

## Linguistic training facilitates mental-state reasoning in children with autism

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This study investigates the hypothesis that mental-state reasoning in young schoolchildren with autism benefits from linguistic support, in the sense that children learn more from experiences with divergent perspectives if these perspectives are highlighted verbally than if they are not. Specifically, previous studies (de Villiers & de Villiers 2003, Lind & Bowler 2009, Lohmann & Tomasello 2003, Tager-Flusberg & Joseph 2005) have suggested a causal role for complementation syntax with its embedding structure (*She thinks [he forgot it]*), and the present investigation evaluates the effect of complement clauses as opposed to simpler linguistic viewpoint marking by means of a training study. 44 high-functioning 6-9-year-old children diagnosed with ASD participated in the study where they were assigned to three conditions:

- 1) Complement clauses (incl. contrasting nouns, mental verbs and deceptive experience)
- 2) Simple clauses (incl. contrasting nouns, mental verbs and deceptive experience)
- 3) Minimal language (incl. deceptive experience)

Children's mental-state-reasoning skills before and after training were evaluated with false-belief tests and a test measuring understanding of lies and irony. Results show significantly improved mental-state reasoning in *both* linguistic training conditions, but only marginal improvement in the non-linguistic training condition. These findings support a conclusion that linguistic mediation of events enhances perspective-taking in high-functioning children with ASD over and above experience of situations with divergent mental states on its own. However, the unique role of complement-clause constructions with embedding syntax suggested by previous studies could not be confirmed for this age and level of ability as simpler linguistic viewpoint-marking appeared to be equally beneficial.

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