

# Young children's early sensitivity to linguistic indications of speaker certainty in their selective word learning



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## Abstract

In everyday conversation, both children and adults have an expectation that the speaker is telling the truth. In reality, however, this expectation is not always fulfilled, and both children and adults are equipped with a capacity for epistemic vigilance, i.e. a capacity to assess the speaker's trustworthiness in order to avoid being misinformed. The hearer's assessment of the speaker's trustworthiness is based on two criteria: his ability to provide true information and his benevolence toward the hearer. In two studies, we investigated how young children use these criteria, by focusing on two indicators of trustworthiness: linguistic expressions of speaker certainty, and personal familiarity. In the first study, both 3- and 4-year-olds were successful in distinguishing the degree of speaker certainty expressed by linguistic indicators and using it to assess the trustworthiness of the speaker. In the second study, children's ability to assess the speaker's trustworthiness on the basis of his attitude of certainty was further scrutinized. When pitted against personal familiarity, children's bias toward the certain speaker was modified in 5-year-olds but not 3 year-olds. The difference between the two age groups suggests that epistemic vigilance consists of a set of distinct components, with different developmental timelines.

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## 1. Introduction

In verbal communication, it is essential for the hearer to be consistently vigilant toward the source of information in order to avoid being misinformed (Sperber et al., 2010). Often, the source of information is another human being, i.e. an informant, and a vigilant hearer should be good at assessing the trustworthiness or reliability of the informant.

According to a standard model of trust, two distinct types or dimensions of trust can be identified. One is often called cognition-based, or cognitive, trust and the other affect-based, or affective, trust (Lewis and Weigert, 1985; McAllister, 1995; Weber et al., 2005). According to Lewis and Weigert, cognitive trust is based on rational assessment of the trustworthiness of a person, while affective trust is based on emotional attachment to a person. By its nature, affective trust is more likely to be present in close interpersonal relationships. In verbal communication, cognitive trust is based on the

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hearer's belief about the speaker's ability to provide accurate and reliable information, and affective trust is based primarily on the hearer's belief about the speaker's benevolence (Mayer et al., 1995).

Recent studies of children's ability to assess the trustworthiness of the speaker in the context of word learning have revealed that as young as 3 years of age, children show some ability to assess the reliability of the informant on the basis of his knowledgeability or accuracy (e.g. Clément et al., 2004; Koenig et al., 2004), although generally their performance was not as successful or consistent as that of 4- and 5-year-olds (Koenig and Harris, 2005; Pasquini et al., 2007). In addition, a few previous studies have revealed that 3-year-olds are quite competent both in learning a novel word from knowledgeable or certain informants and in not doing so from ignorant or uncertain informants (e.g. Birch et al., 2010; Jazwal and Malone, 2007; Sabbagh and Baldwin, 2001).

Within the standard dichotomy of interpersonal trust introduced above, children's trust of the informant on the basis of his knowledge, accuracy or confidence about the word-referent link is categorized as belonging to the dimension of cognitive trust. Young children's sensitivity to the other dimension of interpersonal trust, namely, affective trust, by contrast, has been relatively under-investigated so far (Landrum et al., 2013; Mascaro and Sperber, 2009; Xu et al., 2013). This is perhaps inevitable given that the nature and development of affective trust among adults has not yet been sufficiently examined (Dirks and Ferrin, 2002). The existing studies, however, suggest that preschool children generally trust a person with whom they have established a close relationship more than they trust a stranger (e.g. Corriveau and Harris, 2009). In other words, if a child hears a set of conflicting claims, one from an informant whom the child happens to believe is highly benevolent on the basis of his accumulated personal experience and the other from an informant whom the child has no idea whether he should trust or not, the child is more likely to accept the claim made by the informant with whom he has established a trusting relationship.

An interesting question then, from the viewpoint of pragmatic development, is this: how does a child react to a situation where the person the child trusts on the basis of her benevolence (affective trust) does not seem to be trustworthy in terms of her ability to provide reliable information (cognitive trust)? Previous studies suggest that 3-year-olds are willing to believe the statement from the informant who claims he has knowledge to support his claim (Sabbagh and Baldwin, 2001). However, the tasks in these studies involved two informants neither of whom had established long-term trust with the child participant in the past. It therefore remains to be tested whether a child trusts an informant who is more knowledgeable or confident about what he is talking about, even when the knowledgeable or confident informant is a stranger and the other less knowledgeable and less confident informant is someone whom the child knows to be highly benevolent.

The overall aim of the current study is to examine the early stage of epistemic vigilance by focusing on one particular cue to the informant's ability, namely, linguistic indications of speaker certainty. Our aim is two-fold. First, we will look more closely at how children's ability to understand linguistically encoded indications of speaker certainty develops. Children's sensitivity to linguistic expressions of the speaker's knowledgeability and confidence about his claim, for example, should improve their overall assessment of the speaker's trustworthiness. However, the nature and development of this sensitivity has been under-investigated so far and more research is urgently needed. Second, we will examine how children's sensitivity to linguistic expressions of speaker certainty interacts with personal familiarity. Following existing models of interpersonal trust (Lewicki and Bunker, 1996; McAllister, 1995), we assume that both adults and children are likely to perceive benevolence in a person with whom they have a close interpersonal relationship. Our assumption is that children's sensitivity to linguistically encoded indications of reliability, as well as their perception of benevolence in the familiar speaker, develops as part of their competence in utterance interpretation, which typically involves fast, spontaneous and unconscious processing that is likely to be domain-specific (Sperber and Wilson, 1995, 2002). Our current study, therefore, can be seen as an investigation of children's developing competency in verbal communication.

## 2. Children's developing sensitivity to linguistic expressions of speaker certainty

Children's understanding of the speaker's attitude of certainty about the propositional content of his utterance has been investigated by only a few studies so far (e.g. Brosseau-Liard et al., 2014; Matsui et al., 2006, 2009). Of these, the studies conducted by Moore and his colleagues are probably the most widely known. Moore and his colleagues carried out a series of experimental studies which tested whether young children can adequately distinguish the semantic/pragmatic difference between word pairs such as *know* and *think* (Moore et al., 1989). In these experiments, children were asked to identify the location of a hidden object on the basis of two conflicting claims made by two different speakers. One claim was always preceded by an expression of speaker certainty (e.g. 'I know it's in the red box') and the other by an expression of speaker uncertainty (e.g. 'I think it's in the blue box'). Children were expected to trust the claim preceded by an expression of speaker certainty. The results of the experiments suggest that there is a threshold between 3- and 4-year-olds: 4-year-olds were capable of differentiating the degree of speaker certainty associated with each of the two verbs, while 3-year-olds were not. In another study, Moore and his colleagues included modal expressions such as *must* and *might* as one of the verbal clues, as in 'It might be in the blue box' vs. 'It must be in the red box' (Moore et al., 1990). They found that children's understanding of modal expressions correlated strongly with their understanding of mental verbs.

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