CEU CENTRAL EUROPEAN UNIVERSITY

Modelling Self on Other (MOSEO)

ABSTRACT BOOK

Budapest, May 18-20, 2015

Venue: CEU, Oktober 6 Street 7, Room 102

Organized by the CEU Social Mind Center and the

Max Planck Institute for Human Cognitive and Brain Sciences

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Abstracts

(in order of presentation)

Monday session

Historical and systematic views on conceptual issues pertaining to self/other relationships

Commentator:

DAN SPERBER

French Centre National de la Recherche Scientifique, France; International Cognition and Culture Institute, France; Social Mind Center, Central European University, Hungary

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Self & Other: Cognitive architecture, evolutionary function, and development

PETER CARRUTHERS

Department of Philosophy, University of Maryland, USA

There are three distinct questions one can ask about the relations between self-knowledge and other-knowledge. (1) Are the mind-brain systems involved in each the same, distinct, or partly overlapping? I argue that the systems are the same. There is no evidence of dissociation, but much evidence of confabulation about current mental states. This suggests that self-knowledge is just self-directed mindreading, relying on sensorily-available cues (not just behavior and context, but also visual imagery, inner speech, etc.). (2) Did capacities for metarepresentation evolve initially for social or for metacognitive purposes? I argue that they likely evolved for social purposes. There is no evidence of native metacognitive abilities in humans, whereas evidence of metacognition in creatures that lack equivalent forms of mindreading is unconvincing. (3) Do capacities for self-knowledge and other-knowledge emerge together in development, or does competence in the one precede (and bootstrap) competence in the other? In light of my answers to (1) and (2), I suggest that initial core competence is the same for both, but specific advances may depend on learning that uses either self-knowledge or other-knowledge.

Are Infant Interpreters Dennettians?

TAD ZAWIDZKI

Mind-Brain Institute, George Washington University, USA

Debates about how best to characterize the socio-cognitive capacities revealed in recent "looking time … violation of expectation" studies on pre-verbal human infants largely recapitulate mid-Twentieth Century philosophical debates about our mature concepts of mental states. The failure of the Rylean program in 1950s philosophy of mind gave rise to the currently widely accepted view that mature concepts of mental states are akin to theoretical posits of concrete, unobservable, causal factors within agents, responsible for their behavior (Sellars 1957, Armstrong 1993, Lewis 1972). Similarly, most developmental psychologists argue against behaviorist interpretations of infant interpretive capacities, and in favor of the view that infants deploy mature concepts of mental states: concrete, unobservable, representational states, causally responsible for agent behavior. This is the default position for both "theory-theorists" and "simulation-theorists". The latter debate presumes that these alternatives are exhaustive. However, as with the earlier, philosophical debate, there is a third alternative: Daniel Dennett's proposal that interpretation consists not in positing concrete, unobservable, causal factors with mentalistic properties, but rather, in situating observed bouts of behavior in a framework encoding norms of instrumental rationality, relating behavior to abstract concepts like "goal", "being informed by", and "efficient means". In this talk, I argue that, although the recent empirical evidence seems to rule out various crude behaviorist proposals, it cannot choose between the hypothesis that infants posit concrete, unobservable factors in interpretation, and the hypothesis that infants are Dennettians. I also suggest some reasons why these two alternatives are very difficult to tease apart experimentally. It is more likely that this issue can be settled only on the basis of broader, background, theoretical commitments, like the overall cognitive architecture of the human brain, or the ecological plausibility of the alternatives.

Autonomy and Interaction

SHAUN GALLAGHER

Department of Philosophy, University of Memphis, USA

On the standard approaches to social cognition that focus on individualistic mechanisms (theory-of-mind mechanisms or mirror neurons) the issue of autonomy is easily resolved. In contrast, on more interactive models, and on those self-from-other–models that make self and self-understanding dependent on intersubjective and social processes, autonomy looks problematic. I'll defend a relational autonomy view and argue that there is something like a double autonomy at work in social interaction -- an autonomy of the individual that is necessarily relational, and an autonomy that belongs to the interaction itself.

Functional relationships between self-knowledge and -understanding and other-knowledge and -understanding

Commentators:

STEVE BUTTERFILL

Department of Philosophy, University of Warwick, UK

PIERRE JACOB

Institut Jean Nicod, Paris, France

Roots of Subjectivity

WOLFGANG PRINZ

Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany

In this talk I argue for an import theory of subjectivity and consciousness. Unlike the mainstream view which claims that we export, as it were, our naturally given subjectivity from self to others, import theory claims that we import subjectivity from others to self, i.e. that we model ourselves (or, our selves) after others. First, I discuss what subjectivity means, where it comes from, and what it may be for. Second, I outline how import theory works and why we should go for import rather than export. Third, and finally, I briefly discuss what a research agenda for testing import theory requires.

