

Program description:

Introduction About Cognitive Science and Knowledge Studies/Technologies Cognitive science is a rapidly evolving highly interdisciplinary field dealing in the first place with mind and cognition, and in a broader perspective, with all aspects of human and non-human (be it animal or artificial) life influenced in one way or another by "what we know" and "how we know". As Cognitive Science comprises various disciplines, like Neuroscience, Psychology, Artificial Intelligence, Philosophy, Linguistics, Biology, etc. (to name but the core disciplines), it often uses a comparative view on cognitive phenomena, which proves to be fruitful. Despite of its young age (the very idea of this new discipline was born in the 50-ies, and the process of its institutionalization started at the end of the 70-ies), cognitive science now could be regarded as a paradigm-forming field among the broad area of all human sciences, with a great impact on many spheres of human life. Closely related to the field of cognitive science is the newly emerging discipline of knowledge studies and knowledge technologies. The emerging field of Knowledge Studies/Technologies is a highly inter-/transdisciplinary domain having a broad background in philosophy, epistemology, technology (ICT), and philosophy of science. Apart from these disciplines a wide range of scientific fields is involved: cognitive science, pedagogy, knowledge technologies, knowledge management, cultural sciences, knowledge sociology, etc. Knowledge Studies is about the processes of generating, constructing, negotiating, understanding, and sharing knowledge using several different technologies and media, as well as taking into consideration the social dimension of these processes. Understanding the interactions between cognitive systems (their cognitive/knowledge processes), their environment, and the artifacts (technological, cultural, etc) and how they shape each other (under the perspective of knowledge processes) is the focus of research and teaching in this CEEPUS network. It is obvious that there are close relations between the fields of cognitive science and knowledge studies/technologies: apart from their highly interdisciplinary character their focus is on cognitive processes and their "products"; i.e., knowledge (processes) are the result of cognitive processes and cognitive processes are characterized by knowledge processes. Hence, one discipline cannot be understood without the other: while there is a wide range of applied results, cognitive science research activities can predominantly be characterized as basic research. Knowledge studies and technologies also introduce the dimension of application in various domains of business, education, and many other fields. Teaching Programs in Cognitive Science and Knowledge Studies/Technologies For more than thirty years cognitive science has not only been a field of research but also a major subject of various graduate and Ph.D. programs educating a new generation of young researchers and professionals. The major part of these programs are in the USA and Canada (to mention only the University of California at San Diego, Carnegie-Mellon University, the Massachusetts Institute of Technology, Stanford University, the University of Toronto, McGill University etc.) but there are also some very important European centers for research and education in cognitive science: University of Edinburgh, University of Sussex, University of Hamburg, University of Vienna, University of Osnabrück, etc. It is seen that they are predominantly in the Western part of Europe. In Central and Eastern Europe, the process of institutionalizing cognitive science started in the 90-ties, with the New Bulgarian University being the first to offer a program in cognitive science, followed by the Eotvos Lorand University (Budapest). In October 2005, a SOCRATES/EU-project for the development of a joint master program in cognitive science ("Middle European interdisciplinary master programme in

Cognitive Science”) has been started by 6 Central and Eastern European universities (University of Vienna, University of Ljubljana, Comenius University in Bratislava, University of Zagreb, Eotvos Lorand University in Budapest and Technical University Budapest) based on previous collaboration in the former CEEPUS network for cognitive science. Furthermore, several PhD-programs in cognitive science are in place at many of the participating institutions. After successfully establishing the joint master program in cognitive science, the focus is now on providing further education to master graduates. Therefore, the aim is to establish also joint PhD activities between the participating universities in our CEEPUS-network. Similarly, knowledge studies/technologies have been established only recently as regular study programs in various US and European countries. Formerly, they were often implicitly located in philosophy (of science) or computer science departments. The University of Vienna has launched an extension curriculum in this field.

