

**(Almost) Everything You Wanted to Know
About Phonological Awareness and Were
Afraid to Ask:
Research and Practices**

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What is Phonological Awareness?

Definition: Phonological awareness is the ability to detect, manipulate, and use the sound structure of spoken language independent of meaning.

What is Phonological Awareness?

Examples of tasks requiring phonological awareness:

- ❑ Detection Tasks
- ❑ Blending Tasks
- ❑ Elision Tasks
- ❑ Counting Tasks
- ❑ Reversal Tasks

Why is Phonological Awareness Important?

- ❑ Research has converged on the finding that phonological awareness plays a key role in the normal acquisition of reading.
- ❑ Children who are better at detecting and manipulating syllables, rhymes, or phonemes learn to read faster than children who cannot complete these tasks.

Why is Phonological Awareness Important?

- This relation is present even after variability in reading skill due to factors such as IQ, receptive vocabulary, memory skills, and social class is taken into account.

Why is Phonological Awareness Important?

- ❑ The most common cause of early reading difficulties is a weakness in children's phonological processing skills.
- ❑ Children with poor phonological processing skills have difficulty "cracking" the alphabetic code that connects the graphemes in written alphabetic languages to the phonemes in spoken language.

Why is Phonological Awareness Important?

- ❑ Children without strong phonological processing skills do not have an effective strategy for decoding unfamiliar words when they are encountered in print.
- ❑ These children tend to rely too heavily on contextual cues to guess the unfamiliar word rather than using knowledge of phonics to decode it.

Why is Phonological Awareness Important?

- ❑ Consequently, their attempts to decode unfamiliar words result in many word-reading errors.
- ❑ Reading grade-level material is difficult, and many of these children begin to develop negative attitudes about reading, resulting in reduced opportunities to practice reading.
- ❑ They also experience problems developing a good sight-word reading vocabulary.

Why is Phonological Awareness Important?

- There are two key components to successful reading.
 - the ability to accurately and fluently identify individual words in print (decoding)
 - good general language comprehension skills

Why is Phonological Awareness Important?

- ❑ Fluent decoding seems to depend heavily on a well-developed sight-word repertoire (i.e., words that are processed quickly based on stored spelling patterns).
- ❑ Children's sight-word vocabularies are built through repeated accurate readings of a word.

Why is Phonological Awareness Important?

- ❑ Children with poor phonological processing skills have difficulty developing the large body of sight-words required to become a fluent reader because of
 - inaccurate readings of words, and
 - reduced exposure to print associated with low motivation.

The Nature of Preschool Phonological Awareness

- ❑ Almost all research on phonological processing skills involving preschool children has examined phonological awareness.
- ❑ The question of the role of children's early phonological awareness for later reading is complicated by controversy concerning the structure of preschool phonological awareness.

The Nature of Preschool Phonological Awareness

- ❑ Several theorists have argued that various tasks designed to measure phonological awareness tap separate and independent abilities.

The Nature of Preschool Phonological Awareness

- Advocates of this separate phonological abilities model tend to stress the importance of phoneme manipulation skills (i.e., phonemic awareness) for reading because:
 - (a) It is at the level of the phoneme that graphemes correspond to speech sounds, and
 - (b) because individual phonemes do not have separable physical reality.

