Early Language Gaps: Sources and Solutions

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Child development is the result of mental capacities operating on information provided by the environment: **The environment matters**
The environment is a multi-layered system influenced by social and cultural factors.
The environment consists of everyday experiences.
One of those meaningful differences is the Thirty Million Word Gap
Figure 19. Cumulative number of words addressed to the child in 13 professional (squares), 23 working-class (plus signs), and 6 welfare families (triangles) extrapolated from birth to 12 months of age and from 37 to 48 months of child age. The linear regression line was fit to the actual average cumulative number of words addressed to the children per hour when they were 12–36 months old.
Consequences of the gap for children

Figure 2. The widening gap we saw in the vocabulary growth of children from professional, working-class, and welfare families across their first 3 years of life. (See Appendix B for a detailed explanation of this figure.)
Evidence that it’s the experience provided by parents that matters

• In Hart & Risley’s data
  ○ SEI (an index of SES) accounted for 42% of the variance in children’s rates of vocabulary growth
  ○ Parenting measures accounted for 61%
  ○ Within groups, SEI was not predictive; the parenting measure was

• In other studies
  ○ Maternal language use and communicative behavior predict differences within SES levels (Pan, Rowe, Singer & Snow, 2005; Rowe, Pan & Ayoub, 2005; Wiesleder & Fernald, 2013)
  ○ SES-related differences in children’s input account for SES-related differences in children’s language (Hoff, 2003)
Early experience also accounts for later SES-related differences in child outcomes

Other parenting measures were *language diversity* (number of noun and adjective types per hour), *feedback tone*, *symbolic emphasis* (number of nouns, modifier, and past tense verbs per utterance), *guidance style*, *responsiveness* (adjacent utterances).
Many more findings point to these same conclusions:

- There are large SES-related disparities in children’s language experience
- Those disparities in experience cause disparities in the development of oral language skills
- Oral language skill at school entry predicts subsequent language and cognitive development and academic achievement
This is the story that the data tell

- SES
- Early language experience
- Early language skills
- Later academic achievement
What can we do about it?

• Early intervention to improve children’s experience during their early years is the best bet.

• It is better to prevent gaps before they begin than to try to close them later.

How early do we need to start?
Figure 2. The widening gap we saw in the vocabulary growth of children from professional, working-class, and welfare families across their first 3 years of life. (See Appendix B for a detailed explanation of this figure.)
SES differences in vocabulary and language processing skill are evident at 18 months.

Fernald, Marchman, & Weisleder (2013) Developmental Science
Volume 16, Issue 2, pages 234-248, 8 DEC 2012 DOI: 10.1111/desc.12019
Fernald, Marchman, & Weisleder (2013) Developmental Science
Volume 16, Issue 2, pages 234-248, 8 DEC 2012 DOI
Figure 6. Disparities on the Bayley Cognitive Assessment at 9 and 24 Months, by Mother’s Education

Mean score for children whose mothers had a Bachelor’s degree or more

Where do we intervene?
An example of a parent-focused intervention: Thirty Million Words LENA Recording Results

Visits 1-3 = baseline, 4-10 = intervention, 11+ post.

- All participants completed 14 LENA recordings, completed pre-, post-intervention and followup measures to evaluate sustainability.
- Participants receiving the TMW intervention significantly increased knowledge of child language development and amount of talk with their children (p<.01). Child vocalizations also increased over baseline for treatment group.

Suskind et al., 2013
And, an argument for preschool intervention

• Many children spend many hours in nonparental care before they reach school age.
  
  • Children’s language experience with teachers and childcare workers is related to their language development (Hoff, 2006; Huttenlocher et al., 2002; Dickinson & Porche, 2011).

• Many children live in homes where a language other than English is spoken - 20% of all children in the U.S. and 41% of U.S. children living in poverty.
  
  • These children frequently enter school with inadequate English language skills, and they may have limited access to native English speakers at home.

• School is too late for them too:
Fitted growth trajectories in reading for native English speakers, language minority learners who entered kindergarten with initially full English proficiency (LM-iFEP), and language minority learners who entered kindergarten with initially limited English proficiency (LM-iLEP) and late qualified for the reading test in each round (N = 17,385). IRT = item response theory.

Why the focus on native (or near native) English speakers?

• Child-directed speech provided by native speakers is more supportive of language development than child-directed speech provided by nonnative speakers.

• This has implications for staffing high quality preschools.
The relation between English use at home and 4-year-old children’s English and Spanish vocabulary

Hoff et al., 2013
In sum,

• Many children do not have the early language experiences that support the development of good oral language skills.

• Good oral language skills (in English) are necessary to succeed in U.S. schools.

• Schools don't close the gaps; schools begin too late.

• The gaps begin very early.

• Efforts to close the gaps must begin early too.
Thank You