

CogSci-RP@univie — Cognitive Science Research Platform at the University of Vienna

Cognition as Enabler for Art, Language, and Creativity

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Abstract/Executive Summary

This research platform aims to develop a strong research-based Cognitive Sciences profile at the University of Vienna. The main goal is to strengthen the existing interdisciplinary collaborative research in this field by disseminating methodological expertise so as to foster common research questions at different levels, from joint PhD projects to larger, interfaculty or multi-faculty grant applications. In a three-year program, systematic support comprising a four-layer structure (incubation, dissemination, community building, products) is proposed. Beyond the existing research collaborations that provide the building blocks of the profile, the platform will develop efficient research structures that will open new perspectives and identify future needs and thus establish Cognitive Sciences as a strong candidate for a future University research focus.

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1 Goals of this Research Platform

The goal of the Cognitive Sciences* Research Platform@univie (CogSci-RP) is to develop a research profile for the variety of Cognitive Sciences at University of Vienna. Therefore the platform will provide structures to generate and optimize *interdisciplinary research* and to provide the grounds to establish the Cognitive Sciences as an excellent candidate for a future university research focus. This will be accomplished by a systematic dissemination of methodological knowledge to foster interdisciplinary research programs. The platform is established by a group of senior researchers from four faculties and one center. It builds on established, informal collaborations in various areas of joint research interest. It will specifically target the research interests and needs of young researchers. Thus, through a combination of activities on a scientific, methodological, epistemological, as well as on an organizational level, the platform will intensify the existing research strengths in Cognitive Sciences at the University of Vienna and develop a unique profile, by bringing together different methods and approaches. Methods comprise eye-movement measures in cognitive psychology and art history, comparative methods in biological cognition, semiotic analyses and simulation in cognitive linguistics, methods from epistemology and knowledge technologies in philosophy, and behavioral experiments from all partners. The goal is to systematize and institutionalize existing partnerships in order to generate new interdisciplinary research collaborations, joint grant proposals, and a joint PhD-program. Consequently, the platform will increase the visibility of the Cognitive Sciences at and beyond the University of Vienna.

Thus, in addition to fostering collaborations, it aims to *establish an infrastructure* which will attract additional researchers from various disciplines, serve as a contact for interdisciplinary research activities, and which aims to foster interdisciplinary, multi-method products. This requires a joint effort of researchers at different stages in their careers, ranging from senior academics to PhD students. Another medium-term goal is to develop proposals for granting structures to award PhDs in Cognitive Sciences at the University of Vienna. The platform builds on historical roots while at the same time combining emerging fields of research with existing strengths. It aims to develop a profile which exhibits Vienna's specific contribution in this field, which is not only capable of responding to future challenges, but—due to its truly interdisciplinary approach—might open up a new approach for Cognitive Sciences.

* We are using the term "Cognitive Sciences" in plural in order to stress the interdisciplinary character which we are following at the University of Vienna.

On an administrative level, the platform aims to establish Cognitive Sciences as a future “official university research focus” (see <http://www.qs.univie.ac.at/index.php?id=12261>). As such, the platform will also identify gaps in existing structures, and face future challenges. By developing a coherent profile, the platform will also be a natural contact point for enquiries concerning Cognitive Sciences from interested bodies (faculties, University advisory board etc).

We propose a comprehensive three-year program in which we outline the activities of the platform. These activities are divided into 4 domains: (1) community building, (2) disseminating & increasing awareness & visibility, (3) incubating, and (4) products. The platform offers an organizational, knowledge, and innovation space for cognitive sciences at the University of Vienna where scientists are encouraged to cooperate, and do joint research. The primary goal will be the constitution of comprehensive interdisciplinary approaches that improve the chances to specify, and through interdisciplinary programs, answer emerging questions in Cognitive Sciences. In a nutshell, the goal of the research platform is to make Cognitive Sciences more visible and more successful at the University of Vienna as an interdisciplinary joint field of research. Such research is present in several faculties, but has so far resulted in only relatively informal structures and has therefore not fully realized the potential of combined research across disciplines. The platform will produce joint research topics leading to publications and research project proposals.

2 Cognitive Sciences: Scientific and Organizational Background

2.1 Cognitive Sciences

Cognitive science (CS) is broadly understood as the “science of the mind”, studying cognitive and affective phenomena in general. It is a rather young interdisciplinary field, which has emerged over the last decades in the US and in Europe (e.g., Bechtel et al. 1998; Clark, 2001; Friedenberget al., 2006; Harre, 2002). It aims at finding models and explanations for a deeper understanding of human and non-human processes of cognition, perception, motor-action, social behaviors, emotional processes, etc. The main characteristic features of this field can be summarized in the following points:

- CS is a an *interdisciplinary* endeavor bringing together diverse disciplines such as computer science/artificial intelligence, linguistics, neuroscience, philosophy, psychology as well as behavioral biology and anthropology/social science, which has become more important in the recent times.
- In contrast to classical “cognitive disciplines” which are mainly based on purely empirical approaches, the use of simulation methods has turned out to be one central

method of this interdisciplinary approach to understand phenomena of (human) cognition, like perception, language, decision making, social processes, etc. (by generating them in simulation experiments).

- Recent findings and developments in, for instance, neuroscience (e.g., cognitive/computational neuroscience) shed new light on old philosophical as well as psychological questions (e.g., mind-body problem, question of consciousness, the qualia problem, the role of language in thinking, the notion of representation, meaning, and knowledge, social cognition, etc.). An interdisciplinary re-evaluation of these concepts (some of them concern the *conditio humana* in a fundamental manner) becomes necessary. Due to its interdisciplinary approach, bridging arts/philosophical questions and natural sciences, cognitive science offers a new chance to tackle these old questions with a new set of concepts and methods.
- Apart from this re-evaluation of these classical concepts, cognitive science has brought about new perspectives on the concept of cognition, knowledge, and culture/social processes: embodiment, situated cognition, dynamical systems approaches to cognition, the role of artifacts in cognition, etc. (e.g., Clark, 2001).
- The field of cognitive science itself is rapidly developing. Since its “birth” in 1956 (Bechtel et al., 1998) CS has already experienced at least three paradigm shifts, entailing modifications in some core concepts (e.g. the concept of knowledge [representation], learning, etc.) as well as changes in the relevance of the different core disciplines (e.g., Varela et al., 1991; Friedenbergl et al., 2006).