The Nature of Preschool Phonological Awareness

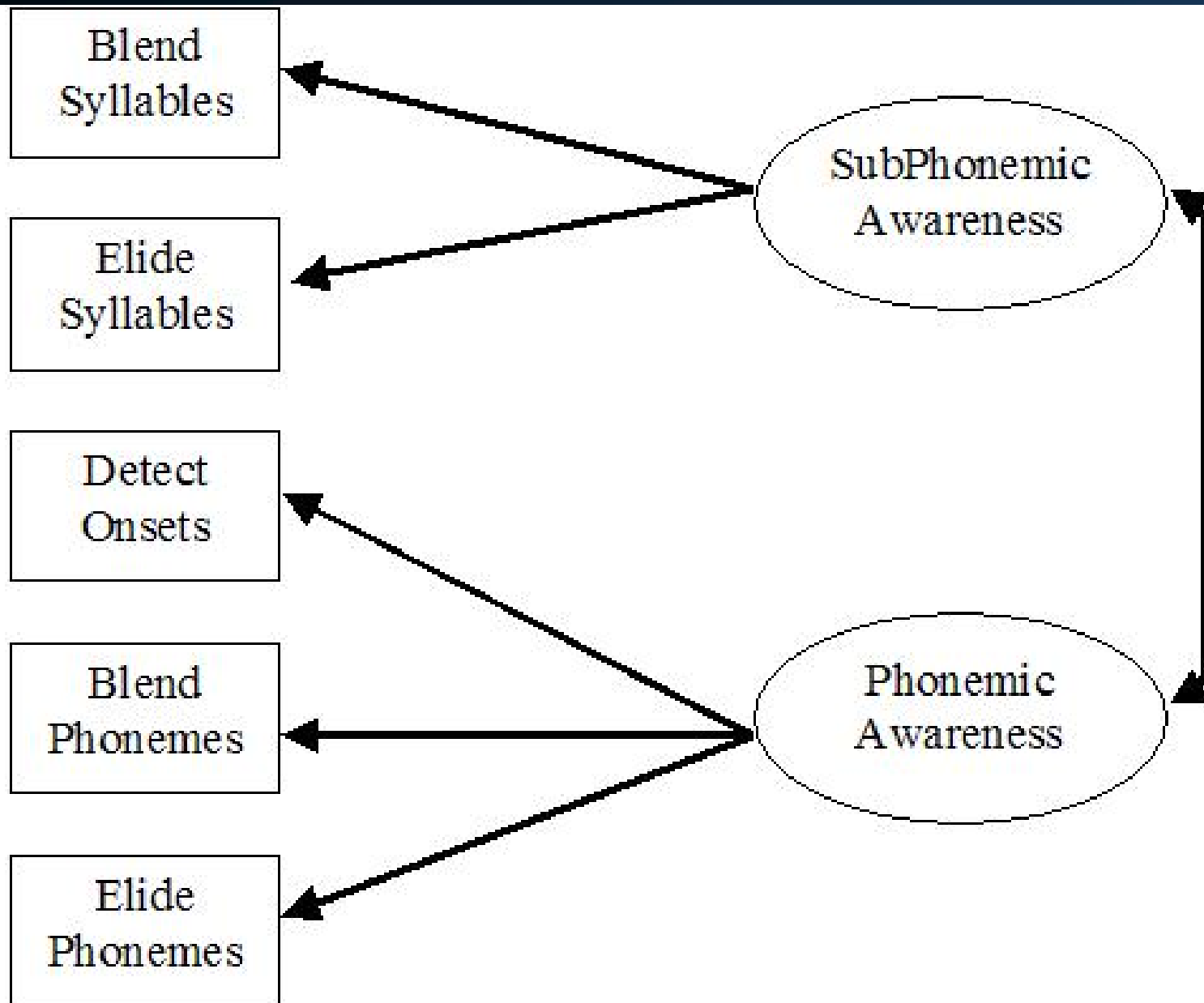
- ❑ This narrow conceptualization of phonological awareness excludes those skills that involve:
 - manipulation of linguistic units larger than a phoneme
 - detection rather than production or manipulation of phonological information.

