## Early development of theory of mind and its developmental relationship with receptive language

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## Abstract

Previous studies on Theory of Mind (ToM) using nonverbal and verbal ToM tasks have yielded conflicting result. It was reported that infant at 15-month were able to understand false belief as they passed nonverbal ToM test but children at age 3 could not understand the same concept as most of them failed verbal ToM task. This conflicting result has lead to the question of the nature of ToM - whether it is an innate instinct that appears early in life or an acquired ability that develops later in life. If ToM is an acquired ability, it may subject to influence from cultural process such as language acquisition. In the literature, correlation between children's language and ToM has been well documented which suggest that the two may have a developmental relationship. However, the directionality of this relationship as well as the precise aspect of language or ToM that influence each other's development was debatable.

In view of this, this study aim to investigate when do children acquire ToM, to confirm the direction of influence of the relationship between language and ToM and to investigate the contribution of receptive or expressive language on ToM development. 189 18-month-old children were tested 4 times over four years to assess their theory of mind (assessed by looking paradigm and verbal ToM task) and language development (assessed by Cantonese version of MacArthur-Bates Communicative Development Inventory and Reynell Developmental Language Scales).

It was found that infant at 18-month old did not pass nonverbal ToM test. Children first understand diverse desire at age 3 and mastery of other aspects of ToM such as false belief occur at age 4. Earlier language predicted performance in later ToM test but not the reverse. Moreover, receptive language has contributed to ToM development but not expressive language. These findings support the speculation that ToM is acquired during early childhood and is subjected to influence of receptive language development.