The Present Status of Cognitive Science and Knowledge Studies/Technologies in Central and Eastern Europe

The first graduate program in cognitive science (for Central and Eastern Europe region) was founded by the Department of Cognitive Science and Psychology of New Bulgarian University. It started in October, 1992. More details concerning this program are given below, where a brief presentation of the departments involved in the proposed network is given. At this point it should only be stressed that from the very beginning of its existence, the Department of Cognitive Science and Psychology was open for international cooperation: it established close relations with leading cognitive science centers around the world. Since 1994 the Department began to organize an International Summer School in Cognitive Science every year, and since 1995 an International Graduate Program in Cognitive Science held in English was set up. This program attracted students from Armenia, Belarus, Macedonia, Romania, Slovakia, Turkey, and Ukraine. A few years later, a Ph.D. program in Cognitive Science was established by the Department of History and Philosophy of Science of Lorand Eotvos University (Budapest). This Department is one of the founding partners of our network. Above that, they started a one-semester certificate-giving program in English for undergraduate students in cognitive science. The name of the program is "Budapest Semester in Cognitive Science" (BSCS). Students from USA, Bulgaria, Slovenia, Hungary, Austria and Germany, etc. took part in BSCS during the last years. In March 2003, the University of Zagreb established an interdisciplinary graduate program (master and doctoral) in "Language Communication and Cognitive Neuroscience". Today there are also several groups at different Central and Eastern European universities, such as in Croatia, Poland, Romania, Czech Republic, Slovakia, Slovenia, and Russia, which have been founded in order to propagate the ideas of cognitive science and knowledge studies, and to promote the establishment of educational programs in this field. Out of that the idea for a joint program emerged and got realized in the curriculum development project “MEi:CogSci:Middle European interdisciplinary master programme in Cognitive Science” funded by SOCRATES/ERASMUS. Recently, the University of Vienna has announced Cognitive Science as an "Emerging Focus": several new professorships have been established as well as a interdisciplinary research platform (from 2011 on), which aim to enable and foster interdisciplinary research endeavours in the field, as well as establish a PhD program in Cognitive Science.

General Aims of the Proposed Central and Eastern European Network for Cognitive Science and Knowledge Studies/Technologies

Apart from the goals mentioned in this electronic application form, the main goals can be summarized as follows: 1.) Support teacher & student mobility for the joint master program in Cognitive Science: This CEEPUS network will act as a student & teacher exchange platform for the joint master program “MEi:CogSci:Middle European interdisciplinary master programme in Cognitive Science” which has been developed in the course of an SOCRATES/ERASMUS curriculum development project with some of the partners of the proposed

CEEPUS-network. This joint master program is the result of the cooperation of a previous CEEPUS-network. - Within our joint master program (MEi:CogSci) student mobility is partly covered by ERASMUS. The other important source for funding student mobility is CEEPUS. We are more and more relying on CEEPUS grants in order to provide stipends to the growing number of students. - Support the process of extending, establishing and developing further high quality graduate and Ph.D. programs in cognitive science at the universities of Central and Eastern Europe; 2.) Support student and teacher mobility also for partners who are not (yet) in the joint master program; 3.) Support the improvement and quality of curricula of already existing programs in cognitive science and related disciplines (knowledge studies, psychology, philosophy, linguistics, neuroscience, cognitive modeling, etc.) by providing the departments that are members of the network with the opportunity to choose among a greater variety of courses; 4.) Strengthen the interdisciplinary training of students in humanities, natural sciences, and social sciences giving them the chance to study and specialize, as well as to take part in seminars and research groups outside of their own university; 5.) Establishing close relations among the departments - members of the network - with the idea to create better conditions for further joint educational and research projects with a strong interdisciplinary emphasis.

Participating Institutions and their Contribution

University of Vienna, Department of Philosophy/Philosophy of Science This department has a long history in cooperating with Central and Eastern European universities over the last years (e.g., it has been a member of a previous CEEPUS network, organization of a joint master program, organization of joint conferences, etc.). In the field of cognitive science, its members are mainly interested in the philosophical and epistemological aspects of cognitive science, knowledge studies/technologies, computational neuroscience (e.g., the problem of knowledge representation in natural and artificial cognitive systems, constructivism, neural representation and learning, etc.), pedagogical issues of knowledge-oriented didactics, knowledge management in teaching and research. A second focus is on questions in the field of philosophy of science concerning cognitive science. The question about knowledge and its different forms of representation (in the neural substratum, in an individual, in an organization, in language, or in a scientific theory) is of special research interest. Beside that, the departmental research foci cover also other areas like analytic philosophy, intercultural philosophy, ethics, social philosophy, etc. More information about the Department of Philosophy/Philosophy of Science can be found on <http://philosophie.univie.ac.at/> <http://wissenschaftstheorie.univie.ac.at/> The Department of Philosophy/Philosophy of Science is the main office of the Austrian Society for Cognitive Science (<http://www.univie.ac.at/cognition/>) whose central concern has been to promote cognitive science in Austria by organizing research talks and presentations of national and international. Since 2011 many of the activities are now organized through the Cognitive Science Research Platform (<http://cogsci.univie.ac.at/>). This newly established Cognitive Science Research Platform (2011) is fostering collaboration among researchers in the field of cognitive science, mainly on research level, but also in teaching. More information on its activities can be found on: <http://cognitivescience.univie.ac.at/>

