

# **On the Relation between Theory of Mind and Language: A Review of Theory of Mind Development, Language Acquisition and False Belief Understanding**

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The Theory of Mind debate has a long tradition. The term, first introduced by Premack and Woodruff in 1978, describes “ the ability of a person to impute mental states to self and to others and to predict behavior on the basis of such states” (Leslie 1987, p.421). The development of the false belief task by Perner and Wimmer (1983) made this ability testable in young children. They found that 3 year olds failed to predict another person’s behavior if that person had a false belief, while 4 year olds were (slightly) above chance performance. Today, there are several versions of this test and other constructs to test Theory of Mind, as well as many papers about relevant findings.

Parallel to empirical research on how and when Theory of Mind develops, many philosophers and linguists have asserted that “natural language is a necessary condition for human beings to be capable of entertaining at least some kinds of thought” (Carruthers, 2002, p. 659). The hypothesis is that Theory of Mind relies on the understanding of certain properties of syntax - namely embedded sentences and complements. Among others, Janet W. Astington (1999) and Jill G. de Villiers (2002) take the view that language is needed to pass false belief tasks. They conducted separate longitudinal studies that proved mastery of syntax tasks to be a precursor for the false belief task performance in young children aged 3 to 5, but not vice versa.

Varley and Siegal (2000; 2001) and Apperly et al. (2006) tested the claim that language provides necessary processes for Theory of Mind reasoning in aphasic patients. These cases have been taken as evidence for the functional autonomy of Theory of Mind, as patients can perform almost perfectly on standard false belief tasks, but fail general language tasks due to their impairment. The results rule out a functional relation between grammar and Theory of Mind in adults and lead to the assertion that results showing language to be crucial for Theory of Mind rely exclusively on developmental processes.

The purpose of this Diploma thesis is to evaluate this claim. It will review the literature on the Theory of Mind debate and its empirical findings, concentrating on the false belief task.

Apperly et al. (2006) argue in their paper that one explanation for the strong correlation between grammatical ability and false belief performance in studies with young children could be that those investigations used the standard verbal tasks to assess Theory of Mind.

Ideally, one would use a non-verbal false belief task to provide some new information on the relation between language and Theory of Mind. Currently, there are only a few non-verbal Theory of Mind tasks, and even less for false belief reasoning, such as the versions by Call & Tomasello (1999) or Onishi & Baillargeon (2005). However, these tasks don’t allow a clear interpretation regarding the target relation and it can be argued, that the task by Call and Tomasello still relies slightly on language, since the critical question is asked verbally. Similarly, Perner and Ruffman (2005) question

the conclusions of Onishi and Baillargeon (2005), and give an alternative interpretation of the results that supports the view that linguistic communication underlies Theory of Mind.

One goal of this thesis is to discuss whether the development and utilization of non-verbal false belief tasks can reveal the true relation of language and Theory of Mind ability.

Another goal is to review the statements by Bloom and German (2000) who present reasons to abandon the standard false belief tasks. They point out (inter alia) that success does not only require Theory of Mind abilities, but also memory, attention, understanding the precise meaning of the test questions, and a certain degree of linguistic resources (understanding, processing, production). Thus, false belief reasoning may not be the most reliable way to test Theory of Mind, as beliefs are normally “supposed to be true” (p. B27). As their criticism focuses on the standard verbal false belief tasks, their statements should be reviewed with respect to non-verbal false belief tasks.

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