



# Thinking, Reasoning, and Development

30 June – 2 July 2010

Uni Mail – Geneva

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## 19th Advanced Course

### Thinking, Reasoning, and Development

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Friday morning, July 2, 2010

10h 00

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*Epistemic cognition and development*

#### **Abstract:**

Research in cognitive and developmental psychology has led to a consensus that automatic inferences play a major role in human functioning at all ages. I define thinking as the deliberate application and coordination of one's inferences to serve one's purposes. I define reasoning as epistemologically self-constrained thinking. Over the course of development our automatic inferences are increasingly supplemented by acts of thinking and our thinking increasingly takes the form of reasoning. Neither thinking nor reasoning replaces automatic inference, however. Even among high-functioning adults, thinking and reasoning are the rational tip of the iceberg of cognition. The role of developmentalists, however, is to study what develops. A focus on development leads to a focus on thinking and, especially, reasoning, which leads in turn to a focus on the development of metacognition and, especially, epistemic cognition—knowledge about the basic nature of knowledge and justification.

Epistemic development—the development of epistemic cognition—begins about age 4 with children's recognition that beliefs can be false. Over the next 5 or 6 years, children increasingly distinguish at least three epistemic domains: (1) an objective domain of truth, (2) a subjective domain of taste, and (3) a rational domain of reasonable interpretation. Questions about the truth, falsity, or justification of particular beliefs and inferences arise and are addressed within these domains. Adolescents and adults, unlike children, often theorize about abstract and fundamental issues of knowledge including the nature and possibility of justification. Development beyond age 11 or 12, however, is much less universal and tied to age than earlier development. Individuals who construct advanced forms of epistemic

archives

*J. Piaget*



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cognition proceed from (1) objectivist epistemologies, which take verifiable facts and logical proofs as paradigm cases of knowledge; to (2) subjectivist epistemologies, which view knowledge as opinion, and opinion as a matter of taste; to (3) rationalist epistemologies, which construe knowledge, in a world of inference, as justified belief.

Piaget's most direct contribution to the psychological study of epistemic cognition is the empirical demonstration that children of 6 or 7 years distinguish logical necessities from empirical regularities and progress from there to higher levels of metalogical understanding that serve as the basis for hypothetico-deductive reasoning beginning about age 11 or 12. This work is central to understanding both logical and epistemic development, but Piaget's developmental psychology was more concerned with the former. Current research on epistemic development fills a gap in Piaget's developmental psychology that has important implications for his developmental epistemology.