New Bulgarian University, Department of Cognitive Science and Psychology The Department of Cognitive Science and Psychology at New Bulgarian University is a young, but rapidly progressing institution. In 1992 it started the first Cognitive Science Program in Eastern and Central Europe. The program has been supervised by an International Advisory Board among the members of which are broadly known experts in cognitive science as Jeff Elman (University of California at San Diego, USA), Amedeo Cappelletti (Institute of Computational Linguistics, CNR, Pisa, Italy), Daniel Dennett (Tufts University, Medford, Massachusetts, USA), Charles De Weert (University of Nijmegen, Holland), Christian Freksa (Hamburg University, Germany), David Rumelhart

(Stanford University, California, USA), Paul Smolensky (John Hopkins University, Baltimore, USA) etc. In 1996 the Graduate program in cognitive science was offered in English for international students. Since then, over 30 foreign students from Armenia, Belarus, Germany, Macedonia, Romania, Slovakia, Turkey, and Ukraine have passed through the program. Since 1994 the Department has started to organise annually an International Summer School in Cognitive Science. In 1997 the staff of the Department established a Central and East European Centre for Cognitive Science with the primary goal to become a leading regional (and in perspective European) centre for research and education in cognitive science. In 2000 the Centre has been awarded a Commendation by the Cognitive Science Society "in recognition of the tremendous contribution made by offering cognitive science education at the international level". In 2003 the Center was recognized as a "Center of Excellence" by the 5th Framework Programme of the European Commission (Contr. No. QLG4-CT-2002-90459). From the academic year 1999/2000 to the academic year 2004/2005 the Department has been a coordinating institution of the CEEPUS network BG-0104. More information can be found on: <http://www.nbu.bg/cogs/center/index.html>

Charles University Prague, Faculty of Philosophy, Department of Logic The Department of Logic is one of about fifty departments at Faculty of Arts and Philosophy of Charles University. It has a five year master program in logic with some 60 students in it, and a doctoral program in logic with some 3-5 students. The department also teaches a lot of introductory courses for other departments, like philosophy and sociology. It offers education on bachelor, master and Ph.D. level. Some of the faculty members are mathematicians, some are oriented philosophically. The students have to combine logic with something else. A natural but by no means obligatory choice is philosophy; other options are e.g. linguistics or theoretical computer science (done at the Faculty of Mathematics and Physics). In the CEEPUS program, the department of logic can offer intensive courses in logic. On the other hand, it welcomes lectures and intensive courses in e.g. philosophy of science and philosophy of mind, and in other fields around logic, philosophy, and history of logic. More information about Department of Logic can be found on <http://www.logika.ff.cuni.cz/>

University of Zagreb, Center for Postgraduate Studies The University of Zagreb (1669) is the oldest and biggest university in South-Eastern Europe. Ever since its foundation the University has been continually growing and developing and now consists of 31 faculties and three art academies. With its comprehensive programmes and over 50,000 full-time undergraduate and postgraduate students the University is the strongest teaching institution in Croatia. It offers a wide range of academic degree courses leading to Bachelor's, Master's and PhD degrees in the following fields: Arts, Biomedicine, Biotechnology, Engineering, Humanities, Natural and Social Sciences. It is also a strongly research-oriented institution, contributing with over 50% to the total research output of the country. One unit of the University is the Postgraduate Study Centre, which unifies and integrates the studies on the MA and PhD levels that are not conducted by individual faculties but by the University (according to the concept of integrated university). A novelty is the interdisciplinary area, which currently consists of six graduate studies. One of the newly established graduate study programmes in this area is the Language and Cognitive Neuroscience study programme. By linking lecturers and researchers from different institutions and areas, the study programme is working towards the real and not declarative integrated university in which the students – the future new-style researchers – will be able to work in a new, interdisciplinary setting by using the knowledge bases of a variety of professions and scientific disciplines. One of particularly intriguing topics for cognitive neuroscience, and the main research topic of the study, is language. Due to the typological differences among languages it is highly interesting for scientists to look into the correlates in language processing in different languages in order to arrive at what is universal and