Consciousness and the Social Brain

MICHAEL S. A. GRAZIANO

Department of Psychology, Princeton University, USA

What is consciousness and how can a brain, a mere collection of neurons, create it? In my lab we are developing a theoretical and experimental approach to these questions that we call the Attention Schema theory. The theory begins with our ability to attribute awareness to others. The human brain has a complex circuitry that allows it to be socially intelligent. One function of this circuitry is to attribute a state of awareness to others: to build the construct that person Y is aware of thing X. In our hypothesis, the machinery that attributes awareness to others also attributes the same property to oneself. In the theory, attributing awareness to oneself or to others serves a specific use. We suggest that awareness is a crude model or representation of something physically real. The real item is attention, the brain's data-handling method of focusing resources on a limited set of signals. In this proposal, awareness and attention are dissociable. Attention is a mechanistic process of signal enhancement. Awareness is a crude, sometimes inaccurate, internal model of attention. The semi-magical, physically incoherent properties that humans typically attribute to awareness are a product of the inaccuracies in that model. This theory may be able to explain the phenomenon of awareness and the mythology and irrational intuitions that surround the topic. The theory may also provide a basis for building consciousness into intelligent machines.

Consciousness: The Radical Plasticity Thesis

AXEL CLEEREMANS

Consciousness, Cognition & Computation Group (C03), Center for Research in Cognition & Neurosciences (CRCN), ULB Institute of Neurosciences (UNI), Belgium

Starting from the radical idea that consciousness is something that the brain learns to do rather than a static property associated with some patterns of neural activity and not with others, I explore the links between theory of mind, self- awareness, and perceptual awareness. Considering first the link between self-awareness and perceptual awareness, I suggest, congruently with the Higher-Order Thought (HOT) Theory of consciousness developed by Rosenthal, that first- order representations are conscious if and only if they are targeted by appropriate higher-order representations, that is, metarepresentations. The main functions of such metarepresentations are (1) to redescribe the target first-order representations in such a way as to explicitly indicate mental attitude, and (2) to subserve prediction-driven control mechanisms. Crucially, (1) such metarepresentations do not need to be conscious themselves (as in HOT), and (2) they emerge over training and development as a result of unconscious learning and plasticity mechanisms. Metarepresentations thus form the basis for self-awareness because they enable agents to â€œknow that they knowâ€, that is, to be acquainted with the geography of their own representational systems. I illustrate these arguments with implemented computational models (connectionist networks) applied to different experimental paradigms.

Next, I turn to the link between self-awareness and theory of mind. The main argument here is that developing infants continuously attempt to predict not only the consequences of their actions on the world, but also the consequences of their actions on other agents. But there is a crucial difference between interactions with the world and interactions with other agents: Understanding the reactions of the latter, unlike the former, requires assuming the existence of hidden, unobservables states. Thus, when one learns to interact with other agents, one also forms mental models of the internal states of those other agents. But this is the same prediction-driven process as involved in forming metarepresentations of one ownâ€™s mental states. There is thus a direct link between theory of mind and self-awareness, a point that was forcefully argued by Carruthers. Hence we bridge the gap from theory of mind to perceptual awareness through the joint involvement of tangled, prediction-driven, learned interactive loops that make it possible for agents to better anticipate the consequences of their actions.

Why Me? Explicit Self-Projections: Reasons and Resources

RADU BOGDAN

Cognitive Studies Program, Department of Philosophy, Tulane University, USA

Three kinds of mental selves are identified – the I-self (author of thoughts), the mine-self (owner of thoughts) and me-self (the target of one's own thoughts). The analysis focuses on the reasons for and the capacities required by me-thoughts or projections and the me-self they implicitly define. Best exemplified by autobiographical memories and self-ascriptions of attitudes (beliefs, desires), the capacities for me-projections are shown to develop rather late in childhood in response to strong and persistent sociocultural and political (competitive, prudential, vigilant) reasons. The resulting me-self is a robust yet virtual mental hybrid that combines the internal first-person evidence of the I-self and mine-self with inferred dimensions, such as perspective, suppositional stance and metarepresentation, first ascribed to other minds.

Developmental relationships between self- and other-understanding

Commentator:

KEVIN O'REGAN

Laboratorie Psychologie de la Perception, Université Paris Descartes, France

The Emergence of Self Knowledge

ANN BIGELOW

Department of Psychology, St. Francis Xavier University, Canada

Self knowledge begins with infants' awareness of the connection between self actions and the consequences of those actions. This connection is most easily discovered during social interactions, resulting in others playing a prominent role in infants' development of self knowledge. The way others engage with infants affects how infants understand both themselves and other people. Research explores infants' capacity for such learning and how individual differences in infants' most familiar others affect this discovery.

