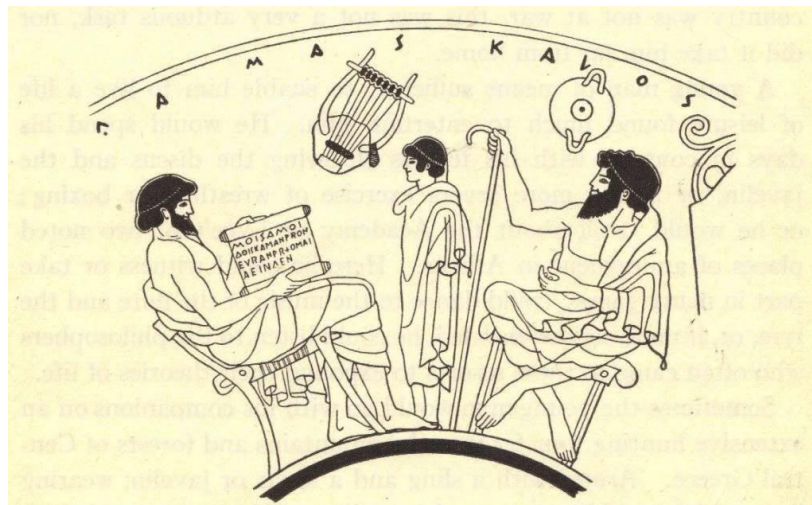


Solving Puzzles of Infant Cognition: The Gergely Axioms

Conference Program



15th of November, 2013

CEU Budapest

Program Overview

9:00 Welcome: **Gergely Csibra & Katalin Farkas**

9:15 **Csaba Pléh**: From the focus based inferences to the stances

9:30 **Peter Fonagy**: “Affect Regulation, Mentalization, and the Developmental of the Self”

9:55 video messages:

10:00 **John Watson**: Referential Inference, Dispositional Perception, and a Stance on Determinism: Their Potential Roles in Early Communication Perception

10:25 video messages

10:30 Coffee Break

11:00 **Szilvia Bíró**: Infants’ interpretation of direct approaches of human and non-human agents

11:15 **Pasco Fearon**: On pedagogy, emotion and attachment

11:30 **Deb Kelemen**: Young children’s rapid learning about object categories

11:55 video message

12:00 **Eszter Berán & Zsolt Unoka**: Regulating affective involvement by shifting narrative perspective in psychoanalytic discourse: The analysis of two psychotherapeutic sessions

12:15 **Idikó Király**: Never-ending Head-Touch Story - the use of an old task to answer novel questions

12:30 Lunch Break

13:30 **Philippe Rochat**: Balancing acts in development

13:55 **Kata Egyed**: Early Understanding of the Socially Mediated Representational Function of Pictures

14:10 video message

14:15 **Eszter Somogyi**: Understanding intentions in low-functioning autism - the applicability of the head touch experiment in atypical development

14:30 **Pierre Jacob**: Reasoning about identity and the contents of others’ false beliefs

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15:00 Coffee Break

15:30 **Clark Barrett**: The end of rationality? Studies of life and other things

15:55 video message

16:00 **Willem Frankenhuis**: Does Early-Life Exposure to Stress Shape or Impair Cognition?

16:15 **Ernő Téglás & Ágnes Kovács**: Agents “survive” cohesion violation

16:30 video message

16:35 **Dan Sperber**: Debiasing Natural Pedagogy

17:00 Cake!

From the focus based inferences to the stances

Csaba Pléh

In the early psycholinguistic work of György Gergely there are two features prefiguring his later intellectual development. The first is the idea of an all encompassing modularity. Linguistic ambiguities are analyzed by him in expressions like *nyom-ok a hóban* (1. trace in the snow, 2. I 'push' in the snow) arguing for an obligatory morphological parsing AND an automatic multiple access at the same time. The later is analyzed by presupposing a large inferential base. Automatic activation of inferences is also supposed in treating focused syntactic constructions in Hungarian in examples like *Though Mary washed the dishes DIRTY .* Here the target word accessibility again reveals that our mind is constantly computing all sorts of structure dependent inferences. The later development shows that a final basis of all this inferences will be the universal intentional attribution or stance *à la* Dennett that makes possible in language all of these inferences.