The Nature of Preschool Phonological Awareness

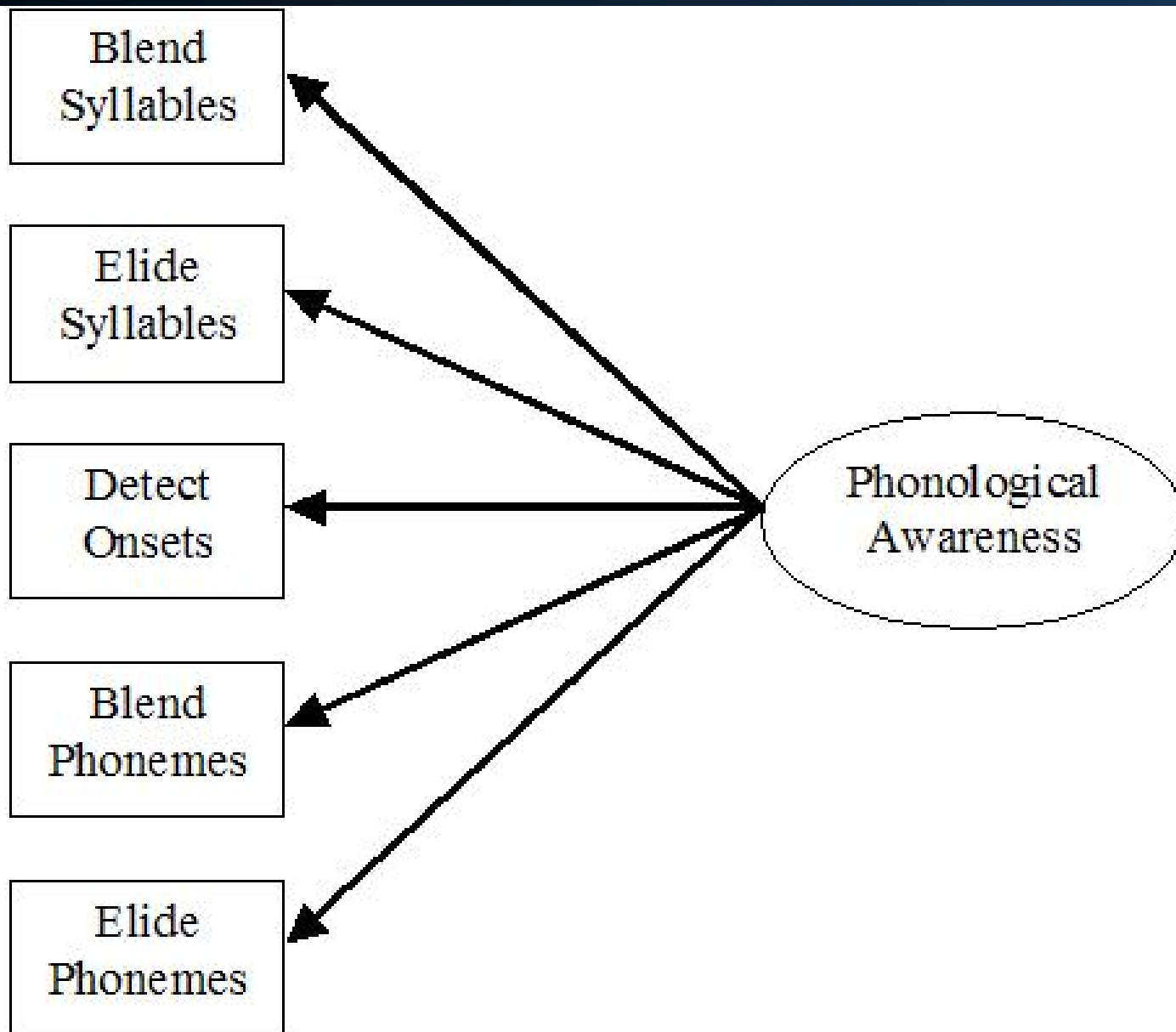
- ❑ The importance of this debate is that phonological awareness tasks that involve manipulation of phonemes are too difficult for the majority of preschool children.
- ❑ In contrast, supraphoneme awareness tasks that involve detection or manipulation of larger linguistic units (e.g., syllables, onset-rime) are within the capacities of many preschool children.

The Nature of Preschool Phonological Awareness

- We have examined the issue of the dimensionality of phonological awareness empirically in a number of studies involving preschool and early grade school children.
- Question: Are tasks designed to measure preschool phonological awareness best described as representing one, two, or more distinct abilities?



Example of a multiple abilities model: Phonological awareness tasks are best characterized as representing two distinct underlying abilities.



Example of a single ability model: All phonological awareness tasks are best characterized as representing a single underlying ability.

