

Syntactic mediation of social cognition: Complement clauses and perspective taking in children with autism

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The complement-clause construction is a crosslinguistically widespread syntactic strategy for representing and communicating about perspectives on situations. With its embedding format, it allows speakers to present propositions that they agree or disagree with, to anchor these propositions in conceptualizers and to specify the perspectival relationship between conceptualizers and propositions, as in *dad says [it's his cake]* or *I know [it's my cake]* (Verhagen 2005).

Children's sociocognitive ability to represent and reason about their own and others' mental states, i.e. what they and others believe, know and feel, undergoes substantial development at around 3-4 years of age (Wellman *et al.* 2001), and de Villiers & de Villiers (2000) have proposed that language plays a causal role in this process. Specifically, de Villiers & de Villiers (2000) suggest that the complement-clause construction offers children a unique format for representing false beliefs, and this claim has found support in a line of studies with typically developing children (e.g. Hale & Tager-Flusberg 2003, Lohmann & Tomasello 2003, Low 2010).

Children with autism spectrum disorders have repeatedly been found to exhibit impaired sensitivity to others' mental states (Baron-Cohen *et al.* 1985, Happé 1994), but also in this population, correlation studies have demonstrated a relationship between complement-clause mastery and perspective taking (Lind & Bowler 2009).

The present study examines the direction of causality in this tight relationship between linguistic and sociocognitive development, investigating whether children with autism are able to use linguistic perspective marking as a tool for reasoning about divergent mental states. First, I report results from a correlation study involving 107 6-to-9-year-olds with autism or typical development, showing that complement-clause mastery is a significant predictor of advanced mental-state reasoning in both groups. Second, I present a training study including 54 children with autism assigned to two training conditions with linguistic mediation of perspectives and two control conditions without linguistic training. In the linguistic training conditions, children's perspective-taking performance improved significantly, whereas no improvement was found in the control conditions. Children trained with complement clauses advanced most, but simpler forms of linguistic perspective marking were also beneficial. Together, the two studies indicate that children with autism benefit from mastery of the complement-clause construction as a privileged tool for syntactic mediation of perspective taking.

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