Cognition has emerged as a product of evolution; consequently, studies comparing different species will reveal important aspects of its origin and development. Moreover, within human evolution, cognition developed from rather sensory-bound, towards more complex, abstract processes: from basic perceptual processes, through representations of complex real-world scenes, to processes involved in language and abstract thought. Thus, different levels of description have to be distinguished, ranging from representations, over computations to implementations (e.g., Marr, 1982). Cognitive Sciences employ several levels of analysis and methods, such as analyzing behavioral measures in experiments, sensitivities in psychophysics, the neural correlates of behavior, in addition to modelling, simulation, as well as epistemological approaches. The platform will put a special emphasis on disseminating methods in order to provide bridges for jointly answering interdisciplinary research questions.

Cognition encompasses a wide variety of research fields. At the University of Vienna there exist several key areas such as research in visual perception (e.g. Ansorge & Heumann, 2003; Rosenberg et al. 2008, Huber 2005, Leder & Bruce, 2000), social cognition (Huber et al. 2009), language (Fitch, Huber, Bugnyar 2010, Budin 2010b), and knowledge and innovation processes (Peschl, 2007, 2010). Nonetheless, in order to realize its full potential,

the platform will provide a forum for all researchers engaged in Cognitive Sciences in the Vienna region. (For details see 7.2 & 7.3)

Through the participation of four faculties and one center, researchers already active in Cognitive Sciences will cooperate and set up infrastructures for interdisciplinary research activities. Moreover, the platform also provides opportunities for emerging future areas in Cognitive Sciences such as social and cultural cognitions, neuro-cognition, and genetic cognition. Last but not least the platform will provide expertise and competence for those consulting the University of Vienna with questions concerning future developments in these areas.

2.2 Cognitive Sciences - Viennese Tradition and Status at the University of Vienna

The development of a specific profile is rooted in a historical background, but mainly relies on existing research topics that potentially foster interdisciplinary research.

2.2.1 Traditions in Cognitive Sciences in Vienna

Cognitive Sciences comprise research in various disciplines, such as Biology, Psychology, Neurosciences, Philosophy, Linguistics, Computer Science, Anthropology and more recently also Art history and Musicology. The University of Vienna, being Austria's oldest and most distinguished academic institution, hosts all these disciplines; due to this *diversity* it has a comprehensive historical background in areas at the heart of Cognitive Sciences.

At the end of the 19th century the University of Vienna was a central cradle for innovative developments intertwining philosophy, several other humanities subjects and psychology: art history with Franz Wickhoff (1853-1909) and Alois Riegl (1858-1905), musicology with Guido Adler (1855-1941), and philosophy of mind with Ernst Mach, Franz Brentano (1838-1917) and Alexius Meinong (1853-1920). These areas were established in Vienna as academic disciplines often through empirically-based modes of inquiry. The Gestalt-theory was just one of the results of this kind of fertile interdisciplinary discussion, but other examples include the work of Karl Popper (1902-1994) who fostered interdisciplinary thinking in the realm of Cognitive Sciences and Konrad Lorenz (1903-1989) who laid the ground for comparative biology.

As a historical starting point in developing a future profile in Cognitive Sciences, the platform explicitly acknowledges three prominent researchers with strong association to Vienna during the 20th century: Ernst Gombrich (1909-2001), Konrad Lorenz (1903-1989) and Karl Bühler (1879-1963). They serve as role models for the interdisciplinary study of the three year program. The first year program, which stresses the use of eye-movements in the study of art and cognitive psychology, echoes the work of Ernst Gombrich who applied his knowledge

of cognition and Gestalt Psychology in conceiving art history as the science of perceiving an image. The second year's program, in which the platform places particular emphasis on comparative methods and psychophysics, references Konrad Lorenz as a founding figure of comparative science (Lorenz, 1965). Karl Bühler, the first Professor in Psychology at University of Vienna, is the inspiration for the third year of the program, in which methods of studying language and creativity are prominent. Bühler was a Gestalt-Psychologist at the beginning of his career but later developed a theory of communication (Bühler, 1934) that is still prominent in many fields of modern cognitive sciences. The platform will acknowledge the historical contribution of these researchers to modern cognitive sciences by planning three lectures during the program, which are named in their honour (see 4.2 for details).

However, though bound to these historical roots, the program is based on the state-of-the-art research and the strengths which are present in the diversity of methods and approaches in existing collaborations.

2.2.2 Cognitive Sciences at the University of Vienna

Today, the Cognitive Sciences represent one strong field of research at the University of Vienna with a strong emphasis on empirical, mostly experimental, as well as epistemological research. Research groups active in Cognitive Sciences at Vienna comprise specializations in vision (biology, cognitive psychology), in comparative studies and evolution (cognitive biopsychology; cognitive linguistics), social context (cognitive biology, neuropsychology, art history), visual communication (cognitive psychology, art history, philosophy) language (cognitive linguistics) and knowledge studies/technologies and innovation (philosophy, linguistics, cognitive psychology).