The Nature of Preschool Phonological Awareness

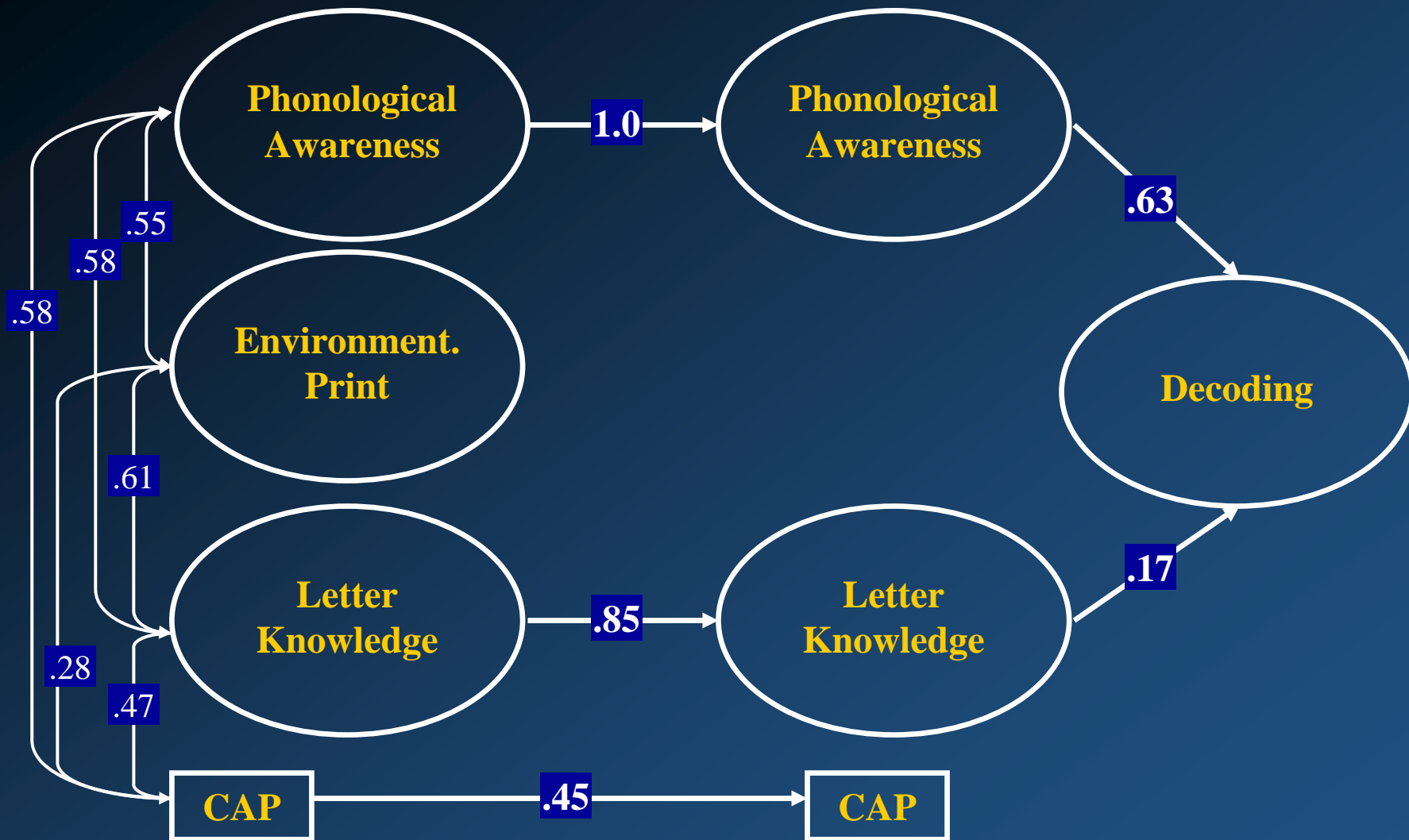
- ❑ In several samples of 2- to 6-year-old children, we used confirmatory factor analysis to compare plausible theoretical and atheoretical model variations (e.g., single-factor model, phoneme vs. subphonemic 2-factor model).
- ❑ Tasks measured children's abilities to detect, blend, or elide words, syllables, onset-rimes, or phonemes.