“Affect Regulation, Mentalization, and the Developmental of the Self”

Peter Fonagy

Mentalization- based treatment has changed the shape of therapy for individuals who present with chronic suicidal and self-harming behaviour. The developmental research initiated and inspired by George Gergely has been crucial in shaping our understanding of the problem and the clinical interventions which prove to be helpful to these individuals. A set of disorders previously considered intractable can now be reasonably effectively treated using a range of techniques which originate in the concept of mentalization which the collaboration between Gergely and the clinical team has documented in the 2002 volume of the same title. Several thousand therapists have now been trained using this approach and Gergely’s ideas have contributed to improve mental health and well- being for hundreds of thousands of individuals, not all developmentalists can make this claim.

**Referential Inference, Dispositional Perception, and a Stance on
Determinism: Their Potential Roles in Early Communication
Perception**

John Watson

A charge to today's speakers is to share how Gyuri's ideas have affected our thinking. I will focus on the ideas of "referential inference" and "communication perception." About twenty years ago, Gyuri introduced me to the idea of referential inference and we later combined it with a thought I had about dispositional perception in a theory we called Social Bio-Feedback. I will say a few words about that collaboration and then share a more recent influence of the concept of referential inference on my thinking about dispositional properties and the infant's stance on determinism as these may play a role in another theoretical domain that Gyuri and Gergo have highlighted in their theory of Pedagogy, namely "communication perception."

Infants' interpretation of direct approaches of human and non-human agents

Szilvia Biro

Recent research (Hernik & Southgate, 2012; Biro et al., 2011) inspired by Gergely and Csibra's influential teleological stance theory (2003) suggests that infants are only able to generate goal-directed expectations in a new situation if the agent's behavior provides unambiguous means selection information (i.e., an efficiently adjusted movement path). These findings drew attention to the ambiguity of goal-directed interpretation of direct approaches which, albeit efficient, do not provide direct evidence for efficient adjustment. Our study investigates the influence of the type of actor and the availability of contextual cues (target choice) on infants' expectations about the future behavior of agents who have been shown to engage in a direct approach toward another object. We found that a direct reach and grasp action of a hand only generated unambiguous goal-directed expectations when context cues were also available, while a direct straight approach of self-propelled non-human agent did not elicit specific goal-directed expectations regardless of the presence of context cues. This suggests that although prior knowledge about the adjustability of the actor's movement is necessary in case of direct approaches, however, such knowledge is not sufficient for generating specific expectations in a new situation.

On pedagogy, emotion and attachment

Pasco Fearon

In this talk I will briefly outline two research arenas in which Gyorgy Gergely's work has intersected with my own work in the domain of social relationships. In the first, I summarise recent studies on the role of early attachment for long-term development and pubertal timing and discuss the connections between these observations and Gergely and Frankenhuis' model of contingency analysis and life-history development. In the second, I relate findings of a recent study based on Gergely's work on object- versus person-centred representations and pedagogy, in which we examined infants' understanding of social coalitions/affiliations.

Young children's rapid learning about object categories

Deb Kelemen

Human ecological dominance significantly derives from our capacities as sophisticated artifact creators and users. In honor of Gyuri Gergely's profound contributions to our understanding of the development of object-directed behavior and artifact cognition, this talk will overview a line of work exploring children's rapid artifact categorization abilities—skills that underpin efficient tool use and design. I will briefly present recent findings examining social and contextual influences on children's rapid artifact category learning. I will also discuss the domain-specificity of children's abilities.

Never-ending Head-Touch Story - the use of an old task to answer novel questions

Ildikó Király

In this talk I would like to briefly introduce how developmental scientist started to use the head-touch task for different questions in cognitive development and would like to show the revealed contrasts in evidence: could we test social category attribution with the help of it?