The ontogeny of self and others: Individual variability and continuity of perception and action in infancy

MORITZ M. DAUM

Developmental Psychology: Infancy and Childhood, Department of Psychology, University of Zurich, Switzerland

The sensitivity for self and others is a fundamental skill in everyday life. Any engagement in cooperative and communicative activity within a dynamic environment requires the correct interpretation and prediction of others' as well as the appropriate control of one's own behaviour. One important question within the field of social-cognitive development is how the perception of others' and the performance of own actions are related. The relation is in particular interesting from an ontogenetic perspective, because during the first months of life, infants are about to develop both perception and action skills. It is thus considered possible to disentangle the relative contributions of perception and action for the development of a mutual link. However, there is an ongoing debate about the temporal order and functional relation of perception and action in development, thus whether infants have to be able to perform an action before they can understand it or vice versa. In my presentation I will try to shed more light on this controversy by emphasizing the following two aspects: First, in order to tap the relation between perception and action, comparable measures that tap similar cognitive mechanisms need to be used. Action perception involves a number of component processes that differ in their requirement to predict future action states, prediction being one of the core aspects of action production. Second, individual development does not necessarily increase linearly for perception or for action, but instead changes dynamically. These non-continuous changes substantially affect the relation between action and perception at different measuring points and the respective direction of causality. Together, this suggests that research on the development of perception and action and their interrelations needs to take into account individual variability and continuity.

Representing Self and Others as Individual Persons: The developmental role ostensive communication and rigid reference

GYÖRGY GERGELY

Cognitive Development Center, Department of Cognitive Science, Central European University, Hungary

By 2-years of age normally developing infants possess stable referent concepts for their Self and (familiar) Others as Individual Persons. Such person representations specify individuals as particular social intentional agents who retain their identity over space and time and can be re-identified and differentiated from other agents through person-specific properties attributed to them.

In contrast, I'll present some puzzling new results suggesting that while younger preverbal infants before their first year can also interpret and reason about goal-directed intentional actions and represent the causal and intentional agents generating them, they nevertheless fail to represent the identity of the particular source agent as a specific and re-identifiable individual.

What are the developmental determinants and preconditions that induce young infants to shift from representing particulars to representing individuals? I shall speculate that early social experience involving ostensive communication and rigid reference in discursive contexts to identify the self and/or other social agents them as particular and re-identifiable individuals may play an important causal role in establishing the representation of mutually identifiable and co-represented individual persons with enduring individuating properties including physical features, dispositional traits, or selective social obligations and responsibilities.

To support this hypothesis I shall present two lines of recent studies with 12-month-olds where interpreting interactive episodes as ostensive communicative prosocial acts induced the individuation and person-specific representation of the recipient agent: as when turn-taking interactions cued ostensive communicative information transfer (Tauzin and Gergely, in prep., Téglás and Gergely, in prep.), or when asymmetric object transfer interactions cued altruistic provision of valuables (as in 'giving object to' – but not in 'taking object from' interactions) (Tatone and Csibra, 2015).

Posters

(in alphabetical order by title)

Poster abstracts

14-month old infants represent others' beliefs about the number and identity of objects
Dora Kampis & Ágnes M. Kovács

P1

Infants' understanding of others' beliefs has been investigated through a wide range of tasks. Recently it was proposed that infants' mindreading capacities are limited to beliefs about object locations, and do not extend to representing beliefs regarding object identity or numerosity (Butterfill & Apperly, 2013). We tested whether 14-month-olds show sensitivity to another person's belief regarding the number of objects in an opaque box. We used a manual search paradigm where infants search longer if they think there is still an object present (Feigenson & Carey, 2003). Infants saw a scene where 1 (in Study 1, 3 and 4) or 2 (in Study 2) objects were put into a box by Experimenter 1 (E1). Then a further object was added (Study 1), one was taken out (Study 2), exchanged to another object (Study 3), or transformed into another appearance by Experimenter 2 (E2). During this E1 could be present (True Belief condition) or absent (False Belief condition). Finally, E1 took out one object from the box. Thus, in the end, E1's belief about the number of objects either corresponded to the child's knowledge (True Belief), or differed from it (False Belief). We measured how long infants searched for an object. Results show that search times were influenced by the belief of E1 regarding the number of objects [0/1] remaining in the box. This suggests that infants successfully tracked the other person's belief when it involved multiple objects. Moreover, infants took into account the identity of objects involved.

