



1st Jean Piaget Conferences

Theories of Development

June 26 – 27, 2014
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14h45

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Fuzzy-Trace Theory and Cognitive Development

Abstract:

Fuzzy-trace theory (FTT) is a lifespan model of cognitive development that concentrates on the interface between memory development and the development of higher reasoning abilities. A key finding has been that gist memory (storing the bottom-line meaning of experience) drives the development of reasoning, whereas the development of episodic memory depends more heavily on verbatim memory. Different lines of experimentation have focused on the relative independence of reasoning from the development of verbatim memory, on implementing developmental changes in memory and reasoning in mathematical models (e.g., the conjoint recognition and dual retrieval models), on counterintuitive memory phenomena that result from the interplay of gist and verbatim memory (e.g., cognitive triage), and on counterintuitive reasoning phenomena that result from such interplay (e.g., the non-numerical basis for numerical illusions such as decision framing and the conjunction fallacy). Developmental reversals are an especially counterintuitive family of phenomena that cut across the memory and reasoning domains. Recent lines of experimentation have focused on brain regions where the development of verbatim and gist memory are centered (e.g., the hippocampus and the parietal cortex), and on the use of FTT's distinctions to explain the nature of the memory and reasoning declines that characterize certain diseases of aging (e.g., mild cognitive impairment, Alzheimer's dementia).