central for the research of that cognitive phenomenon in general. Taking into consideration the available lecturers and laboratories involved in the study, the contribution of the study to the CEEPUS network could be twofold in terms of educational levels: 1.) on a basic, general level – courses on fundamentals of linguistics, neurobiology, programming, research methods and research ethics. 2.) on a specific, specialized level – courses on artificial intelligence, artificial neuronal networks, automatic speech recognition, image analysis, psycholinguistics, neurolinguistics, functional neuroimaging, developmental cortex neurobiology. The lecturers and researchers that participate in the study programme as staff members are from the University of Zagreb as well as from well-known established European and American institutions. More information about the Language and Cognitive Neuroscience study can be found on: <http://www.jekon.unizg.hr>. University of Rijeka, Department of Philosophy The Department of Philosophy at the University of Rijeka is a relatively new unit. The main philosophical orientation of the faculty members is analytical, a special attention being given to the philosophy of science (both general, and philosophy of biology and medicine). In addition, the departmental curriculum since its beginning has strong interest in the cognitivist approach, including accordingly the philosophy of mind, and philosophy of psychology among our regular courses. The Department also holds 'Senior Seminar' meetings, and an international annual conference. For further information, please visit: <http://www.ffri.uniri.hr/en/departments-and-divisions/departments-of-philosophy.html>. Eötvös Lorand University, Department of History and Philosophy of Science The Department is a center of research in Hungary in the history, philosophy and foundations of science: its record in international publications in the field, its extensive international contacts, its cooperation with science and philosophy departments of Eötvös and other Hungarian universities and the number of research grants awarded to members of the department make the Department unique in the Hungarian university system. The Department has established a Ph.D. program in Cognitive Science and it is interested in exchanging experience with universities that holds similar programs. Now the Department participates in several Ph.D. programs at the Faculty of Science and the Faculty of Computer Science. All together there are 8-10 PhD students under the supervision of the Department. The Department was one of the founding partners and a very active participant of a CEEPUS network in cognitive science between 1998-2004. In this period the Department organized a specialized education in English for the visiting foreign students, as well as sent students and lecturers in history and philosophy of science, philosophical problems of cognitive science, hermeneutics, philosophical analysis of knowledge to the other partners of the network altogether about 8-10 persons in each academic year. In 2003 the department launched the Budapest Semester in Cognitive Science, which is a non-degree undergraduate program for students from the US and other countries to study abroad in the field of cognitive science from an interdisciplinary perspective. (See: <http://www.bsos-us.org/>) Lecturers of the Semester are established experts with a high-level international research and teaching experience. In the last semesters some of the CEEPUS visitors of the department were involved into the Semester as students or lecturers. Now the department would like to continue this praxis, and would like to involve into the program of the Semester some MEi:CogSci-students and lecturers coming to Budapest within the framework of this new CEEPUS network. Because the Semester is based on a block courses system, this would fit well to the usual CEEPUS traveling activity. Beside the Semester the department would like to offer regular courses within the framework of the MEi:CogSci joint master program for students coming from the partner universities. Our courses are included into the joint curriculum, their main fields: Neurodynamics, Cognitive Ethology, Cognitive Anthropology, Philosophy of Mind, Consciousness, etc. Currently the