After the point: Developmental changes in allocation of attention to locations, objects, and novelty

Ramenzoni & Liszkowski

P2

It has remained contentious what infants encode when they follow others' points, and how infants allocate attention afterwards. Research suggests that infants are biased to expect and attend to objects following others' points or gazes (Csibra & Volein, 2008; Yoon et al., 2008), although infants also encode the locations to which their attention is directed (Samuelson et al., 2012; Saylor, 2004). Research also suggests that when a cue has ceased, infants' attention orients to novel (previously un-cued) stimuli (Reid & Striano, 2005); however pedagogy and cultural learning theories would predict selective attention to previously cued objects (see also Okamoto-Barth et al., 2011). The current study tested infants' encoding of locations versus objects, and novelty versus social learning responses. We tracked 10- and 14-month-olds' eye movements as they watched an actor point to one of two objects. At test the actor disappeared and either the objects remained, disappeared, or were swapped. 10-month-olds attended in all cases longer to the un-cued side – their allocation of attention followed a novelty response, and was mainly based on location information. 14-month-olds attended longer to the cued side when the objects remained or disappeared –their allocation of attention was driven by the social cue, not novelty. When objects were swapped, 14-month-olds attended longer to the un-cued side containing the previously cued object, demonstrating a preference for object versus location encoding. Findings reveal developmental changes from location to object processing; and from novelty responses to social learning between 10 to 14 months, perhaps relating to infants' concurrent increase in sustained social interactions.

Do you Believe in Mozart? - The Influence of Beliefs on Representing Joint Action Outcomes

Thomas Wolf, Cordula Vesper, Natalie Sebanz and Günther Knoblich

P3

Actors in joint action situations are able to represent the joint outcomes of their actions [1].

However, it is not clear on what level these representations of joint action outcomes can be influenced. In the present study, we used a piano paradigm to investigate the influence of belief on joint outcome representations and interpersonal coupling. We tested 8 pairs of adult piano novices in a within-subjects 2 x 2 design with the factors Belief (Together, Separate) and Key (Same, Different). In the Belief condition Together, participants were told that the melodies were intended and composed to be played together as duets. In the condition Separate, participants were told that the melodies were not intended to be played together. All 24 melody-sets were generated by a python script and followed the chord progression I-IV-V7-I. In 12 melody-sets, the melodies were in the same musical key. In the other 12 melody-sets, the musical key within the set differed. We predicted a significant difference in the strength of the interpersonal coupling in the Together condition, but not in the Separate condition. Preliminary data analysis reveals a significant interaction between the two factors suggesting an effect of beliefs about the composer's intentions on joint outcome representations and interpersonal coupling.

[1] Vesper, C., Butterfill S., Knoblich, G. and Sebanz, N. 2010. A Minimal Architecture for Joint Action. Neural Networks, 23, 998-1003.

Eye-like contrast polarity and communicative context support processing gaze-shifts in both human infants and adults

Mikołaj Hernik & Gergely Csibra

P4

Gaze perception may appear very different in human adulthood and infancy. Adults can perceive gaze direction in static stimuli by relying on the eye's typical luminance contrast (dark pupil / light sclera). In infants sensitivity to gaze direction is limited to dynamic gaze-shifts presented in ostensive communicative context and it is not known whether luminance contrast plays a role. Despite these differences, we hypothesized developmental continuity of gaze processing mechanisms. In a series of studies using a novel spatial-cueing paradigm we tested whether the same factors are critical for perceiving gaze-shifts in six-months-old infants and adults. On each trial, a target, randomly presented on one side of the screen, was preceded by a non-predictive central apparent-motion cue (a light and a dark square, swapping locations). For different groups of participants we manipulated whether each trial was accompanied by an auditory ostensive signal ("Look!" uttered with infant-directed prosody) or not. In both populations we found faster initiations of saccades towards the target when its location was congruent with the movement direction of the dark – rather than the light – square. Moreover, in both populations this pattern of saccadic-reaction times depended on the presence of ostension (although ostensive audio was not always necessary to elicit the effect in adults). These results suggest common mechanisms of gaze-direction perception across ontogeny. This is the first study to document a false positive, where gaze perception is induced and guided by ostensive signals, motion and contrast polarity rather than face-like and eye-like features.

Gullible's Travel: Credulous Infants Become Very Credulous Toddlers

Olivier Mascaro & Ágnes Melinda Kovács

P5

We report studies revealing some of the developmental origins of human trust in communication. We find that from their second year of life, infants are surprisingly reliant on communication, even when it conflicts with their previous perception. Moreover, contrary to the view that children become more skeptical with age, trust in communication increases during toddlerhood.

In Study 1, 15-month-olds have to find a toy hidden under one of two buckets. They first see where the toy is hidden, and later an informant tells them that the toy is in the other bucket. Contrary to what adults would do, children trust communicated information rather than their past perception, even when they have evidence that the communicator's belief about the toy's location is false. Controls indicate that children do not agree with the informant just to please her, and rather genuinely believe her.

