

Josef Perner:

BIO

Josef Perner is Professor emeritus of Psychology at the University of Salzburg, member of the Centre for Cognitive Neuroscience, and founder of the Doctoral College "Imaging the Mind". He is best known for co-authoring with Heinz Wimmer the False Belief Task. His empirical work focused on the development of perspective taking in relation to theory of mind, counterfactual reasoning, identity, alternative naming, etc. His theoretical work centred on the nature of mental representation and the implicit-explicit distinction, and more recently on Teleology as a common sense alternative to theory of mind and mental simulation. His current preoccupation is mental files theory as an explanation of why all the abilities he has studied relate to each other developmentally and in the brain.

Title: *"Mental files: from object to perspective."*

Abstract

We will look at the use of mental files under different labels in different research fields. Object files are used in explanations of visual attention, tracking of multiple moving objects, and how infants individuate objects. Discourse referents are linguists' way of providing the logical structure of discourse beyond single sentences. Philosophers have focused on coreferential files (more than one file refers to the same object) to explain logical problems with statements of identity and of mental states. My major focus will be on empirical offshoots of coreferentiality. It plays a part in explaining how children come to integrate visual perception of objects with linguistic reference to these objects. This leads to an appreciation of perspective differences, which helps refine their understanding of belief. Finally, we will have a look at the brain activity for integrating coreferential files.

Brent Strickland:

BIO

Brent Strickland is a CNRS researcher at the Institut Jean Nicod and Ecole Normale Supérieure in Paris, France. He is also the co-founder of the UM6P School of Collective Intelligence in Ben Guerir, Morocco. His research examines core knowledge systems that appear early in human development and universally across human cultures. Some examples are representations of basic physical principles, number, people's mental states, and social categories. More specifically, his research asks how such core knowledge continues to operate (often automatically and unconsciously) in adulthood.

Title: *change to "From object perception to object cognition: Philosophical and empirical perspectives"*

Abstract

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Stefanie Hoehl

Bio

Stefanie Hoehl is Full Professor of Developmental Psychology at the University of Vienna where she directs the Wiener Kinderstudien lab. Her main research focus is on how infants and children perceive and learn from other people. Using electrophysiology, she investigates how infants process visual object categories, e.g. faces, and whether and how infants' visual perception is influenced by social attention cues from other people, such as gaze.

Abstract: Title: Object categories & social attention in the infant brain Perceptual categories are helpful when navigating our complex world, but how are they acquired? I will outline the development of visual object categorization in infancy, based on insights from behavioral studies employing looking time measures (e.g., habituation) and electrophysiological studies using event-related potentials (ERPs), including oddball tasks, repetition suppression paradigms, and steady-state visually evoked potentials (SSVEP). Special focus will be put on the advantages, limitations and challenges of different methodologies when employed with infant populations.

In addition, we will address social influences on infant object learning and categorization. Here, we will consider (i) highly controlled computer-based paradigms that allow us to experimentally isolate perceptual features of social cues affecting infant attention direction, and (ii) more ecologically valid live interaction studies which offer insights into dynamic changes and fluctuations of mutual and object-directed attention during social interactions.

Melissa Kibbe

BIO

Melissa M. Kibbe is Assistant Professor in the Department of Psychological & Brain Sciences at Boston University, where she directs the Developing Minds Lab. Her research explores the representations and computations supporting domains of core cognition (specifically: objects, number, and agents), how these domains interact with each other, and how these domains may support reasoning, planning, and the acquisition of formal knowledge.

Abstract

In this course, we will explore our current understanding of the format of object representations and the factors that shape those representations, focusing primarily on evidence from infants and toddlers. In the first seminar, we will review formats of object representations, and examine the computations that can be performed over these representations. We will explore the extent to which infants and children can flexibly shift between representational formats to accomplish goals. In the second seminar, we will discuss multiple potential mechanisms by which context influences the content of object representations, focusing primarily on social and pedagogical contexts in infancy. Across both seminars, we will identify the current "unknowns" in our understanding of object representation, and discuss ways to address those unknowns with empirical and philosophical inquiry.

Teodora Gliga

BIO

Teodora Gliga is an Associate Professor at University of East Anglia, UK. She has a broad interest in many aspects of early learning, in typical and atypical development, which she tries in vain to narrow down (all is interconnected in development!). She initially trained as a molecular biologist and

neuroscientist (at University of Bucharest), which means that she will always try to find “simple” explanations for complex abilities. She is most intrigued by the questions of whether and how communication changed the way humans perceive and remember the world. Most recently she became interested in the role of sleep in consolidating knowledge.

Abstract

How does language change object representations? We will first critically review current theories proposed to explain the influence of language on object representations, in particular those that focussed on the acquisition of category and conceptual representations. We will discuss whether language is unique in exercising this role. We'll ask to what extent lab-based studies can reveal the true impact language has in early object learning. We will work in groups to brainstorm ideas for studies that could better ask the question of whether language has a critical role in early conceptual development.

Radoslaw Martin Cichy

Bio

Radoslaw (Radek) Martin Cichy is Professor for Neurocognitive and General Psychology at Freie Universität Berlin. He investigates different facets of human visual cognition such as object recognition, imagery and its plasticity. For this he combines neuroimaging methods with computational models and behavioral assessment using multivariate analysis.

Abstract

Infants learn to categorize visual objects rapidly, but little is known about the mechanisms and specific neuronal processes underlying categorization in infancy. We therefore combined infant electroencephalography (6-8 months olds), computational modelling and time-frequency analysis to reveal when and how infants represent object category, and how such representations relate to those adults have. In this talk I introduce the methodology and present four key findings. First, we identified a general marker of object category representations that emerged slower and was more persistent in infants than in adults. Second, this marker indexed representations from occipital sources, and these representations were shared across infants and adults. Third, computational modelling revealed that shared representations had the format of mid-level visual features. Finally, we found that infant category representations as emerging in the theta band were related to adult category representations in the alpha band. Together our results identify a marker of object category representations and characterize those in timing and their representational format.

Anna Papafragou

Bio

Anna Papafragou is a Professor in the Department of Linguistics at the University of Pennsylvania and the director of the University's interdisciplinary graduate program in Language and Communication Sciences. Her research focuses on how children acquire meaning in language, how language is used and understood, and how language interfaces with human perception and cognition

Abstract:

This is a seminar on how language relates to event perception. The seminar pays particular attention to these questions: (a) How does language encode events; (b) Does event language affect event cognition?; (c) How do different languages represent events?; and (d) How do children acquire language-general and language-specific ways of encoding events?

Gergo Csibra

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Agi Kovacs

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