

Presentation of a Method for Comparing Child
and Adult Phonological Forms
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In this international project we need criteria in common with the other groups to decide what shall be counted as a word. This is a presentation of a procedure for determination of words prepared by Dr. Marilyn Vihman at Stanford University and Dr. Lorraine McCune at Rutgers University. In the Swedish branch of the project we have used this procedure with certain modifications.

In this project we concentrate on early words based upon adult forms, i.e. we do not consider 'protowords'. In early child language there is on one hand phonetic forms mirroring an attempt to produce an adult form within the constrictions of child language reduction rules and phonological processes such as fronting, stopping, gliding, and consonant/vowel-harmony, on the other hand there is an intentional use of this phonetic form in due context, submitted to semantic rules of child language.

The adult wordform may be nominal as well as onomatopoeic, illustrating animal and vehicle sounds or eating. There are two basic criteria which should be met by the child form. One is that the utterance of the child must have a minimal phonological similarity to the adult form. By minimal phonological similarity we mean at least a two segment match. The words must have been used in a plausible context related to an event or object.

If these functional and phonological conditions are met, the utterance achieves the status of a 'word candidate' and will be submitted to a thorough examination before the final decision regarding word status is taken.

After an evaluation including a very strict phonological scoring procedure as well as observations and estimations of determinative context and other evidential factors such as frequency of use and stability of form and context the word status of the utterance is settled. This procedure is described by Table I.

Table I

BASIC CRITERIA

Plausible form?	Plausible context?
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W O R D C A N D I D A T E

FORM	CONTEXT
Exact match	Determinative context
Complex match	Identification by the mother
Prosodic match	

ADDITIONAL EVIDENCE

Frequent use in and/across sessions
Stability in context and form

W O R D

Concerning phonological matching there are forms that either show an exact match to the adult form or a complex match, i.e. more than the minimum two segments of the adult form. There are also forms that show a prosodic match in fundamental frequency or voice quality.

An explicit scoring-procedure is set for phonological matching, where bonus is given for agreement with the corresponding adult form and penalty for certain deviances, could they not be related to common processes of child language. In that case they will be accepted without penalty.

We find in this elaborate scoring system a sympathetic aim at crediting every reflection of the adult form on segmental, syllabic, or prosodic level. The fundamental principle is that each segmental agreement or each feature that is not expressed elsewhere in the child form should be credited with one bonus point. Demands of agreement, however, are heavier between consonants than between vowels. Vowels are allowed to deviate one feature along the parameters high/mid/low, front/central/back, rounded/unrounded, while consonants should have full agreement to get bonus, except for the feature voiced/voiceless and the feature place for sibilants. Additionally scores are given for deviant segments where you can trace a common phonological process as a cause for the deviation. Bonus is given also for language-specific traits of English such as off-glide and vowel length.

On the syllabic level agreement in phonotactic structure is given bonus. Since it is believed that post-tonal syllables in poly-syllabic words are difficult for the child to perceive, one bonus point is given to syllables that follow the post-tonal syllable, irrespective of numbers, provided there are post-tonal syllables in the adult form. On the prosodic level bonus will be given for pitch and/or voice quality matching the adult form.

Penalty score will be given for added segments and for substitutions that cannot be understood as a product of common phonological processes in child language. The heavier demand on agreement of consonants than of vowels is partly due to the greater difficulty in reaching acceptable reliability inter transcribers when dealing with vowels. Added syllable including a 'true' consonant will be scored two penalty points, while added syllable without 'true' consonant will be scored one penalty point. Mismatch in unstressed vowel will render one penalty point. Segmental errors in pre-tonic syllables as well as in unstressed syllables are disregarded.

To apply a scoring system like this is somewhat problematic. It is hard to guarantee that you have accounted for all factors included. One major problem is to decide on what level, phonetical or phonological, the adult forms should be represented, whether on phonetic or phonologic level. One form representing a plausible articulation might show a great variation on account of reduction degree, speech rate, focus etc. By all means the transcripts of child forms are more narrow than the corresponding representation of the adult form.

The results from the other groups will show to what

extent the scoring system has been adapted to the different languages in the study. The Swedish group has proposed the following modifications for the Swedish data: Bonus scores should be rendered for vowel and consonant matching length, for matching accent II, and for correct number of syllables.

We do not consider vowel off-glide bonus relevant for Central Standard Swedish. Nor do we use the classification pretonal, tonal and post-tonal syllable as references for scoring since the reduction rules and stress rules of American English are significantly different from those of Swedish.