

**Infant Natural Ontology:
Conceptual Representations of
Kinds and Particulars in the domain of Agency**

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Recent methodological advances in cognitive developmental neuroscience provide powerful new tools to investigate the evolved mind's natural ontological categories and inferential mechanisms available to preverbal infants to represent and reason about agents, actions, and objects in the world even before (and possibly independently of) acquiring language. This new kind of evidence provides an important source of (non-linguistic) information about the initial set of conceptual categories of the evolved mind (or of LOT, if you will) that language acquisition will need to map onto the semantics of words and linguistic constructions.

In my talk I shall first focus on our recent work employing non-verbal paradigms and implicit measures of behavioural and brain responses to explore young infants' domain-specific core adaptations for interpreting instrumental and communicative actions and to identify the core conceptual categories for representing agent kinds and particular agents. I shall then discuss some new (and admittedly somewhat puzzling) results indicating certain representational limitations and constraints that characterize young preverbal infants' initially restricted ability to represent specific agents only as *'generic particulars'*: as *tokens of an agent kind* (represented solely in terms of the kind-specifying properties of the kind-category they belong to). (The evidence consists of demonstrations of apparent tolerance by young infants of violations of agent identity or violations of principles of causal-physical agency during the agent's efficient goal-pursuit.)

These findings suggest that before 12 to 16-months of age infants, who can already interpret goal-directed intentional actions

and can attribute intentional properties (such as goals, preferences, and even beliefs) to the agents performing them, nevertheless, fail to represent the particular agent as a unique and re-identifiable individual with enduring spatial-temporal identity possessing person-specific featural, intentional, and/or dispositional properties that provide the basis for their individuation and re-identification across contexts. These - apparently lacking - representational conditions for representing particular agents as individual persons, however, become available and can be clearly demonstrated in somewhat older infants from the 2nd year onwards.

What are the developmental determinants and representational preconditions that induce young infants to shift from representing specific agents as 'generic particulars' to representing them as unique individuals? I shall speculate that early social experience with ostensive-referential communication and rigid referential use of unique designators (proper names) in discursive contexts may play an important causal role in establishing the representation of mutually identifiable and co-represented individuals with enduring identity and individuating person-specific 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 the interpretation of ostensive communicative information transfer (Tauzin and Gergely, in prep., Téglás and Gergely, in prep.), or when asymmetric object transfer interactions cued the interpretation of ostensive provision of valuables to a recipient agent (as in 'giving object to' – but not in 'taking object from' interactions) (Tatone and Csibra, 2015).