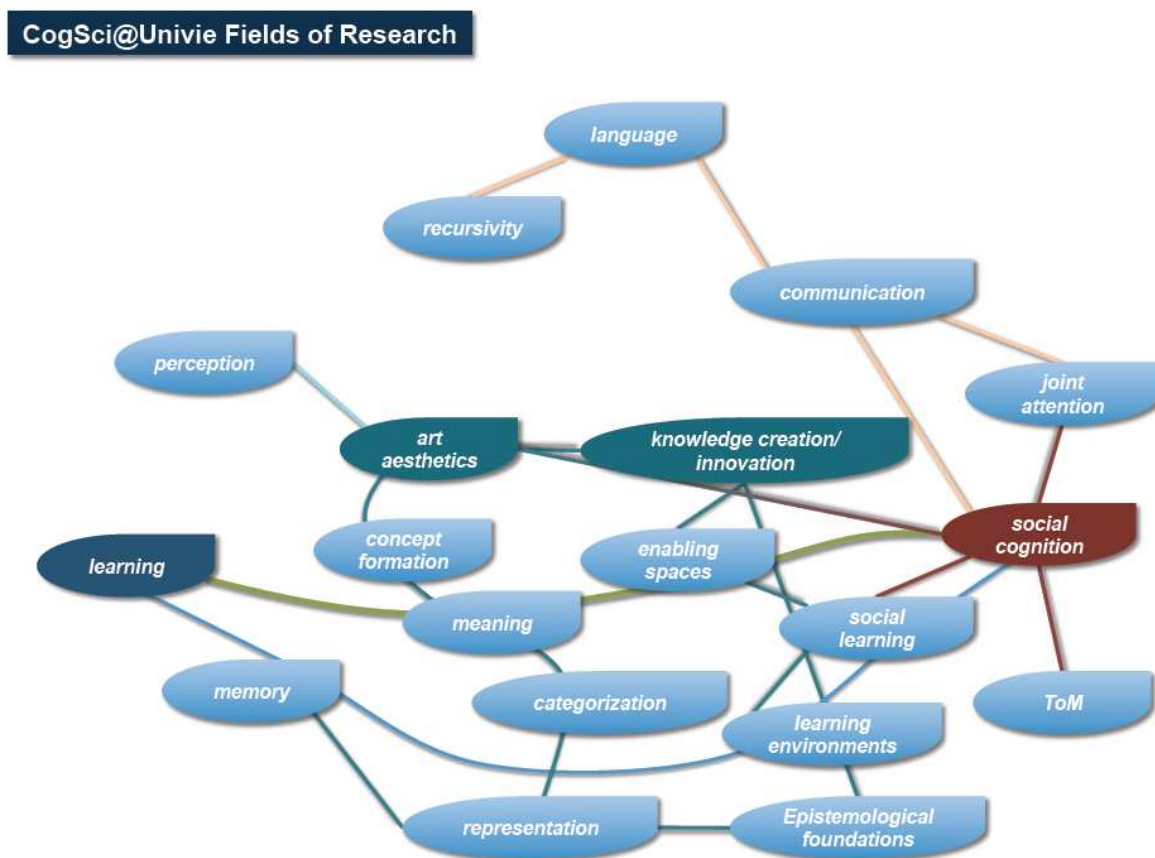
Although the contributing research groups are strong in these research areas, the specific goal of the platform is to provide structures that foster even more interdisciplinary work in an institutionalized and visible framework. Thus, starting from existing individual initiatives as well as informal collaborations, multi-method interdisciplinary research will be facilitated systematically. Therefore, based on existing collaboration, the focus on methods, in workshops and seminars will produce research activities and products on different levels, from jointly supervised PhD students to interdisciplinary grant applications.

Researchers from four Faculties – *Philosophy & Educational Science, Psychology, Life Sciences, Historical and Cultural Studies* - and from the *Center of Translational Studies* are responsible for the platform; however, they see this as a structural means and as an “infrastructure project” to provide access to interdisciplinary methods and tools for all scientists who have interests in the realm of the Cognitive Sciences. Several other researchers who are seen as partners and experts are involved in the platform activities. They will be invited to continue their interests from past initiatives that can be seen as

antecedents of the present platform application. In section 7.3 we provide a list of these researchers as partners of this platform.

In preparing the ground for the present application, several workshops have already been held in 2009 and 2010 with the aim of establishing Cognitive Science as a broader research focus at the University of Vienna. On the initiative of Peschl, Römmer-Nosseck and Zimmermann, around two-dozen researchers met several times in workshops in the context of the IDEE-initiative (<http://id.univie.ac.at/>) called "IDEE workshop Future of CogSci@univie" to establish an exchange of research approaches and to plan for future initiatives such as the present platform. The current application is a direct consequence of this initiative.

The map below gives a rough and consolidated overview of fields in which the participants of the IDEE-initiative are doing research at the University of Vienna:



2.2.3 Recent Developments in the Cognitive Sciences Profile at Vienna

One of the main starting points for the Cognitive Sciences at the University of Vienna was the foundation of the *Austrian Society for Cognitive Science* (ASoCS | <http://www.univie.ac.at/cognition/>) in 1995 by Peschl et al. ASoCS organized several international "New Trends in Cognitive Science" conferences, regular colloquia, publications,

student activities, and acted as the continuous institutional basis for establishing cognitive science at the University of Vienna (and beyond).

One result of ASoCS's activities is the development and successful implementation (2007) of an *interdisciplinary joint masters program* in Cognitive Sciences at the University of Vienna (together with 6 other universities): *Middle European interdisciplinary masters programme in Cognitive Science [MEi:CogSci]* | <http://meicogsci.eu/>). Peschl and colleagues have developed this innovative curriculum in the context of an EU-funded SOCRATES project, in which several participants of the platform have actively been involved from the start.

