, J., Hutchins, E., & Kirsh, D. (2000) "Distributed Cognition: Toward a New Foundation for Human-Computer Interaction Research", ACM Transactions on Computer-Human Interaction, 7(2):174-196 • Hutchins, E. (2001) Distributed Cognition. In N. J. Smelser & P. B. Baltes (eds) International Encyclopedia of the Social and Behavioral Sciences, Amsterdam: Elsevier Press, pp. 2068-2072 • Hutchins, Edwin (2005) "Material Anchors for Conceptual Blends" in Journal of Pragmatics, 37, pp. 1555-1577 • Jacquinot, G. (1977). Chapitre III : Quelques structures propres au film à intention didactique. Dans Image et pédagogie. Analyse sémiologique du film à intention didactique. Paris: P.U.F. • Jonassen, D. H. (1995). Operationalizing Mental Models: Strategies for Assessing Mental Models to Support Meaningful Learning and Design-supportive Learning Environments. In The First International Conference on Computer Support for Collaborative Learning (p. 182–186). Hillsdale, NJ, USA: L. Erlbaum Associates Inc. https://doi.org/10.3115/222020.222166 • Kirsh, D. & Maglio P. (1994) On Distinguishing Epistemic from Pragmatic Actions. Cognitive Science, 18:513-549 • Kirsh, D. (1995) Complementary strategies: Why we use our hands when we think. In Johanna D. Moore & Jill Fain Lehman (eds) Proceedings of the Seventeenth Annual Conference of the Cognitive Science Society. pp. 212-217. • Kirsh, D. (1995) The Intelligent Use of Space. Artificial Intelligence, 73(1-2):31-68 • Lakoff G. & Johnson M. (1985) Les métaphores dans la vie quotidienne, Paris : Ed. de Minuit (trad. fr. de M. de Fornel et J.-J. Leclere) • Lakoff, G. (1993) "The contemporary theory of metaphor" in Ortony, A. (ed) Metaphor and Thought (2nd edition), Cambridge (MA): Cambridge University Press • Lowe, R., & Boucheix, J.-M. (2008). Learning from animated diagrams: How are mental models built? In Diagrammatic representation and inference (p. 266–281). Springer Berlin Heidelberg. Consulté à l'adresse http://link.springer.com/chapter/10.1007/978-3-540-87730-1_25 • Mayer, R. E. (2009). Multimedia Learning (2e éd.). Cambridge University Press. • Meunier J.-P. (2003) [8. Les schémas] & [9. La schématisation] in Approches systémiques de la communication, Bruxelles: De Boeck Université, pp. 196-205 • Norman, D. A. (1983). Some observations on mental models. In D. Gentner & A. Stevens (Éd.), Mental Models (p. 7#14). Hillsdale, NJ, USA: Lawrence Erlbaum Associates Inc. • Norman, D.A. (1993) "Les artéfacts cognitifs" in Conein B., Dodier N., Thévenot L. (dir) Raisons Pratiques, n°4 • Rumelhart D. & Norman D. (1995) « Les schémas », in Le Ny J.-F. & Gineste M.-D. (dir), La Psychologie, Larousse, coll. "textes essentiels ", pp. 308-318, traduit par M.-C. Baland (éd. orig. : (1983) "Representation in memory. CHIP 116", in Steven's Handbook of experimental psychology, New York, Wiley, pp. 38-48) • Tomasello, M. (1999) [Chapter 1: A Puzzle and a Hypothesis] in The Cultural Origins of Human Cognition, Cambridge, MA: Harvard University Press • Toth, E. E., Suthers, D. D., & Lesgold, A. M. (2002). Mapping to know: The effects of representational guidance and reflective assessment on scientific inquiry. Science Education, 86(2), 264–286.
Faculty or entity in charge	COMU

Programmes containing this learning unit (UE)

Program title	Acronym	Credits	Prerequisite	Learning outcomes
Master [120] in Information and Communication Science and Technology	STIC2M	5		