ON THE

ONTOGENY AND PHYLOGENY

OF THE

REPRESENTATIONAL MIND

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General Abstract

This thesis proposes a theory for fundamental aspects of the evolution and development of the representational mind. Building on Perner's (1991) theory of representational development, it is suggested that mind evolved from the ability to represent current reality (primary mind) to further entertain secondary representations of hypothetical content (collating mind) to finally represent representational relations themselves (metamind). In child development these transitions can be observed by about 18 months and by about 42 to 48 months. In comparative analysis only the great apes show signs of a collating mind. Young children and great apes can, for example, pretend, consider a limited future and past, solve problems by insight, and consider others' basic mental states. By about age four children begin to show evidence for metarepresentation in their ability to pass theory-of-mind tasks. At about the same age they also gain considerable executive control which, together with metarepresentation, is the key cognitive advance of metamind. Empirical evidence suggests that various skills co-develop with metamind and the thesis includes four studies that investigate such associations. It was found that gestural representation with imaginary objects and the generation of creative problem solutions were robustly correlated with theory-of-mind measures. These results substantiate the claim for a domain-general change in cognitive ability by about age four. Understanding delayed video feedback, however, was not found to correlate with such measures and it is questioned whether delayed feedback tasks measure an extended sense of self as has been proposed (Povinelli, 1995; Suddendorf & Corballis, 1997). Great apes, while showing evidence for a collating mind, have not yet provided any

convincing evidence for metamind. It is thus suggested that metamind developed after the split from the line that led to modern chimpanzees about five million years ago. Metamind, it is argued, was a prime mover in human phylogeny and is a crucial step in human ontogeny.

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