Moreover, the CogSci@Univie research platform is a coherent consequence of the University of Vienna's recent appointment policy, which over the last five years has clearly strengthened cognitive, empirical research in various fields. A milestone was the founding of a new Department of Cognitive Biology, which was established at the beginning of 2010. It consists of three tightly connected research groups led by Tecumseh Fitch, Thomas Bugnyar, and Ludwig Huber. The research goal is to understand cognition from a biological viewpoint, with a focus on how animals solve real-world problems, such as dealing with conspecifics in daily social life. Communication is studied as a window into social cognition, and experiments are designed that test specific hypotheses developed through an innovative combination of field observations and laboratory work on humans and other animals. In linguistics, various methods are used to study aspects of languages, their acquisition and understanding. Gerhard Budin, an expert in terminology, applies computer simulations but also applied methods such as usability studies. Also, the Center for Translational Studies has put cognition as a priority topic for future developments. Another strong research contribution comes from the Faculty of Psychology. Since 2005, Helmut Leder has established a faculty research focus on psychological aesthetics and cognitive ergonomics. In 2009 Ulrich Ansorge was appointed with his specialization in attention, image science, and eye-movement research. In 2010 Claus Lamm will join the faculty as a professor in cognitive social-neurosciences. In art history, Raphael Rosenberg (appointed in 2009) is one of the very few researchers in the field who runs an eye-movement lab. Christoph Reuter, appointed in 2008 to a professorship in systemic musicology, is building up a psychoacoustic laboratory. Currently the University of Vienna is in the process of making a professorial appointment in computational cognition (a joint appointment between computer science and psychology). The application for this research platform therefore capitalizes on the University's recent employment policy in bringing together researchers from these diverse areas. Thus, in Vienna there now exists a unique combination of researchers, not only with respect to several European traditions in the realm of cognition research, but also with a potential for interdisciplinary collaborations that will make CS an excellent candidate for a successful university focus.

As the CVs of the main applicants show (see 7.2.) broad expertise and experience already exists both in the scientific fields and in developing and implementing the interdisciplinary infrastructure proposed in the present application.

3 Structure and foci for the three-year program

The main applicants (all CVs in Appendix, 7.2) selected three main research topics that not only exemplify how questions in the Cognitive Sciences require radically interdisciplinary research strategies, but also express existing common interests, and the capacities to achieve the platform's goals.

3.1 Methods as Drivers for Interdisciplinary Research

Interdisciplinary research strategies often emerge from questions and phenomena which go far beyond classical disciplinary boundaries, because they are simply too complex to be investigated by a single paradigm and method (e.g., Eigenbrode et al. 2007). Hence, there is a need for, or the challenge of, new methods in order to be able to develop new approaches or even new paradigms (e.g., Kuhn 1970). The strengths of the Cognitive Sciences platform thus consist of its methodological diversity, methodological expertise, and methodological rigor. Studying cognition requires the observation and measurement of behavior. In the implementation of this three year program we therefore disseminate methodological knowledge among researchers at all levels, particularly to young researchers at PhD level. The underlying rationale is that the awareness of methods might shape PhD programs early on and will create interdisciplinary gains for all researchers and groups involved. Through this, the activities of the platform will yield joint interdisciplinary PhD projects. Moreover, as research applications might profit from interdisciplinary multi-method approaches, providing such expertise might also best serve the products (joint research approaches, grant applications for interdisciplinary projects, joint publications) expected from the platform. For these reasons, the platform also aims to place incentives at this interdisciplinary level; for example, by directly offering financial support to encourage young researchers to write interdisciplinary, common research grants (see section 4.3).

The fostering of diversity in methodology is central to the three-year plan. The platform will organize lab-visits and accompanying methods-workshops (see section 4.1ff) where researchers present their methods. These will, of course, be open to all interested researchers.

3.2 Thematic foci

The program for the three-years is organized along three main research foci that represent strengths of already existing research and informal collaborations. They are the starting point

for developing a more comprehensive and institutional framework for joint interfaculty research approaches. In this manner, we seek to use seed money most productively: turning small budgets into visible research results and at the same time develop a sustained Cognitive Sciences research community at the University of Vienna. Each year's thematic research focus will be communicated to a broader audience through a corresponding invited lecture that will be given by a renowned international expert (to be announced): the Gombrich lecture, the Lorenz lecture, and the Bühler lecture, in years 1 to 3, respectively. The lectures are named after three renowned Viennese researchers for their contributions to Art and Cognition, Animal Cognition, and Human Cognition, respectively.

3.2.1 Year 1: Cognition and Art

The first year will specifically focus on the emerging field of Cognition and Art with an emphasis on "*Vision and Art*". Activities of the platform will use the methodology of eye-movements. The method allows the measurement of where people look and the testing of hypotheses about how visual information is gathered and visual phenomenal content is perceived. There are interests from several perspectives in the creation and reception of art (Fitch, von Graevenitz & Nicolas, 2009; Leder, Belke, Oeberst & Augustin, 2004). Art history Rosenberg (Rosenberg, Betz & Klein, 2008) asks questions concerning historical developments in art perception. In Cognitive Psychology, Leder uses a temporally fine-grained complementary perspective, studying the microgenesis of art appreciation and perception within a few seconds, as one form of visual information processing (Augustin, Leder, Hutzler & Carbon, 2008; Leder, et al., 2004; Leder, Tinio, Fuchs & Bohrn, 2010).

In the envisaged research focus "*Cognition and Art*" that is to be carried out in the first year, we will take an even broader perspective by addressing the questions of what makes perception of visual art different from more ecological visual perception under natural conditions. This stance uses the full range of available methodologies in experimental psychology, such as attention research (visual search) paradigms (Becker, Ansorge & Horstmann, 2009) and visual illusions (Ansorge et al., 2010). Activities during year 1 connect to topical foci at the second Vienna Aesthetics Symposium (organized by Leder) in 2009 on eye-movements and art. They will also link to Rosenberg and Leder's ongoing collaboration on the connections between eye movements and perceptual phenomena in art. Fitch and Ansorge will join these collaborations, and together the investigators will study (1) the impact of phenomenal (perceived) qualities on eye movements (e.g., during visual search), (2) the reverse impact of eye movements as causal origins of phenomenal visual illusions, and (3) the hypothesis that the distinction between ecological perception and art perception is partly grounded in the specific way in which art works link perceptual content to eye movements.

