

The Effect of “Infant-directed Speech” on Word Comprehension of 3- to 4-year-old Children

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Adults usually make prosodic modifications of their speech when talking to infants. This unique speech style is called infant-directed speech (IDS). This type of speech is characterized as having a higher pitch, a wider range, a slower speed, and longer pauses compared to adult-directed speech (ADS). While many researchers have shown the effectiveness of IDS in preverbal infants, such as attracting their attention and facilitating their language acquisition, there is a lack of studies which explore whether IDS facilitates speech comprehension in older children. Therefore, this study was conducted on 3- to 4-year-old children, with the aim of investigating the effect of IDS on their speech comprehension. Additionally, attentive and affective preferences for IDS were also examined.

The children were required to perform three tasks as instructed through recordings of either IDS or ADS female voices: the hammer toy task, the picture selection task, and the storytelling task. In the hammer toy task, the participants were to perform correct motor responses following the recorded audio instructions delivered using IDS or ADS. The picture selection task required the participants to choose the correct card matched with a sentence delivered using another recording of IDS or ADS. The storytelling task required the participants to listen to a recorded story delivered using IDS or ADS, while they were shown picture cards. After this, they were made to answer four questions about the story. Furthermore, additional tasks and analyses were conducted to investigate if there is a preference for either IDS or ADS. Attentive preference was examined by measuring the duration of the participants' gaze towards the picture cards in the storytelling task. Affective preference was also examined by the participants' selection of animal puppets which delivered recordings of instructions using IDS or ADS during the hammer toy task, and by measuring the length of time they were smiling during the storytelling task.

In terms of speech comprehension, the results did not show any differences between the use of either IDS or ADS. These results were not consistent with some previous studies which have shown the effectiveness of IDS on novel language acquisition during later stages of development. A possible reason for the results is the idea that children must access not only abilities of language learning but also many other aspects of cognitive skills when they try to understand comprehensive speech. Moreover, the attentive function of IDS was also not found. Contrary to the expected result, the fifth picture card showed a smaller proportion of time spent looking at the picture card in the IDS condition than in the ADS condition. This suggests that a slower tempo of IDS possibly distracts children.

On the other hand, the results showed that there was a moderate affective preference for IDS. Specifically, IDS selections happened more frequently compared to ADS selections during the hammer toy task. Smiles were also observed at a higher rate under the IDS condition than under the ADS condition during the storytelling task, although these differences were not significant. The findings suggested that IDS may not aid in facilitating 3- to 4-year-olds' speech comprehension, but may still elicit positive emotions. Affective functions of IDS on older than 4 years should be explored in future studies. (比較発達心理学)