

Interdisciplinary workshop for young researchers
2nd Call for papers

Linking language to motor concepts

Cognitive correlates of grasping actions

Organizers Juliane Fink and Timo Ahlers, University of Vienna – in cooperation with the “Austrian Centre for Digital Humanities (ACDH)”, Austrian Academy of Science and the Cognitive Science Research Platform, University of Vienna

Date Friday, 10th of June 2016

Location Austrian Academy of Science, Wohllebengasse 4, 1040 Vienna

Funding University Office for Research Services and Career Development, University of Vienna

Keynotes

- David Peeters, Max Planck Institute for Psycholinguistics, Nijmegen (<http://www.mpi.nl/people/peeters-david>), Keynote: “The power of pointing in linking language to the world” (see abstract below)
- Markus Vincze, Automation and Control Institute (ACIN), Faculty of Electrical Engineering and Information Technology, Technical University of Vienna (<http://www.acin.tuwien.ac.at/institut/mvincze/>), Keynote: “Human and Robot Object Grasping”

Considerable work has been done concerning the link of language to other cognitive domains, in particular motor cognition. In this interdisciplinary workshop, we aim at bringing together young researchers (including, but not limited to researchers from the University of Vienna) to discuss their work with experts from various fields. We particularly would like to encourage young researchers from the cognitive sciences: linguistics, neuroscience, artificial intelligence, anthropology, philosophy and psychology who have a focus on the topic of linking language to motor cognition.

Workshop topics include (but are not limited to):

- empirical and theoretical approaches to language and to motor cognition in the fields of linguistics, neuroscience, artificial intelligence, philosophy, psychology, anthropology
- cognitive mechanisms involved in the relation between the language system and the conceptual system (in particular motor cognition) such as *eye-hand-coordination*, *tactile perception*, *motor-concept variation in action verbs*, *motor planning*, *object detection*...
- the production, perception and understanding of (referential) language and motor gestures: e. g. *pointing*, *grasping*, *touching*...

We solicit abstracts for short input presentations of 20 minutes from PhD students of different disciplines. We would particularly like to encourage young researchers from Vienna to participate as speakers. The presentations will be held in focus groups with ample room for discussion and constructive interdisciplinary feedback on the individual PhD projects. We also invite researchers and students with an interest in the topic who do not give a presentation!

Abstracts for presentations (one page) and workshop **registrations** (without presentation) may be submitted by sending an informal email to the organizers (juliane.fink@univie.ac.at; timo.ahlers@univie.ac.at).

The deadline for abstract submission is **Mai 15th, 2016**.

Abstract (keynote 1)

The power of pointing in linking language to the world

David Peeters, Max Planck Institute for Psycholinguistics, Nijmegen, The Netherlands

In everyday human communication people often refer in speech and/or gesture to entities in their immediate environment, thereby expressing their communicative intentions and shifting their addressee's attention to a particular object, person or event. The neural and cognitive mechanisms supporting such basic multimodal communicative actions, both from a production and a perception perspective, have remained largely unclear. In this talk I will discuss recent empirical findings that suggest that pointing out an object for one's addressee is a deeply social and multimodal phenomenon. More specifically, I will show that 1) people tailor the exact kinematics of their pointing gestures to the informational needs of their addressee, 2) whenever it is unclear to an addressee which specific object a speaker refers to, the mentalizing system is recruited in an attempt to converge on a jointly attended object, and 3) spatial demonstratives like *this* and *that*, which are often used with concurrent pointing gestures, are interpreted as a function of the location of a referent inside or outside the physical space that is psychologically shared between speaker and addressee. Together, these findings contribute to a better understanding of the complex interplay between action, attention, intention, and language in the production and perception of communicative acts core to human interaction.

Abstract (keynote 2)

Human and Robot Object Grasping

Markus Vincze, Automation and Control Institute (ACIN), Faculty of Electrical Engineering and Information Technology, Technical University of Vienna

Neurophysiological studies show that human grasping is executed in phases with clear links between information for perception to drive the hand motions. Attempts in robotics did not succeed yet in a similarly and smooth approach. However recent advances in visual perception make it more and more possible to execute difficult grasping tasks such as clearing a pile of objects.