**Regulating affective involvement by shifting narrative perspective in
psychoanalytic discourse: The analysis of two psychotherapeutic
sessions**

Eszter, Berán & Zsolt, Unoka

Emotion experienced and expressed in the therapeutic setting, as well as the regulation of affect plays a crucial role in the therapeutic process. We argue that affective involvement of the self is related to the shifting of narrative perspective (NP) in interaction. During narrative construction by client and therapist taking place at the analytic session, speakers influence each-other's perspective. Our study examined this process in relation to affect regulation as a self-regulatory process as well as a process of interpersonal regulation.

Methods: In a longitudinal study of 1.5 years we observed the interaction of patient and therapist at the therapeutic session. We analyze two audio-recorded sessions, from the beginning and from the end of the observation period. Transcribed sessions are segmented into intonation units. NP shifts in selected sessions were coded based on our manual for coding narrative perspective in Hungarian. We analyzed the self-regulatory and interpersonal regulatory mechanisms of affective involvement by analyzing the following four types of intonation unit sequences: the patient's unit following his own, the patient's unit following the therapist's unit, the therapist's unit following the patient, and therapist to therapist sequences.

Results: By our method specific micro-level changes were detectable in the self-regulatory and mutual regulatory strategies measured by NP patterns used by the client and the therapist. We found that affective involvement of the self on the part of both speakers was higher at the follow up session, and we describe an affect-regulation cycle characteristic of the interaction.

Balancing acts in development

Philippe Rochat

As research scientists, we tend to clean up the mess of mental life with constructs and statistical tools telling neat stories that entertain, advance careers, promote egos, and help pay the bills. We are part of a cleaning crew culture packaging TED talk stories. This reductive, inescapable process leads to a rather one-dimensional, monolithic view of subjective experience. The fact is that our experience is messy and neat predictive concepts do not do justice to the messiness and paradoxes of mind's life. As social scientists, we cannot simply pretend to be engineers, pure rationalists, or brain surgeons because as sentient and symbolic creatures we are much more than machines: we feel, have emotions, and more importantly, we fantasize and project. For the self-conscious creatures we are, uniquely preoccupied with reputation and self-presentation, it is the juggling of contradictions that brings life and lights to our experience. I want to illustrate this broad idea based on my own research on social-cognitive development. These examples are meant to suggest that one grows to manage ever greater and more complex balancing acts of holding and playing with contradictory postures and stances in life, particularly in relation to others. I try to show that underlying the development of morality, for example, there is a paradoxical co-dependence between ethics and lies.

Early Understanding of the Socially Mediated Representational Function of Pictures

Katalin Egyed

We know that a robust change occurs in picture understanding by the age of 30 months, however, we know little about what factors can facilitate this ability. In my talk I'd like to present three experiments, which tested whether children's picture understanding could be facilitated by applying a social treatment that made available the social context in which the pictures were produced.

While in the social treatment of the Experimental condition the Experimenter was intentionally drawing pictures that had specific referent, in the non-social treatment of the Control condition the Experimenter was not drawing but discovered the predrawn pictures. In In Experiment 1-3 we tested 24-30-month-olds in a spatially complex picture-based retrieval task and 26-month-olds in a simple one. As we predicted, children in the Experimental condition performed better in the retrieval task in each experiment. This result suggests that the social treatment, which helps the children to understand the specific referent of pictures by attributing drawing intention to the creator, enables the children to perform better in contextualising pictures in the current reality.