The Nature of Preschool Phonological Awareness

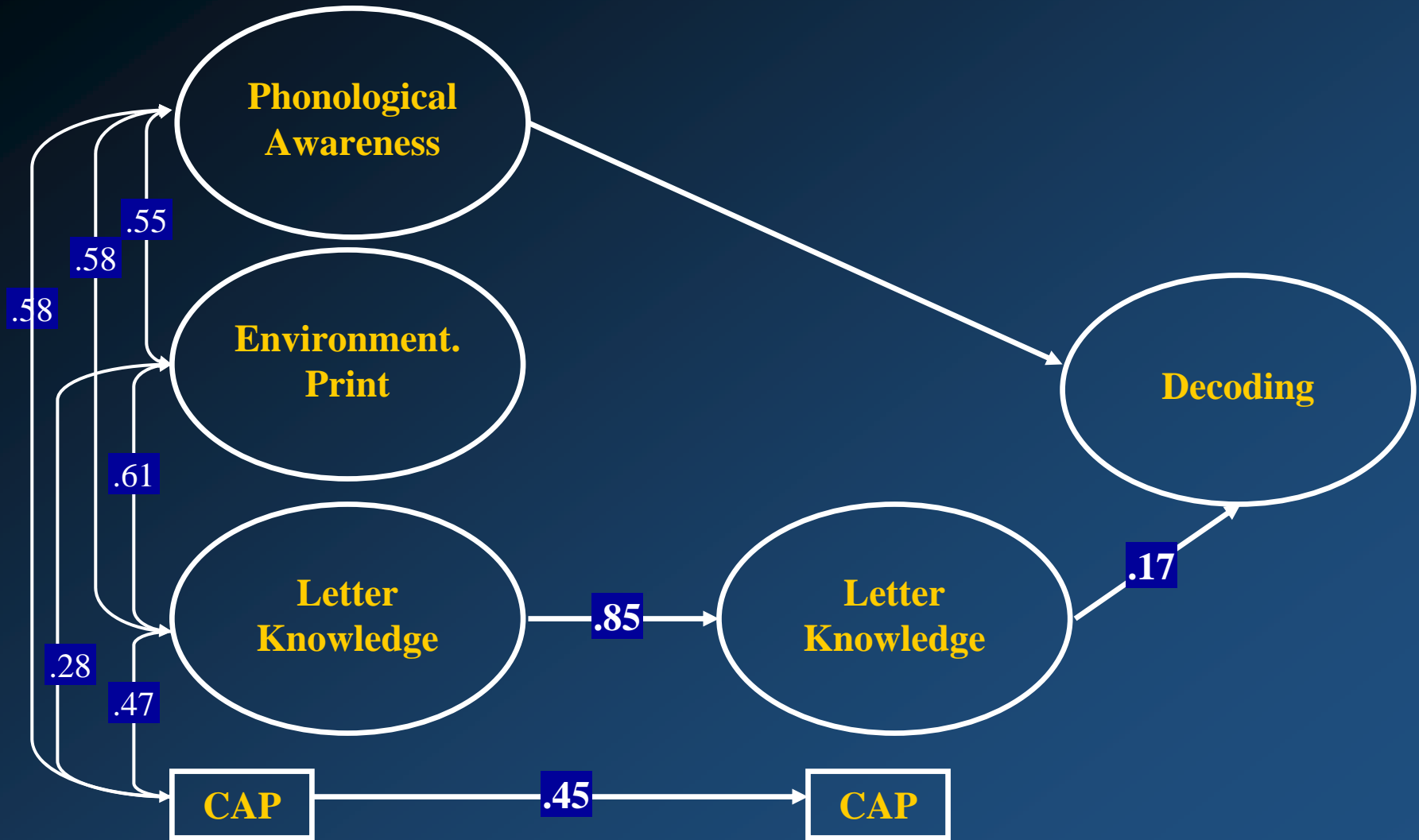
- ❑ Across these diverse samples of children, a single-factor model provided an adequate characterization of the data.
- ❑ Models with two or more factors generally did not provide a better fitting model.

The Nature of Preschool Phonological Awareness

- ❑ In our longitudinal study (described in general session), our early measures of phonological awareness were mainly measures of children's abilities to detect or manipulate large sound units.
- ❑ The follow-up measures of phonological awareness included a large number of phoneme-level items.



Longitudinal Prediction of Early Decoding Skills



Longitudinal Prediction of Early Decoding Skills

Development of Phonological Awareness

□ Most research suggests a developmental conceptualization of phonological awareness in which phonological awareness manifests in increasingly complex ways as children mature.

□ Phonological awareness appears to develop along two dimensions:

- linguistic complexity
- cognitive operations.

Development of Phonological Awareness

- ❑ In terms of linguistic complexity, development follows a progression in which children are sensitive to smaller and smaller units of sound.
- ❑ This stage-like development, progresses from sensitivity to larger linguistic units that are based on the concrete physical characteristics of an auditory stimulus (words, syllables) to smaller abstract linguistic units that have only a psychological reality (phonemes).

Development of Phonological Awareness

- In terms of cognitive operations, development allows increasingly complex operations and an increasing number of operations on phonological information.