In the first year, through lab visits and workshops, the methods of eye-movement measures will be presented as a main focus in order to foster interest and generate projects. As a

consequence, in the first year a Gombrich lecture will be organized as the main event for a broader, non-scientific public audience.

3.2.2 Year 2: Comparative Cognition

In the second year, the topic will be „Comparative Cognition “. Methods for studying animal behavior will be used in comparative cognition experiments with human participants to understand the evolutionary links between cognitive phenotypes. This method has the potential of casting light on recurrent information processing problems encountered by different species during phylogenesis and the resulting genetic underpinnings for the solution of these problems. Fitch, Huber and Bugnyar represent research excellence in this field. Studies of processing of music and language have the potential of addressing issues of conditional logics and sequential implicit reasoning as these processes unfold in parallel to the parsing of the sequential auditory inputs, in which processing of each piece of newly perceived input is modulated by the preceding inputs (Fitch, Huber, Bugnyar, 2010; Huber & Lenz, 1993; Range et al., 2009; Bugnyar, 2008).

The to-be-launched project extends these considerations to the visual domain linking the models and methods of sequential parsing in audition, with processing of sequential visual inputs in complex scenes and art, such as during perception of movies, and videos, and the perception of art in context. One corresponding research project will be carried out by Ansorge and Huber. Regarding face processing, another project is planned by Huber and Leder (related to Huber's FWF-Project P19574; Leder & Bruce, 2000).

In the second year, the platform will organize a Lorenz lecture. Methods in studying animal behavior and comparative approaches to compare cognitive capabilities in different species will be disseminated in lab visits and workshops.

3.2.3 Year 3: Enabling Cognition, Language, and Creativity

During the third year the focus is on „Enabling Cognition, Language, and Creativity“. The topic refers to a variety of fields of cognitive science and the project will use different kinds of methods of language, knowledge creation, and innovation research, such as quantitative and qualitative research methods. There is profound expertise in the field of language research (Fitch et al., 2010) and language technologies (Budin, 2010, Dublin): In continuation of previous and ongoing EU projects (COST A 31, CLARIN, DARIAH, etc.), we will investigate with a hybrid methodology (agent-based simulation and brain imaging) the processes of creating concepts and their lexicalisation. Concept formation and lexicalisation of concepts have been research topics in cognitive psychology, cognitive linguistics, terminology studies, philosophy of science, and information science.

Apart from language technologies another focus is on *knowledge (creation)* and knowledge technologies. Methods specifically emphasized are those from applied epistemology, knowledge technologies/management, (computational) modelling, design thinking, prototyping, socio-epistemological approaches in innovation processes as they are deployed in innovation research (Peschl et al. 2008, 2009). Furthermore, the focus will be on understanding cognition as a situated epistemological process—in this context the concept of interdisciplinary enabling spaces (e.g., Peschl, 2007; Wiltschnig & Peschl, 2008) facilitating innovation, creativity, and knowledge construction will be further developed (theoretically and in various applied fields, such as educational settings or innovation processes). The concept of enabling spaces heavily relies on interdisciplinary cooperation and methods due to the complexity of the research object.

Common research interests already exist between innovation research concerning epistemological and technological approaches (Peschl) and Cognitive Psychology (Leder, & Carbon, FWF P18910). Moreover, research interests in the platform might focus on specific phenomena: For example, Jazz can be seen as a window in which one has to be innovative and which allows the study of the determining dimensions. Fitch and Peschl will explore these issues. Moreover, the platform will discuss measures in creativity in different arts as studied with behavioral, experimental means, plus imaging in the future (Fitch is involved in an application for a research cluster with MUW).

The public event will be the Bühler lecture.

3.3 Embedding These Research Foci into the Institutional Context

Apart from these thematic foci, which are some examples of the interdisciplinary research initiatives in Cognitive Sciences, the research platform plans a variety of measures (see section 4 for details). One mid-term goal is to develop proposals for grants to award PhDs and Post-Docs in Cognitive Sciences at the University of Vienna (see section 4.3). Moreover, we aim to strengthen the institutional integration.

The Platform will develop a profile for Cognitive Sciences specific to the University of Vienna, mainly by disseminating and developing knowledge about methods and approaches in Cognitive Sciences among the participating groups. The platform will provide access to expertise of all contributing researchers and will also prepare the ground for future cooperation with other disciplines within and beyond the University of Vienna. This will be accomplished by strengthening existing links with e.g. the Medical University Vienna, (neurosciences, genetics), with the Vienna University of Technology, etc. Moreover, the project applicants will provide relationships with international partners, by involving them in the program, and by serving as knowledge partners about the Cognitive Sciences profile at University of Vienna. Thus, the initial and future members of the platform will assist in finding

appropriate partners, and support inter-university grant applications with, for instance, the University of Medicine, Vienna.

Within the three year program, beyond the faculties that are directly involved, the platform seeks to build connections with other disciplines, such as computer science, mathematics (algorithms, simulation models), artificial intelligence, imaging sciences, biology, physiology, anthropology with whom informal links already exist; also, beyond the University at the Academy of Sciences, there are the Departments of Acoustic Research, Cognitive Linguistics, Social Anthropology who will be attracted by the platform's activities.

Through its unique combination of participants this program will have potential to act at the forefront of questions that can best be answered using interdisciplinary, multi-method approaches.