Study 2 shows that human's trust in communication increases during the second year of life. In a setting identical to Study 1, 24-four-month-olds trust communication even more than 15-month-olds.

Together, these results suggest that human infants are willing to discard the obvious in favour of what is communicated to them. This strong trust in communication is present from children's second year of life, and further develops during the toddler years. Increased communicative abilities and opportunities to learn from others could justify the "Trusting Twos", a developmental stage of heightened trust in communicated information.

How People Predict Others' Economic Choice: The Simulate-and-Adjust Model and an Investigation of Beliefs in Dictator Games

Andras Molnar, Christophe Heintz

P6

We propose a cognitive model that describes how people form beliefs about others' behavior in economic interactions. According to the model people first simulate the partner's choice: They take the perspective of their partner and imagine the decision that they would make. People then adjust the outcome of this simulation in view of their beliefs about others' comparative prosociality. To test the model we elicited participants' beliefs about others' choice in modified dictator games. Our results support the simulate-and-adjust model: First, we show that people predict others' social choice by taking into account the incentives that others face and by assuming that others have prosocial preferences. Second, the consensus effects we observe are consistent with the assumption that people simulate their own behavior when they predict others'. Finally, we observe a remarkable heterogeneity in beliefs and a systematic difference between beliefs and behavior, which reveal a subsequent adjustment phase.

Level-1 Perspective Taking as Spatial Cueing?

John Michael, Thomas Wolf & Jakob Hohwy

P7

In this study, we explored the role of spatial cueing in level-1 perspective-taking. Specifically, we investigated the question as to whether the effect observed in Dana Samson's (2010) influential paradigm may be driven in part by the type of spatial cueing mechanism observed in various versions of the Posner paradigm. In order to do so, we adapted the "double-cueing" version of the Posner paradigm developed by Maylor (1985). In the double-cueing paradigm, there is an arrow pointing leftward and an arrow pointing rightward. The result is that there is a facilitation effect for BOTH sides, and the effect is roughly half that of the facilitation effect in the single cue version. This motivates the prediction that a double-cue version of the Samson paradigm (i.e. with two avatars, one facing in each direction) would facilitate processing at both locations (left and right), with performance being better on trials with two avatars than on trials with one or zero avatars. Our results reveal precisely this pattern, thus supporting the hypothesis that spatial cueing at least partially drives the effect observed in this paradigm.

Self-prioritization of avatar faces

Mateusz Woźniak & Günther Knoblich

P8

Humans tend to process self-related stimuli in a preferential way. Classic studies have demonstrated that people remember words related to themselves better and encode self-related information in a different way than information about other people. Other results indicate that these effects include also better and faster visual processing of self-related stimuli. Recent study (Sui et al. 2012) has shown that similar effects in facilitating visual processing can be elicited for neutral stimuli (geometric shapes) by rapid self-association.

The present study has investigated if rapid self-association can lead to similar effects for avatar faces. In contrast to geometrical shapes, faces constitute a special kind of social stimuli serving as possibly the most important source of knowledge about people's identity. Moreover, people tend to identify themselves with only one face (their own) since it's biologically impossible to possess more. Therefore, it should be expected that associating a neutral face with the self would cause an interference and make the task of face recognition more difficult.

Using a modified Sui et al. 2012 self-prioritization paradigm we have shown that people were faster to detect neutral faces which they had encoded as "themselves" than faces encoded as "stranger". Contrary to the intuitions, treating random face as self did elicit a reliable self-prioritization effect. On the other hand, faces encoded as best friend have generated more complicated pattern of results. Overall, the results show that people can easily associate neutral faces with their self-representation, but find it much more difficult for representation of their best friend. It may indicate much more malleable representation of self than close others.

Social benefits influence goal ascription in 15-month-old infants

Denis Tatone, Mikołaj Hernik, & Gergely Csibra

P9

A number of studies demonstrated that goal attribution in infants critically depends on whether actions minimize the costs of outcome production (Gergely & Csibra, 2003). However, such cost-minimization criterion can be reliably used to identify goal states only in single-outcome scenarios, and it does not allow disambiguating among possible goals when a single action results in multiple outcomes. To circumvent this problem, infants may concurrently assess the benefits generated by the observed outcomes and assign goal status to the outcome yielding the highest net benefits.

We tested this hypothesis across four looking-time studies with 15-month-olds (N = 16 per study). Infants were familiarized with an agent A approaching its goal object X on a narrow platform. The only means for A to realize its goal was by producing a second outcome, namely, pushing away an object Y obstructing the path. Y would then fall near an agent B (social condition), or an inanimate recipient (non-social condition). At test, infants saw a modified version of the platform where A could approach unimpeded either its target object X or the previously obstructing object Y. Infants in the non¬-social condition expected A to reach for X, whereas infants in the social condition expected A to push Y down to B. The mere presence of a potential beneficiary of the transfer (agent B) strikingly reversed infants' goal attribution. These findings indicate that infants assess potential benefits to disambiguate among candidate goal hypotheses, and include in this assessment benefits to individuals other than the actor.