Department consists of 5 tenured faculty and one permanent guest lecturer; more than ten further lecturers are related to the department on a temporary basis. According to the Department's teaching and research profile, the faculty members have various degrees in both sciences and philosophy. The Head of the Department is Prof. Gyorgy Kampis. More information about the department and its members could be found on the Web page <http://hps.elte.hu>. Jagiellonian University, Faculty of Philosophy, Institute of Philosophy Cognitive Science at Jagiellonian University is relatively new initiative, established in the Institute of Philosophy, in collaboration with the Institute of Psychology, and AGH University of Science and Technology, however it became shortly one of the most significant research groups in the area of cognitive science in Poland. The Cognitive Science Department is responsible for BA (from 2010) and MA (from 2013) programmes. Philosophy has been cultivated at the Jagiellonian University since the turn of the 14th century. Recently the research projects conducted in the Institute of Philosophy focus first of all on ontology, associated on the one hand with phenomenological tradition (due to the Husserl's student Prof. Roman Ingarden), on the other hand with modal logic (Prof. Jerzy Perzanowski); moreover on epistemology and analytic philosophy referring to the Lvov-Warsaw School (Prof. Jan Wolenski), mathematical logic (Prof. Andrzej Wronski) and philosophy of physics (Prof. Tomasz Placek). The Institute of Philosophy employs 65, and the Institute of Psychology 42 members of the teaching staff (senior and junior faculty). Research projects conducted by the JU cognitive scientists, working in the Institute of Philosophy as well as Institute of Psychology, focus inter alia on knowledge-based intelligence systems, philosophical problems of knowledge, perception and representation, fluid intelligence, working memory, neural correlates of consciousness, subjective measures of consciousness, children's theory of mind, fMRI correlates of working memory, and EEG correlates of attention and intelligence, human-computer interaction, heart rate correlates of cognitive functions, philosophical foundations of cognitive science. JU Cognitive Science Department cooperates inter alia with Rutgers University (joint Jagiellonian-Rutgers Conference in Cognitive Science, June 2014) and City University of New York. Guest lectures and seminars have been given by Prof. Jesse Prinz, Prof. Michael Devitt, Prof. Ernest Lepore, and many other recognized researchers. University of Ljubljana, Faculty of Arts, Department of Philosophy The Department of Philosophy has a long tradition in teaching philosophy of science. The department has established a master program in Philosophy of cognitive sciences in close cooperation with the other Faculties of the University of Ljubljana. It also offers two courses on Philosophy of cognitive science at the undergraduate level and closely related courses on Philosophy of science and Epistemology. Members of the Department are active in the Slovene Society for Cognitive science organising lectures and seminars. They cooperate with the members of the Faculty of Education who are concerned with the topics of application of cognitive methods in education and research of first-person experience in scientific investigation. They will also participate in the network. Both of the faculties are involved in running the joint degree program in Cognitive sciences (MEi:CogSci). The main areas of interest are philosophical problems of cognitive sciences, epistemology, philosophy of science, philosophy of mind, cognitive modelling, cybernetics and education. More about The Department of Philosophy and Faculty of Education can be found on: <http://www.ff.uni-lj.si/> <http://www.pef.uni-lj.si/> Comenius University Bratislava, Faculty of mathematics, physics and informatics & Faculty of Social and Economic Sciences The Comenius University (CU) participated in preparation of the Middle European Interdisciplinary Master Program in Cognitive science (MEi:CogSci) that started in September 2006. At CU, the implementation of MEi:CogSci presupposes the joint operation of two faculties: the Faculty of Mathematics, Physics and Informatics (FMPI), and the Faculty of Social and Economic Sciences (FSSES). At both faculties, there

