

Evidence Briefing

Quantity vs quality of child-directed speech: Which matters most?

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Is it the number of words children hear (quantity) or the kinds of words we use and interactions we have with children (quality) that make the biggest difference to their language development? This briefing summarises the evidence.

Quantity of child-directed speech

One of the important issues in studying language development is how much the language children hear affects their own learning.

There are vast differences between the amount of talk addressed to children and the speed with which children learn language. For example, in a study in the USA where parents filled in checklists about their 18-month-old children's early vocabulary knowledge, the slowest children were reported by parents as knowing only 4 words while the fastest children were reported as knowing 320¹.

In our own LuCiD 0-5 study, in which infants were fitted with recorders for one day at 18 and 21 months, those with the most talkative parents heard an average of 43,926 words per day while children of the least talkative heard 7,239 words a day².

In a similar study using day-long recordings in the USA, Gilkerson et al. found that children from lower socio economic status (SES) families vocalised less and heard fewer words per day than children from higher SES families, whilst also pointing out that there was a wide range of variation within SES groups as well as in the average difference between them³.



Of course, the million dollar question is whether there is any relationship between these two measures: do children who hear a lot of talk learn more vocabulary and learn language faster?

There is much research showing relationships between the amount of talk infants hear and their rate of vocabulary development. Children whose parents talk a lot to them have

faster vocabulary development^{4,5}. A study by Hurtado, Marchman & Fernald showed that the amount mothers talk to their 18-month-old infants is related to how fast the children react to words and also the size of their vocabulary at 24 months⁶.

Quality of child-directed speech

While the amount of talk is important, the quality of talk may be even more critical, especially beyond the very early stages of word learning. Thus, the extent to which caregivers talk about what the child is paying attention to, the number of different words caregivers use, and the amount they talk about events outside the 'here and now' have all been used as measures of input quality.

Using 'contingent talk' and 'expansions'

At the earliest stages of acquisition (i.e. around 18 months of age) tuning into children's current focus of attention and labelling objects they are interested in (contingent talk) is related to the range of words they use^{7,8,9}. We know from many studies that responding to children's utterances by expanding them (expansions) is related to a range of language measures, including children's ability to correctly form questions¹⁰, plurals and past tense¹¹ and to their mental state vocabulary¹². A number of studies have found benefits for expanding the utterances of children with developmental language disorder or who were late talkers¹³. So, in addition to what may be direct effects of the frequency with which constructions are heard in general, conversational turns which focus on what the child has just said also affect children's language development.

Conversational turns

In the LuCiD 0-5 study, conversational turns between caregiver and child ranged from 300 -1804 per day². Conversational turns are important because they can provide an immediately relevant model which contains grammatical information as well as information about how other words are related to what the child has just said. Because this contingent talk is very close in time to the child's own utterance and is related to it, it provides a rich source for learning new aspects of language. A recent paper by Romeo et al. suggests that conversational turns in the home environment continue to be important for 4-6 year-old children's verbal skills over and above relations with SES or the quantity of words heard¹⁴.

Using diverse vocabulary and more complex grammar

As children get older (around two years), using a diverse vocabulary including rare or infrequent words becomes more important to enable them to develop a more sophisticated vocabulary¹⁵. In addition, there is good evidence for the beneficial effects of more complex grammar in parental speech on children's language outcomes^{16, 17}. A study of fathers' speech to their 24-month-old children in the Early Headstart program found that their use of wh-questions (what, who, where, why and how questions) was related both to their children's vocabulary and to their reasoning skills a year later, but the sheer amount of talk to the children did not predict either of these measures¹⁸.

Additionally, Hoff showed that socio-economic differences in the language ability of two year olds can be explained largely in terms of differences in caregiver speech and that the crucial difference was that caregivers in the high SES group used more complex utterances and a wider range of vocabulary¹⁹. Furthermore, Jones and Rowland (2017) developed a computer model which also performed better on a range of language learning tests when it learned from a wider vocabulary range rather than just a larger number of sentences²⁰.

Talking about the past and future

At even later ages (from around three years) children whose caregivers talk to them about things and events outside the 'here and now' e.g. what happened yesterday and what will happen tomorrow - 'decontextualized talk' - understand a greater number of words¹⁶. An earlier study by Huttenlocher and colleagues found that children whose teachers used more complex utterances at the beginning of the school year showed better comprehension and production of more complex language at the end of the school year²¹.

Conclusion

The results presented here are fairly well established in the literature for children and families in what are called WEIRD (Western, Educated, Industrialised, Rich, Democratic) cultures.

There are many questions that we still do not know the answers to. One issue is that the studies largely focus on parent-child interactions, so we know little about the effects of others, such as older siblings, grandparents and other carers, on children's language development. Another is the precise relationship between quantity, immediate responsiveness and quality or complexity. On the one hand, these relationships are very unlikely to be linear; what a child can take in and process is going to depend on his or her own level of development and how the caregivers and others change their language as a result.

Language learning is obviously a highly interactive process, but the bottom line from all the research so far is that talking to children in a way that incorporates what they are interested in and adjusting the complexity of what we talk about as a function

of the child's interest and developmental level, are centrally involved in promoting successful language development.

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Further information

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