Effect of Elicitation Variables on 2-year-olds’ Production of Known Words
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Background
- Over the past 6 decades, numerous studies have investigated how elicitation procedures influence children’s speech production [1,2]
- Elicitation variables studied include:
  1. Spontaneous production vs. imitated production
  2. Single word production vs. connected speech
- Findings have been contradictory: some studies have found no differences while others have found significant differences between words produced under different elicitation conditions [3,4]
- Previous studies have looked primarily at children over 3 years of age and at children with diagnosed speech-sound disorders
- The current study will look at the effect of elicitation variables on the speech of typically developing 2-year-olds

Questions addressed:
1. Are imitated productions more or less accurate than spontaneously produced words?
2. Are imitated productions produced with more or less intra-word variability than spontaneously produced words?
3. Are single word productions more or less accurate than words produced in connected speech?
4. Are single word productions produced with more or less intra-word variability than words produced in connected speech?

Methods
- **Participants:** 14 children: 7 typically developing 24-month-olds (3 male, 4 female) and 7 typically developing 29-month-olds (3 male, 4 female)
- **Data collection:** 1 video-recorded 60 minute session with parent and experimenter present
  - Multiple productions of known CVC, CCVC, and CVCC words elicited through play, picture naming, and book reading
  - Broad phonetic transcription of target words
  - Only words produced in both conditions being compared were included in the analysis (e.g. duck in isolation vs duck in connected speech)

Measures:
1. Percent consonants correct (PCC): PCC averaged over all productions of each word
2. Proportion of whole word variability (PWV): 
   \[
   \text{PWV} = \frac{\text{total # of productions of same word}}{\text{number of different productions of a word}}
   \]
   “different productions” ≠ same word produced with different consonants or syllable structure

Data set:
- **Spontaneous vs. Imitated**
  - PCC analysis: 207 word types compared
    - 1404 tokens
  - PWV analysis: 77 word types compared
    - 1262 tokens
- **Isolation vs. Connected speech**
  - PCC analysis: 302 word types compared
    - 1993 tokens
  - PWV analysis: 154 word types compared
    - 1202 tokens

Results

**Spontaneous vs. Imitated**
1. No significant differences in PCC between spontaneous (60.88%) and imitated (61.82%) conditions
   - 79 words (38%) had equal PCC
   - 59 words (29%) had higher PCC in spontaneous condition
   - 69 words (33%) had higher PCC in imitated condition
2. Difference for PWV approached significance (p=.06) (34.09% in spontaneous; 50.77% in imitated)
   - 21 words (27%) had equal PWV
   - 19 words (25%) had higher PWV in spontaneous condition
   - 37 words (48%) had higher PWV in imitated condition

**Isolation vs. Connected speech**
3. No significant differences in PCC between words in isolation (63.26%) and words in connected speech (61.33%)
   - 118 words (39.07%) had equal PCC
   - 89 words (29.47%) had higher PCC in isolation
   - 95 words (31.46%) had higher PCC in connected speech
4. No significant differences in PWV between words in isolation (43.53%) and words in connected speech (43.76%)
   - 51 words (33.12%) had equal PWV
   - 53 words (34.42%) had higher PWV in isolation
   - 50 words (32.47%) had higher PWV in connected speech

Discussion
- Adds to body of evidence suggesting that imitated productions can be included in research and clinical analysis without significantly affecting results
- Extends results to younger, typically developing children
- Findings regarding higher variability in imitated productions should be interpreted with caution: higher PWV may be an artifact of having many fewer tokens in the imitated condition
- Result that accuracy and variability do not differ in isolation vs. connected speech is surprising, but consistent with other findings from studies of older typically developing children [6]

Studies comparing single word production vs. connected speech in children with speech-sound disorders, however, have found higher error rates in connected speech [7]

SELECTED REFERENCES:

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