Development of Phonological Awareness

□ Using data from 947 2- to 5-year-old children from diverse backgrounds who had completed multiple measures of phonological awareness across dimensions of linguistic complexity and cognitive operations, analyses, Anthony, Lonigan, Driscoll, Phillips, and Burgess, (2003) provided direct support for this developmental conceptualization of phonological awareness.

Development of Phonological Awareness

- ❑ Children were able to perform
 - word-level phonological skills before syllable-level phonological skills
 - syllable-level phonological skills before onset/rime-level phonological skills
 - onset/rime-level phonological skills before phoneme-level phonological skills.

Development of Phonological Awareness

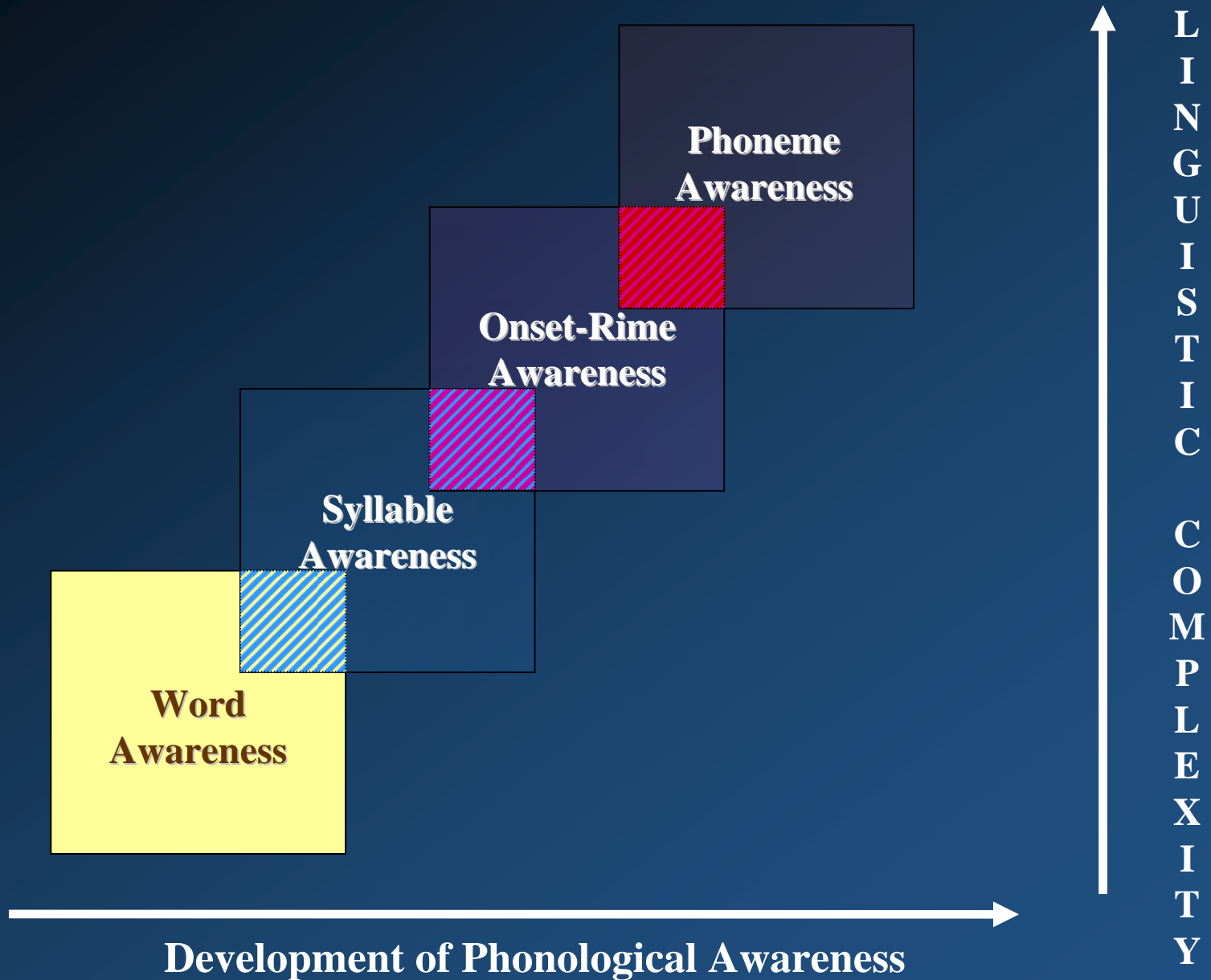
□ Children could

- detect manipulations of phonological information before they were able to perform manipulations of phonological information
- learned to blend phonological information before they learned to elide phonological information.

