

Lucy's Performance on the Nonsense-Syllable Speech Perception Task (10/6/05)

In the main speech perception task of the study, Lucy listened to three syllables, such as *pa* (1) - *ba* (2) - *pa* (3), and decided which syllable was different from the other two. The different sound could be the consonant or the vowel, and it could occur in any of the three positions. The different consonant could start the syllable or end it. The syllables were played on the laptop computer and were spoken by 22 different talkers. Lucy had three blocks with the numbers 1, 2, and 3 in front of her as she listened. She indicated her answer by moving the block in the position of the sound she had chosen.

Lucy made errors (at rates of 18% or higher) for 18 sounds (13 consonants and 5 vowels). Percent correct for consonants was:

Sound (listed as printed English)	% Correct	Number of Errors/Number of Times Tested	% Errors
L	82%	2/11	18%
d	82%	2/11	18%
th (voiceless)	80%	2/10	20%
r	80%	1/5 (not tested many times)	20%
sh	75%	2/8	25%
s	75%	1/4 (not tested many times)	25%
m	70%	3/10	30%
y	67%	1/3 (not tested many times)	33%
ch	67%	2/6	33%
b	62%	3/8	38%
k	60%	4/10	40%
ng	50%	1/2 (not tested many times)	50%
p	25%	6/8	75%

Lucy made errors (at rates of 18% or higher) for 5 vowels. Percent correct for these vowels was:

Sound (listed as printed English)	% Correct	Number of Errors/Number of Times Tested	% Errors
Short "o" (in <i>hot</i>)	82%	4/22	18%
Long "e" (in <i>see</i>)	75%	2/8	25%
er	75%	1/4 (not tested many times)	25%
Short "e" (in <i>bed</i>)	73%	3/11	27%

Short “u” (in <i>cut</i>)	56%	4/9	44%
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On the speech perception task, four error patterns are evident for consonants and four error patterns for vowels. For consonants, the patterns are:

1. Stop consonants (p, k, b, d) (with a popping sound) are harder for Lucy to perceive than fricative consonants (such as f, v, z, and so on, with a noisy sound). Typically stop consonants are some of the earliest sounds that young preschool children master in their speech. Lucy is having particular difficulty with “p”, which is a very early sound. Also, as another example, children with hearing impairments typically have problems with fricative consonants, rather than stop consonants, so Lucy’s error pattern is not what we usually see.
2. Labial consonants (p, b, m; made with the lips) are difficult for Lucy. Typically these are some of the earliest sounds that young preschool children master in their speech.
3. Palatal and velar consonants (ch, sh, k) (made at the back of the mouth) are difficult for Lucy.
4. Alveolar consonants (d, l), made just behind the front teeth, are difficult for Lucy.

For vowels, the error patterns are:

1. There are three anchor vowels in early speech development of young preschool children. These are Long “i”, Long “u”, and Short “o”. Two of these three early vowels are difficult for Lucy to perceive. Difficulties with early vowels may cause her significant problems in recognizing words when she listens in difficult listening situations (noise in the background, long sentences to remember, long words to learn, etc.)
2. Vowels somewhat high and near the front of the mouth (Long “e”, Short “e”, Short “u”, and perhaps “er”) are difficult for Lucy.
3. The Short vowel “o”, in the back of the mouth and low, is difficult for Lucy.
4. Three of the five vowels that are difficult for Lucy are what we call “short” vowels in phonics or early reading training (Short “e”, “Short “u”, and Short “o”). These are often hard to learn and remember for young children in grade school, because the vowel does not say its name. This might make it hard for Lucy to clearly remember and identify the vowel when she listens.

Report prepared by Dr. Cynthia J. Johnson - Please contact me if you have questions!

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