The sound of you and me: Novices represent shared goals in joint action

P10

Janeen D. Loehr[1] and Cordula Vesper[2]

[1]Department of Psychology, University of Saskatchewan, Canada; [2]Department of Cognitive Science, Central European University, Hungary

People performing joint actions coordinate their individual actions with each other to achieve a shared goal. The current study investigated the mental representations that are formed when people learn a new skill as part of a joint action. In a musical transfer-of-learning paradigm, piano novices first learned to perform simple melodies in the joint action context of coordinating with an accompanist to produce musical duets. Participants then performed their previously-learned actions with two types of auditory feedback: while hearing either their individual action goal (the melody) or the shared action goal (the duet). In line with our hypothesis, participants made more performance errors when they transferred to the individual compared to the shared goal condition. Further experimental manipulations indicated that this impairment was not due to different coordination requirements or perceptual dissimilarities between learning and test. Together, these findings indicate that people form representations of shared goals in contexts that promote minimal representations as when learning a new action together with somebody else.

'We-representations' in a joint action-effect learning context

Sophie Milward and Natalie Sebanz

P11

Recent theoretical and experimental work has discussed the possibility that actors performing a task in a joint scenario may form a single representation of the task that includes both their own and their partner's role (see Gallotti & Frith, 2013). This is qualitatively different from representing self and other separately and consequently produces modulation in behaviour, such as increased mimicry of a group when performing the task as a group (Tsai, Sebanz & Knoblich, 2011). The current work aims to provide further experimental evidence for 'we-representations' in adults, and also identify its developmental trajectory by studying children. The study uses a modification of an action-effect learning paradigm (Verschoor, Eenshuistra, Kray, Biro & Hommel, 2011). In an acquisition phase, participants learn that Sound A is produced by Participant A's button-press, Sound B is produced by Participant B's button-press and Sound C is produced by both pressing their buttons simultaneously. In a test phase, participants hear one of the three sounds from the acquisition phase on each trial. In the Consistent condition, participants are asked to respond consistently with the acquisition phase, by pressing the button or combination of buttons that corresponded with previous learning. In the Inconsistent condition, participants must now follow a rule that is inconsistent with originally learned action-effect mappings, but only at the group level. So, sounds that were previously caused by individual actions are now responded to jointly and vice versa Importantly, in terms of the individual's role, the action-effect mappings are identical. If participants form representations at the group level, they should perform better in the Consistent than Inconsistent condition. This ongoing work has implications for both the discussion on 'we-representations' as well as the literature on causality understanding.

When do humans spontaneously adopt another's visuospatial perspective?

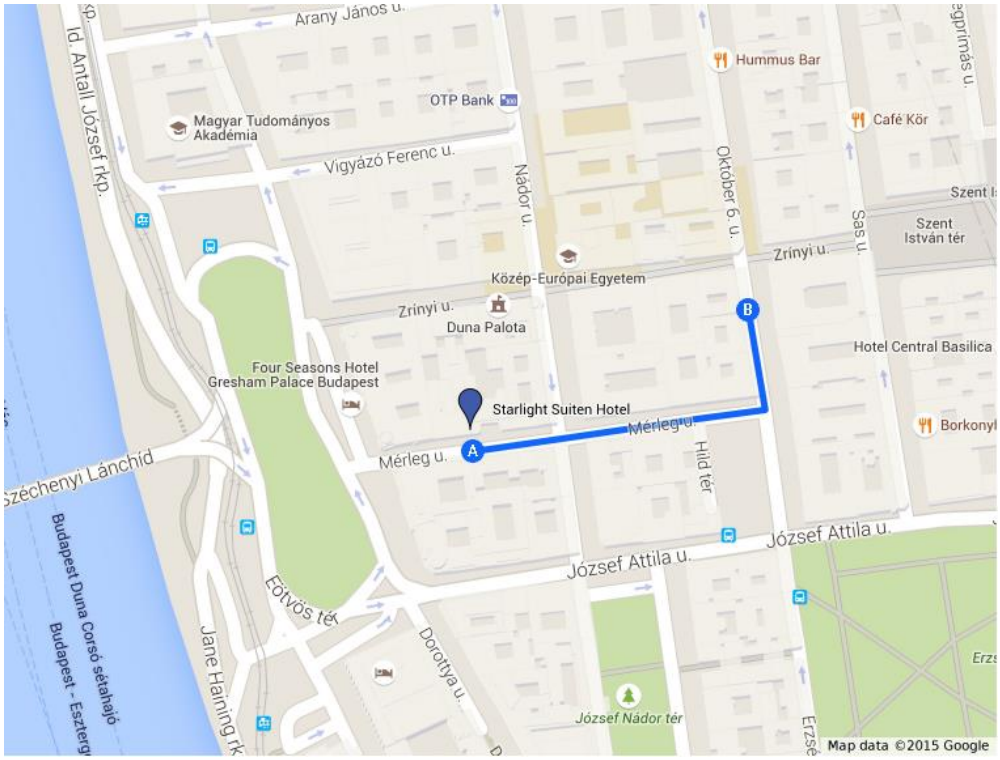
Martin Freundlieb, Ágnes M. Kovács & Natalie Sebanz