4 Structure and Activities of the Research Platform

The activities of this research platform will be arranged around *four lines of actions* which interact with each other and which are embedded in the thematic fields described above: (1) *community building*, (2) *disseminating and increasing awareness & visibility*, (3) *incubating*, and (4) *products*. These lines of actions are each dependent on, and interact with, each of the others. See the figure in section 5 for a comprehensive overview of the planned activities, their interaction and temporal development.

4.1 Community Building

The goal of this line of action is to develop an active interdisciplinary cognitive science community and critical mass at the University of Vienna by providing a communication infrastructure (social, organizational, and technological).

Which concrete measures will be taken?

CogSci@univie Platform Kick-off Event

The goal of this meeting is to further define research topics and identify participants for interdisciplinary work groups. Moreover, in order to prepare the ground for interdisciplinary work, it aims to reveal epistemological concepts and the hidden assumptions of participating disciplines concerning cognition.

Three researchers from different disciplines will plan a small symposium consisting of talks related to one of the topics (3.2.1-3.2.3) in cognitive science, that have so far been identified as common to participants in the platform. In the discussion possible connections will be pointed out and general concepts/terms of cognitive science (representation, cognition,

knowledge,...) will be targeted. The event will be documented and made available to all participants in the platform.

Audience: cognitive science related researches in Vienna; not open to public

CogSci@univie Plenum

The plenum meets once a semester for a four hour working session. The goal of the plenum is to promote the building of the Viennese cognitive science profile by discussing concrete research ideas as outlined in 3.2.1ff and to develop new ideas for promising research collaborations. It also serves to exchange news and report on in the activities of the working groups. It can be seen as a continuation of the IDee workshops and should therefore also provide space for incubating new ideas through open interdisciplinary work. It also serves to coordinate further steps of the platform, like determining the next method workshops.

Detailed description:

- It gathers all CogSci stakeholders/players from the University of Vienna
- “plenum” function and integration + community building
- Reporting on the progress regarding the CogSci@univie Profile (+ deliberation and planning of next steps)
- Joint planning and coordination of future activities of the CogSci@univie research platform
- Time for informal meetings and exchange on possible future joint projects
- Optional: invitation of an external guest/expert: support for developing CogSci@univie Profile (+ possibly extra workshop after this plenum)

In year 2 and 3 the Plenums will also foresee reports of progress in joint research activities.

Lab-Visits and Hands-on Method Workshops

Method workshops will be held every semester (see schedule) and determined in the plenum meetings. They will be open to all researchers involved in the platform activities (internal and external), as well as to PhD students. Method workshops will introduce methods of a certain discipline in cognitive science, thereby providing a very empirical/experiment-oriented way of finding new interdisciplinary collaborations through sharing methodologies. See the sections for possible topics and methods for these workshops (e.g., methods in eye tracking, quantitative methods of behavioral analysis, approaches in EEG, epistemological methods and knowledge technologies, etc.).

These lab-visits will be central for scientific interdisciplinary exchange concerning methods, models, experimental setups, etc. This format serves the goal of community building by

delivering concrete information concerning research methods. Moreover, these visits will provide enough space for informal conversations. Senior and junior scientists will be invited. The main goal is to foster the development of joint projects. Moreover, demand for advanced training of junior researchers (PhD–students) will be identified.

Website

A website will be established for enabling communication, spreading of information, coordinating dates, etc. It will be a low threshold solution offering basic WWW-services. This virtual tool will be embedded and accompanied with a “real world/face-2-face” social community building process (see other points in this section). A joint web-based cognitive science bibliography will be established which will be accessible for scientists and students (e.g., using tools such as zotero.org).

CogSci PhD meetings: integration and Support of PhD-Students from Different Faculties/Departments

This research platform supports CogSci-activities of PhD-students from the participating faculties/departments which are involving at least 2-3 disciplines/departments. The role of the research platform is to initiate and facilitate the organization and integration. However, after the start-up phase these activities will become self-organized autonomous initiatives (such as regular interdisciplinary student meetings, organization of workshops, etc.).

Apart from these activities, CogSci-related PhD-students are, of course, also invited to participate in the respective offerings of this research platform.

CogSci@univie Hub: Coordination and Integration Office/Position

The responsibilities of this coordination and integration position comprise: organizational coordination of the platform; initiating and coordinating communication between groups, departments, and scientists; setting up and running the website; bundling of information; organizing the events; organizing PR-activities; keeping scientists in contact; “scouting” (searching for newly emerging fields, new colleagues, etc.); support in proposal writing; and establishing connections to teaching.

This person will have the function of a *scientific secretary*; he/she should be at pre/post PhD level with a background in cognitive science and should have experience in organizing interdisciplinary groups of scientists, grant applications, and should be involved in research.

4.2 Disseminating & Increasing Awareness & Visibility

The goal of this line of action is to increase the visibility of Cognitive Sciences at the University of Vienna and beyond. By offering scientific as well as public events, cognitive

science will be made publicly known as a major interdisciplinary field of research at the University of Vienna with a specific research profile.

CogSci@univie Website

The website serves primarily for internal communication but also for dissemination purposes it will include, displays of the activities of the platform and of cognitive science@univie, a calendar of relevant events, a list of participants, their focus of research, and their projects (“CogSci yellow pages”), eventually a regular electronic newsletters, etc. and a joint bibliography.

Organizing Symposia

We are planning to organize one one-day symposium per year (starting with the second year); the topic will emerge out of the working groups and the actual cooperation between participating scientists. The goal of these symposia is to make visible (i) cognitive science (in general) at the University of Vienna, (ii) the research done the University of Vienna, and (iii) to sharpen the development of a University of Vienna specific CogSci profile.