Development of Phonological Awareness

- The results supported a quasi-parallel development within dimensions of linguistic complexity and task complexity.
- Rather than acquiring these skills in a stage-like fashion in which acquisition occurs in temporally discrete sequential stages (mastery of one level before development in the next level), children's acquisition of these skills followed a temporally overlapping sequence (multiple levels simultaneously).

Development of Phonological Awareness



Age and Risk Status Influences on Phonological Awareness Tasks

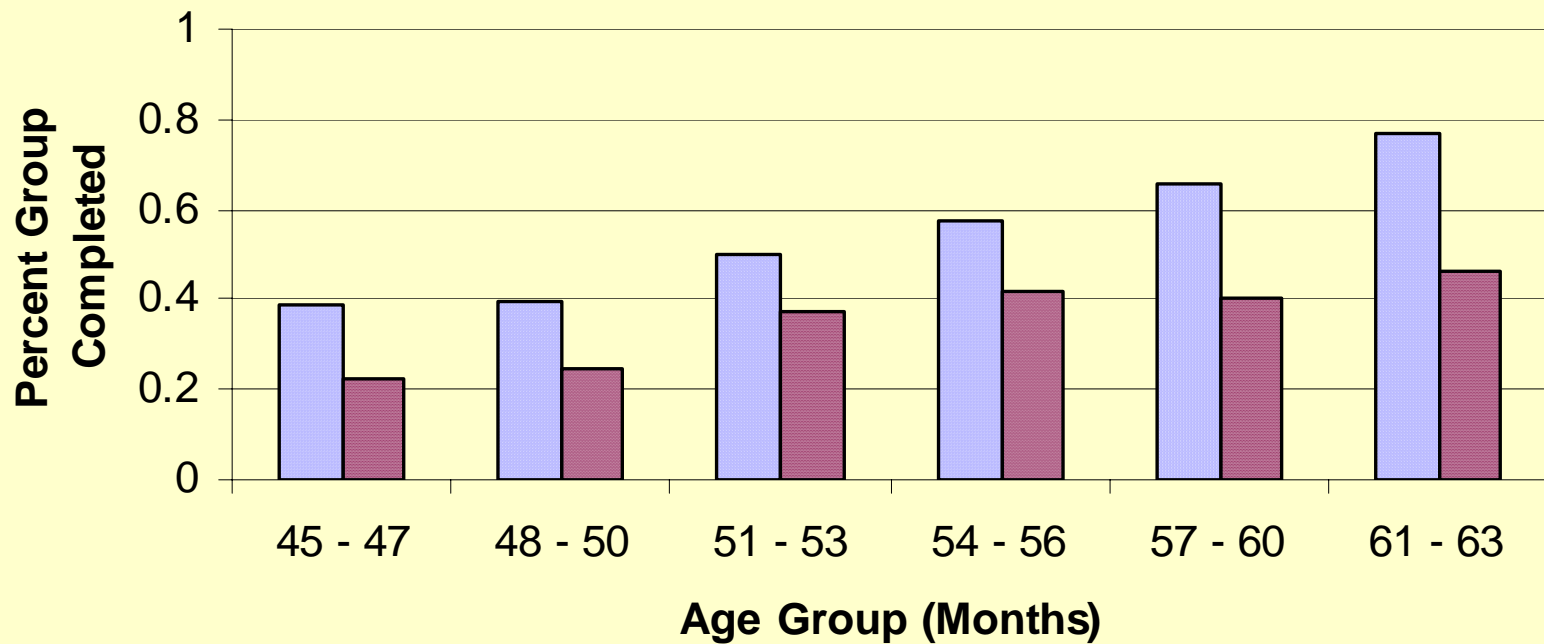
- At what age do children acquire the ability to complete various tasks designed to measure phonological awareness?
- As “preschool standards” are established, will they identify children who need extra attention to help them develop key early literacy skills?