Understanding intentions in low-functioning autism - the applicability of the head touch experiment in atypical development

Eszter Somogyi

In this short talk, I invite you to take a glimpse at how Gergely György's findings and thoughts concerning cognitive development might be transferred to atypical development. During the past few years, Gyuri's recurring question for me has been: 'So tell me at last, what exactly did children with autism do in the head touch experiment in Paris?' On this notable occasion I will finally provide the answer. In a joint Budapest-Paris project we investigated ability to understand goals and attribute intentions low-functioning, nonverbal children with autism. Down syndrome children and typically developing children were recruited to form matched comparison groups. We found that autistic children imitated the experimenter exactly, regardless of the model's intention. This shows that they attributed goals to the observed model, but did not take into account the contextual cues of the observed behaviour. Instead, the strategy that children with autism used consisted of reproducing the full set of behaviours witnessed, without selectivity. This strategy may in fact allow for them to respond appropriately in social situations.

Reasoning about identity and the contents of others' false beliefs

Pierre Jacob

In two recent papers, Perner, Mauer & Hilderbrand (2011) and Low and Watts (2013) have linked the failure of 3-year-olds to pass elicited-response false-belief tasks with their difficulties to understand identity statements. I will take a hard look at these claims.

The end of rationality? Studies of life and other things

H. Clark Barrett

Children's and adults' understanding of the behavior of humans and other animals relies on a set of intuitive principles that yield predictions about how agents will behave given their goals, knowledge, abilities, and situational constraints. When agents die, however, they become non-agents. What are we to expect when this happens, and what are we to expect children to expect? In this talk I present theory and preliminary data that point to a possible answer.

Does Early-Life Exposure to Stress Shape or Impair Cognition?

Willem E. Frankenhuis

A predominant view in psychology is that early psychosocial adversity (e.g., abuse) impairs cognition, because children from stressful backgrounds (e.g., violent households) score lower on standard tests of intelligence, language, memory, inhibition, and other abilities. However, recent studies indicate that these people may exhibit improved detection, learning, and memory on tasks involving stimuli that are ecologically relevant to them (e.g., dangers), compared with safely nurtured peers. These findings contradict the view that cognition of stressed people is generally impaired; they suggest, rather, that these people's minds are developmentally specialized toward local environmental conditions. In this talk, I present novel studies (which are under construction) that examine whether stressed children show not only improved detection, but also improved memory and reasoning, on tasks involving stimuli that are ecologically relevant to them.

Agents “survive” cohesion violation

Ernő Téglás and Ágnes Kovács

Young infants possess powerful abilities to track objects in time and space, however, certain transformations, like breaking objects into parts seriously challenge their object-tracking system and cause interference with subsequent processes (e.g. quantity judgments, Cheries et al, 2008.). Infants’ reasoning about objects is guided by small set of interrelated principles, e.g., cohesion and continuity, helping them to segment the visual input into discrete, continuously existing objects. It is not surprising, thus, that violations of cohesion compromise infants’ object representation: infants fail to assign object files to the resulting fragments and to capture the relation of the parts with the original object.

In a series of experiments we explore the effects of such transformations involving agents. In contrast to the domain of physical objects, social cognition may place ideas of continuity on a different ground. Beyond the continuity of physical bodies, in case of agents one could observe continuity of knowledge, preferences, goals, as they are transmitted from one agent to another. It is unclear, however, whether infants can resolve the puzzle created by splitting agents. Such cases may seriously challenge the cognitive systems dedicated to agency encoding. Would the splitting of an agent in halves cause “dis-attribution” of agency? Can the object-tracking system solve the problems caused by the fragmentation of an agent? If yes, are there properties that provide continuity between the original entity and the resulted parts?

We present experiments with infants from a variety of age groups giving at least partial answers to these questions. Our results are compatible with the idea that agents’ intentions survive the splitting of their body and can be transferred from the originally identified agent to the multiple bodies that were created by it’s physical fragmentation. In analogy to the idea that assumptions of object permanence provide coherence to infants’ expectations about the physical world, our findings raise the possibility that continuity of intention serves as a means to bind the new agents and link them to the entity they originate from.

Debiasing Natural Pedagogy

Dan Sperber

Natural pedagogy theory does not need to postulate a bias in order to explain how ostension makes it more probable that a communicative behaviour will be interpreted as conveying a generic content.