P12

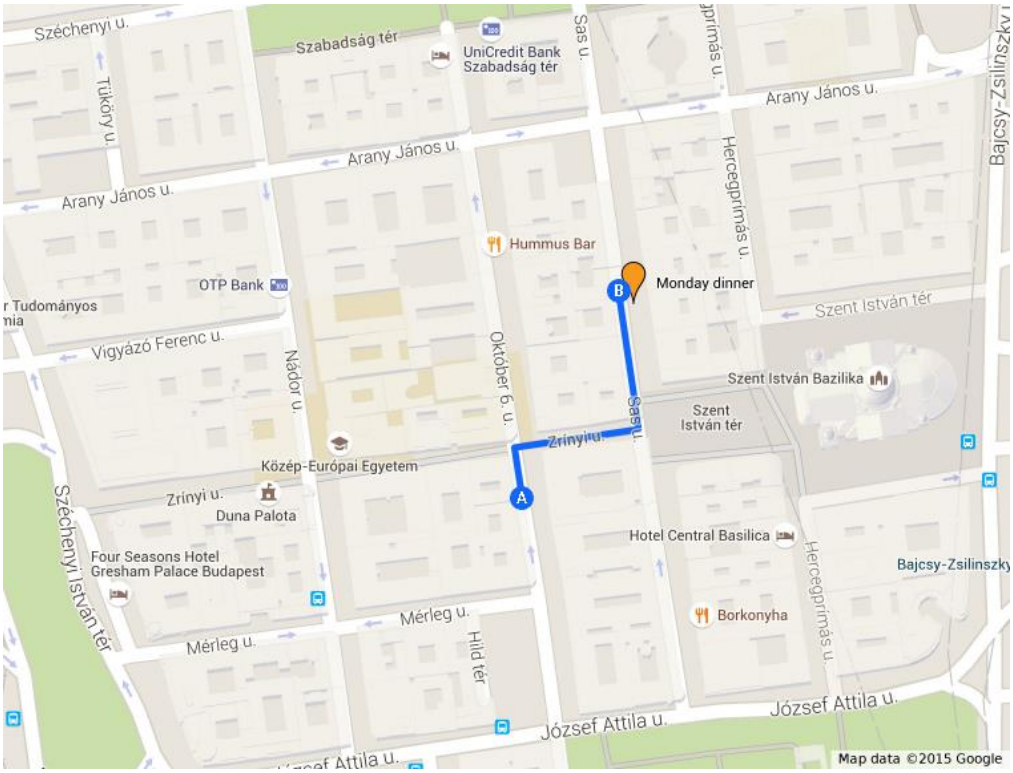
Perspective-taking is a key component of social interactions. However, there is an on-going controversy about whether, when and how instances of spontaneous visuospatial perspective-taking occur. The aim of this study was to investigate the underlying factors as well as boundary conditions that characterize the spontaneous adoption of another person's visuospatial perspective (VSP) during social interactions. We used a novel paradigm, in which a participant and a confederate performed a simple stimulus-response (SR) compatibility task sitting at a 90° angle next to each other. In this set-up, participants would show a spatial compatibility effect only if they adopted the confederate´s VSP. In a series of six experiments we found that participants reliably adopted the VSP of the confederate, as long as he was perceived as an intentionally acting agent with whom they shared the same visual access to the stimuli. Our results therefore show that humans are able to spontaneously adopt the differing VSP of another agent and that there is a tight link between perspective-taking and performing actions together. The results suggest that spontaneous VSP-taking can effectively facilitate and speed up spatial alignment processes accruing from dynamic interactions in multi-agent environments.