are various courses taught that are related to cognitive science. Namely, within FMPI the main unit involved in cognitive science is the Department of Applied Informatics, which runs theoretical-methodological courses focusing on computation and programming issues and specialized courses in artificial intelligence (knowledge representation and reasoning, logic, language modeling, neural computation and cognitive modeling), and computer graphics (image recognition, computer vision). The other faculty, FSES, and its two involved units (Institute of cultural studies and Institute of applied psychology) have an expertise in cognitive anthropology, cognitive psychology, personality psychology, social psychology and methodology, philosophy of psychology and philosophy of language. CU also maintains the traditional interdisciplinary two-semester course in Cognitive Science that involves lectures given by invited experts (also from abroad) from various fields. The university has also contributed for several years to annually organizing local one-day workshops focusing on cognitive science and artificial life. University of Bucharest, Department of Philosophy Among other four departments, our department was co-initiator of the CEEPUS network "CEENETCOG" in 1999, which preceded the current network "Cognitive Science, Knowledge Studies, and Knowledge Technologies". Within this previous CEEPUS project, we organized several international symposia at the University of Bucharest (2000, 2001, 2002, 2003). Also in these years, a group of students (mainly from philosophy) and professors (from philosophy, psychology, biology, and informatics) formed to work together on various topics in cognitive science. Since 1995 a course on "Philosophy of mind" has been taught, which was changed to "Philosophy of mind and cognitive science" in 2007 (Only 3 weeks are on philosophy of mind, 10 weeks on cognitive science.). Currently the department also has a number of PhD students working on different topics in philosophy of mind/cognitive science. Moreover, the Department of Philosophy has close connections (teaching and research collaborations) with the Department of Automatics and Computer Science (University of Polytechnics), which has been organizing interdisciplinary research meetings on cognitive science in the last year and a half, where a number of departments from the University of Polytechnics and the University of Bucharest, Medicine University, etc. (Neuroscience, Psychology, Philosophy, Linguistics, Mathematics, etc.) were involved. More information about the course on Philosophy of mind and cognitive science at: <http://filosofie.unibuc.ro/philosophy-of-mind-and-cognitive-science/>

University of Niš, Center for Cognitive Sciences The Center for Cognitive Sciences was founded in July 2013, growing out of the previous informal Cognitive Science Forum, which had gathered a group of university researchers from various disciplines interested in phenomena related to cognitive science (philosophers, psychologists, sociologists, linguists, computer scientists, physicians). The main aim of the Center is to promote interdisciplinary cooperation in the field of cognitive science by organizing meetings, seminars and lectures, as well as by initiating international cooperation with various institutions, and creating an academic curriculum fully devoted to cognitive science. The Center's activities involve not only academic staff, but also a number of students interested in the field. Moreover, the Center aims at fostering collaboration among researchers in different fields of cognitive science, which will lead to various research projects. So far, the Center has hosted a number of lectures given by renowned scholars, such as Ray Jackendoff, Tufts; Mark Turner and Todd Oakley, CWRU; Anthony Brandt, Rice; Ronnie Wilbur, Purdue; Miloš Ikonovic, Pittsburg, as well as a set of lectures and smaller workshops given by various scholars from the United States and the Balkans. Besides this, the Forum and the Center organized two small cognitive science conferences (CogSciNiš 2011 and CogSciNiš 2014). Currently, the Center has ten active members from the University of Niš (Faculties of Philosophy, Medicine, Sciences and Mathematics), and Clinical Center Niš. More information about the Center for Cognitive Sciences and its activities can be found at:

<http://www.cogsci.ni.ac.rs> Perspectives for the Future Development of the Proposed Network Including more partners into the Joint Master Program in Cognitive Science We are planning to extend the participation of universities in the joint master program in Cognitive Science "MEi:CogSci:Middle European international/interdisciplinary master programme in Cognitive Science". As a result of our increasing CEEPUS cooperation and exchange activities with the Jagiellonian University in Cracow we have started negotiations to include the Jagiellonian University in Cracow in our joint degree network. Development of New Joint Master/PhD Programs Building on the expertise which has been reached in the course of developing the joint master program in Cognitive Science "MEi:CogSci - Middle European interdisciplinary master programme in Cognitive Science" we are planning to develop joint PhD programs in cognitive science as well as in the fields of knowledge studies and knowledge technologies. Attracting New Partners We are also open to attract new partners in our network. Last year we re-established the collaborations with the University of Bucharest that has been involved in the former CEEPUS network in cognitive science. This year the University of Nis, Serbia will join our network. Extending the network functions The main activity of the proposed network is the exchange of students and teachers, attending/delivering courses that have already been part of the existing curricula. Next steps in the development of the network will be: • Adding new courses and thereby improving the existing curricula; • Developing further quality standards for the MEi:CogSci program • Establishing joint seminars both for students and teachers • Further development of the MEi:CogSci webportal: • Establishing a web page of the network in combination with the MEi:CogSci program, which main function will be to give information about the whole list of activities supported by the network, as well as information about the most important events held by the partner institutions. • Supporting students in the organisation of the mobility semester