Cognitive Science Lecture@univie

Once a year we are planning a *CogSci@Univie Lecture* (due to commemoration days in 2011 (Gombrich) and 2013 (Bühler) we could refer to them as Bühler, Gombrich and the 2012 Lorenz lectures. These stress the connection between the contemporary profile and its historical forerunners, and will take place as part of a public evening event. Lectures will aim for cooperation with the very prestigious “Wiener Vorlesungen” and for lecturers (not yet determined) like Giluio Tononi, Tanja Singer, or Christoph Koch.

Besides these lectures there will be a lecture series which is organized in the context of the MEi:CogSci program every winter term.

4.3 Incubating

The goal of this line of actions is to incubate new ideas, concepts, and a University of Vienna specific research profile. These activities will result in concrete projects, proposals, etc. (see section on products).

Incubation Lab-Visits and Hands-on (Method) Seminars/workshops

See section 4.1 for details.

“CogSci@univie Incubation Think Tank”—developing a University of Vienna specific CogSci profile and a CogSci@univie doctoral program

Through a series of workshops such an *innovative explorative format* will be initiated. In these workshops basic concepts of cognitive science (such as representation, embodiment,

learning, issues concerning knowledge in individual cognitive vs./and cultural systems, etc.) are reflected at the level of (paradigmatic) premises. The goal is to use these outcomes as a foundation for achieving a *truly interdisciplinary understanding* of these concepts and to develop them further. This is the place where it is possible to ask profound questions, to question assumptions and basic concepts in a “safe space”; a space of trust offering some freedom and which is not primarily goal- and efficiency-oriented. An “enabling space” (Peschl 2007; Wiltschnig & Pesch, 2008) for exploring non-mainstream and emerging fields and concepts in cognitive sciences. This is the crystallization point for further activities leading to concrete “products” (see section below).

Apart from being a meeting place for work groups on the specific thematic fields of the particular year and on emerging fields, with the intention is that this format will generate the following results: (i) the *CogSci@Univie specific profile*, (ii) a suggestion for an interdisciplinary *CogSci PhD-program* at the University of Vienna, and (iii) concrete interdisciplinary work and cooperation on the research focus of the particular year (e.g., leading to suggestions for relevant topics for the symposia).

Seed and Pilot Money for Innovative Interdisciplinary Post-Doc- and “Jung Habilitierte”-Research Projects

An important goal of the platform is the triggering of new interdisciplinary research ideas. We expect such ideas in interdisciplinary collaborations, especially among younger researchers who do not have their own research budgets. Often enough such ideas need some seed money for pilot experiments before researchers get to the stage of applying for national (FWF etc.) and international (ERC etc.) grants.

Thus, part of the funding will be used to sponsor concrete interdisciplinary project applications by at least two young researchers, at least at post-doc level. We plan to sponsor up to 2-3 project applications per year based on a committee evaluation and recommendation. We plan to grant up to 6.000 EUR per project for such promising research proposals.

CogSci PhD Meetings

See section 4.1.

4.4 Products

Various products will be developed:

Joint Research Projects

These consist of joint student and PhD research, mainly supervised by senior researchers. These projects will be discussed and developed in the CogSci PhD meetings.

Interdisciplinary Research Grant Proposals/Applications

These will be developments based on joint research projects; eventually competing for the seed money. The goal is to produce competitive grant applications.

Joint Publications

Joint publications are expected to be another result of inter-disciplinary cooperation at all level of participants; Publications might also be the result of collaboration with invited speakers at symposia or the annual lectures.

Proposal for a doctoral program/school in Cognitive Sciences at the University of Vienna

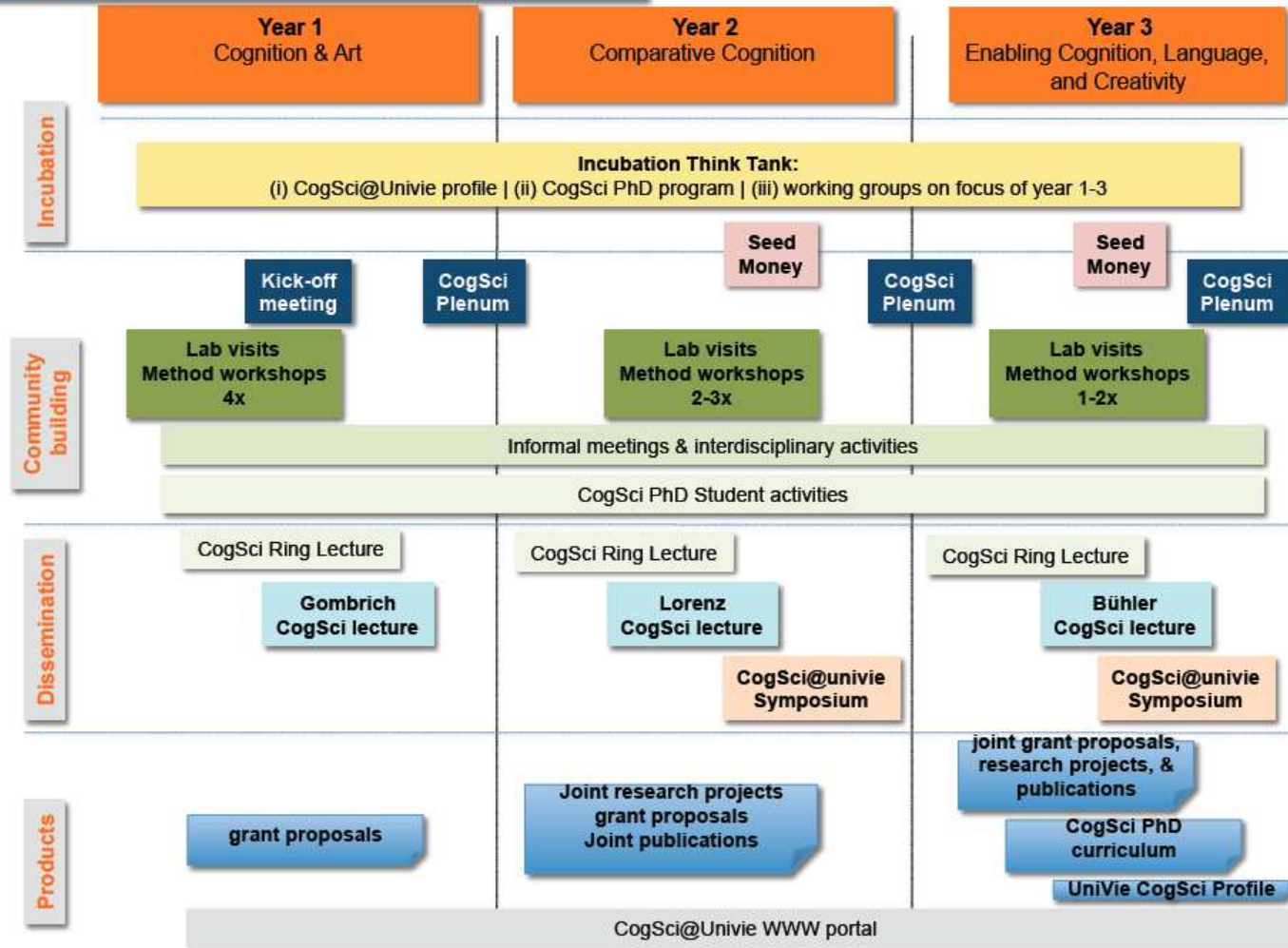
Through the activities of the platform (“Think Tank”) we also aim to develop a proposal of how PhDs in Cognitive Sciences might be granted in the future, eventually resulting in a proposal for a doctorate program.