Getting around

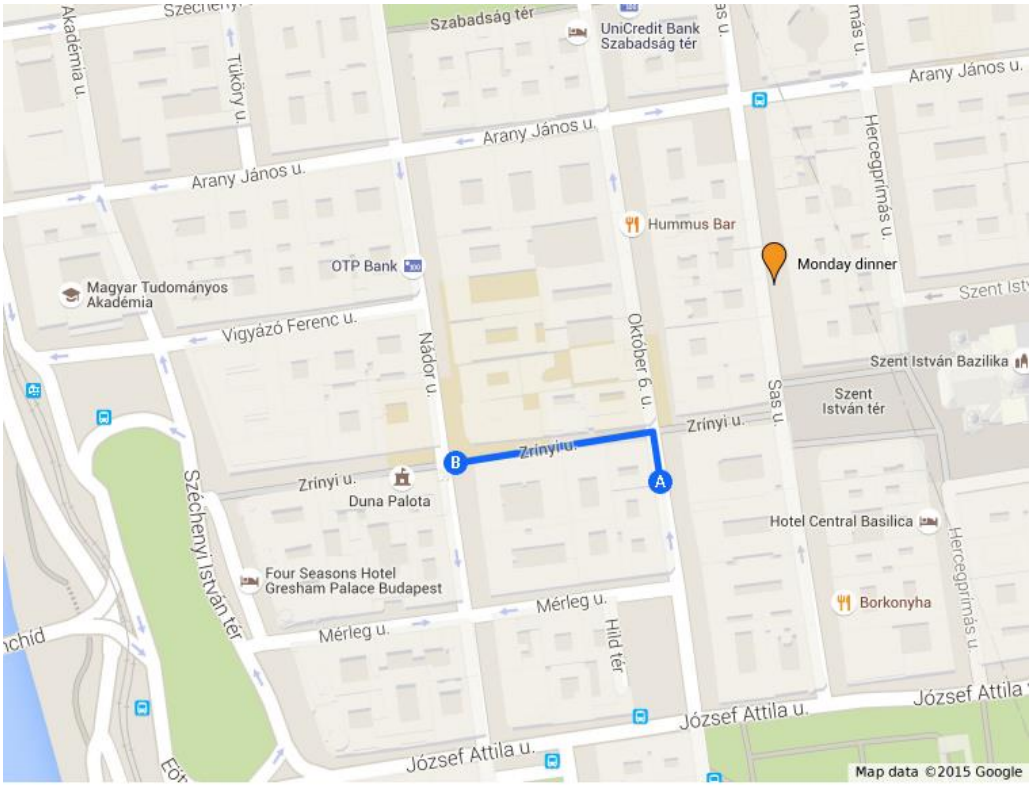
Directions to CEU (Október 6. utca 7, 1051 Budapest) from the Hotel



Monday dinner: From CEU to Café Kör (Sas utca 14-16, 1051 Budapest)



Directions to Tuesday afternoon venue (CEU, Nádor utca 9, 1051 Budapest)

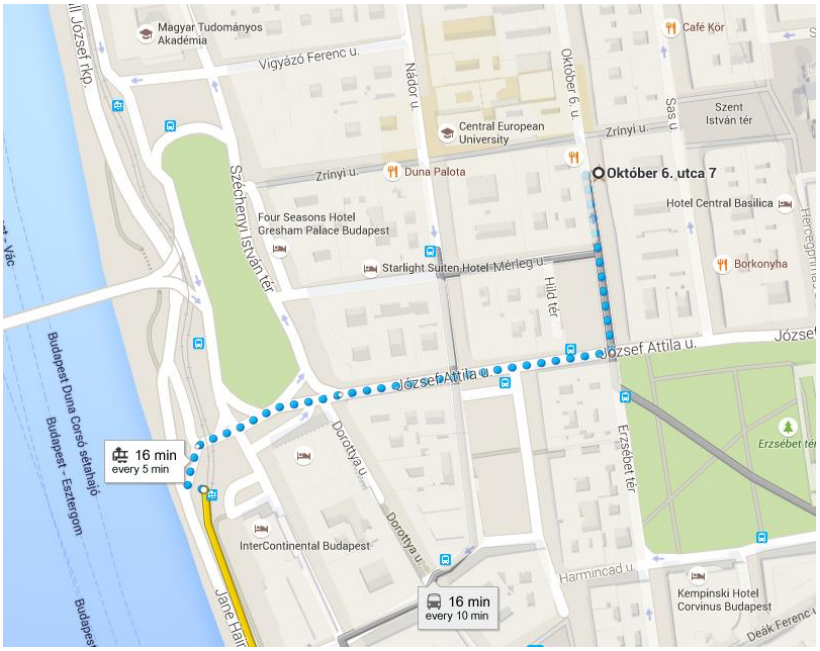


Tuesday dinner: from CEU to Borssó Bistro (Királyi Pál utca 14, Budapest 1053)

-- If you prefer walking, the restaurant is 20-30 minutes away on foot. –

-- Please note that you will need a single ticket for the Tram. --

1. Walk to Tram 2 stop **Eötvös tér**



2. Take Tram 2 South to **Fővám tér** (3 stops)

3. Walk to **Királyi Pál utca**