Apart from these “concrete products” a University of Vienna specific *research profile for the Cognitive Sciences* will be developed and supported by a *critical mass of cognitive science researchers* being itself a “product” of these three years of moderated interdisciplinary activities.

5 Schedule of Planned Activities and Organizational Issues

This section gives a comprehensive overview of the activities during the 3 years program—the timeline is shown in the figure below.

CogSci@Univie Research Platform Schedule



5.1 Year 1: Cognition and Art

5.1.1 Overarching Goals and Activities

During year 1 the platform needs to be initiated by appointing an operative coordinator who will get all activities planned and started. These comprise the following goals and activities:

- Set up of research platform and the CogSci Platform office
- Planning and organizing the research activities in detail
- Set up of the website (by the operative coordinator, with the support of all participants) with regular updates
- Organization of yearly CogSci Plenum, starting with a kick-off event
- Set up of a committee to evaluate research proposals by young researchers
- Laboratory visits
- CogSci-community building (see description above)

5.1.2 Focus Theme Activities

The focus theme of the first year will be *Art and Cognition*. Activities during this year will encourage the exploration of further research questions and potential collaborations. Method workshops will place a particular focus on methods relevant for this emerging field.

A public “Gombrich Cognitive Science Lecture”, featuring a highly renowned researcher in the field and one corresponding senior researcher, will take place as dissemination activity. In order to gain maximum visibility, the platform will seek cooperation with the “Wiener Vorlesungen” (Vienna lectures), which are presented by the city of Vienna (MA18).

5.1.3 Products

CogSci@Vienna Website

Activities as described above with a strong focus on methods.

5.2 Year 2: Comparative Cognition

5.2.1 Overarching Goals and Activities

During year 2 the following activities will take place:

- yearly CogSci Plenum

- a first call for research proposals of young researchers
- start of the development of a “University of Vienna CogSci profile”
- laboratory visits
- ongoing information and CogSci-community building
- ongoing updating of the website

5.2.2 Focus Theme Activities

The focus theme of the second year will be *Comparative Cognition*. Activities during this year will encourage the exploration of further research questions and potential collaborations. Method workshops will place a particular focus on methods relevant for this field.

Towards the end of the year a symposium will take place.

A public “Lorenz Cognitive Science Lecture”, featuring a highly renowned researcher in the field and one corresponding senior researcher, will take place as a dissemination activity. In order to gain maximum visibility, the platform will seek cooperation with “Wiener Vorlesungen” (Vienna lectures), which are presented by the city of Vienna (MA18).

5.2.3 Products

CogSci@Vienna Website

Activities as described above with a strong focus on methods.

Awarding successful young scientist research proposal

CogSci@Vienna Symposium

Joint publications

5.3 Year 3: Enabling Cognition, Language, and Creativity

5.3.1 Overarching Goals and Activities

During year 2 following activities will take place:

- yearly CogSci Plenum and platform closing event
- a second call for research proposals of young researchers
- development of a “University of Vienna CogSci profile”
- laboratory visits
- ongoing information and CogSci-community building

- ongoing updating of the website

5.3.2 Focus Theme Activities

The focus theme of the second year will be *Enabling Cognition, Language, and Creativity*. Activities during this year will encourage the exploration of further research questions and potential collaborations. Method workshops will place a particular focus on methods relevant for this field.

Towards the end of the year a symposium will take place.

A public “Bühler Cognitive Science Lecture”, featuring a highly renowned researcher in the field and one corresponding senior researcher, will take place as a dissemination activity. In order to gain maximum visibility, the platform will seek cooperation with the “Wiener Vorlesungen” (Vienna lectures), which are presented by the city of Vienna (MA18).

5.3.3 Products

CogSci@Vienna Website

Awarding second successful young scientist research proposal

CogSci@Vienna Symposium

CogSci@Vienna Profile

Joint publications

5.4 Governing Structure of the Research Platform

The CogSci Platform will be led by a steering committee comprising the applicants. The goal is to follow a bottom-up emergent strategy: i.e., to involve the participating scientists in a dialogue where relevant research questions and projects are developed and through which a CogSci@Univie research profile will emerge.

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