Age and Risk Status Influences on Phonological Awareness Tasks

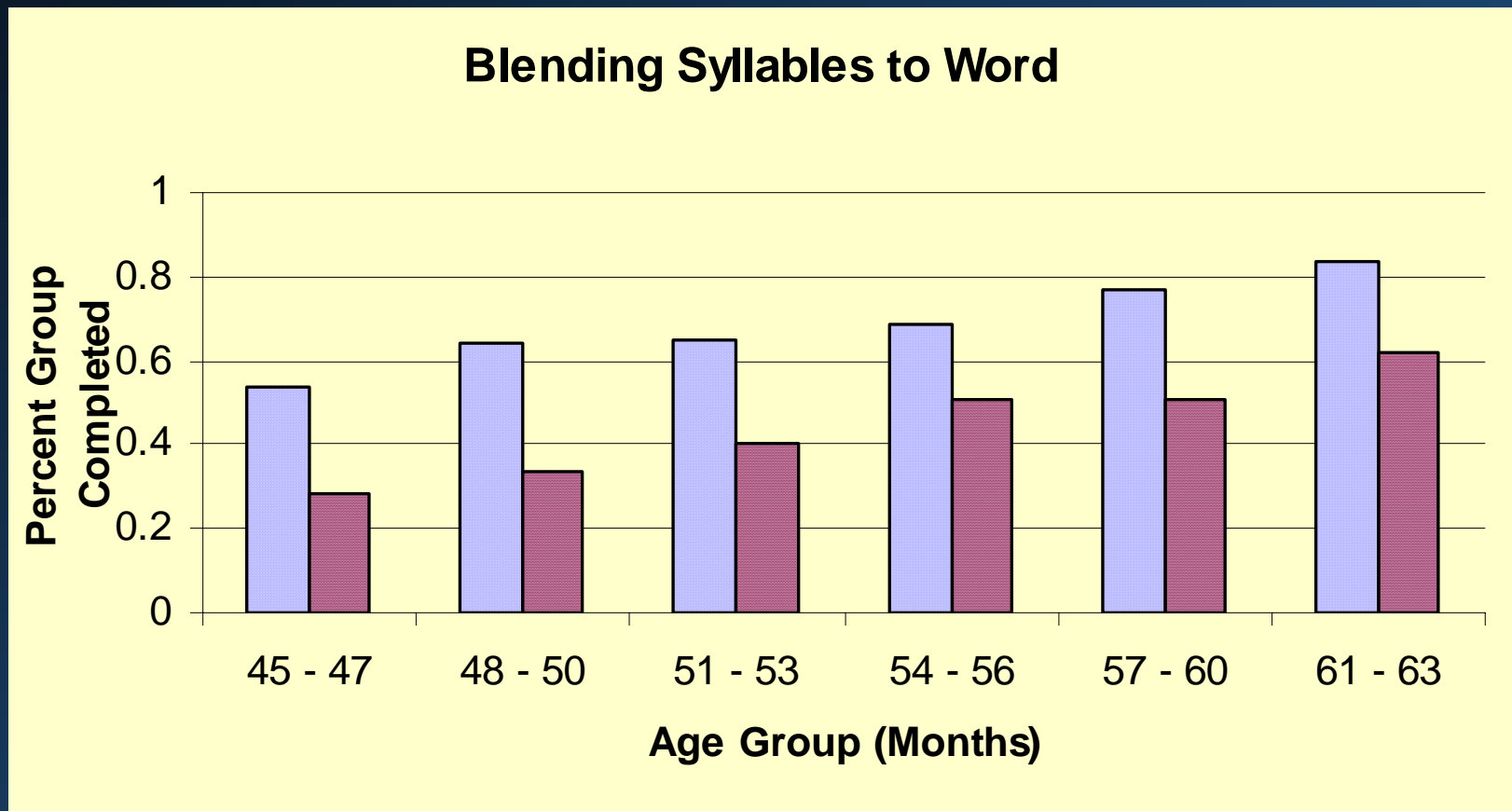
- Using archival data from large numbers of children who were from groups that could be classified as “at-risk” and “not at-risk” for reading difficulties, we examined performance on tasks across the preschool period within each group.
- Each three-month age-bracket included approximately 100 children.

Age and Risk Status Influences on Phonological Awareness Tasks

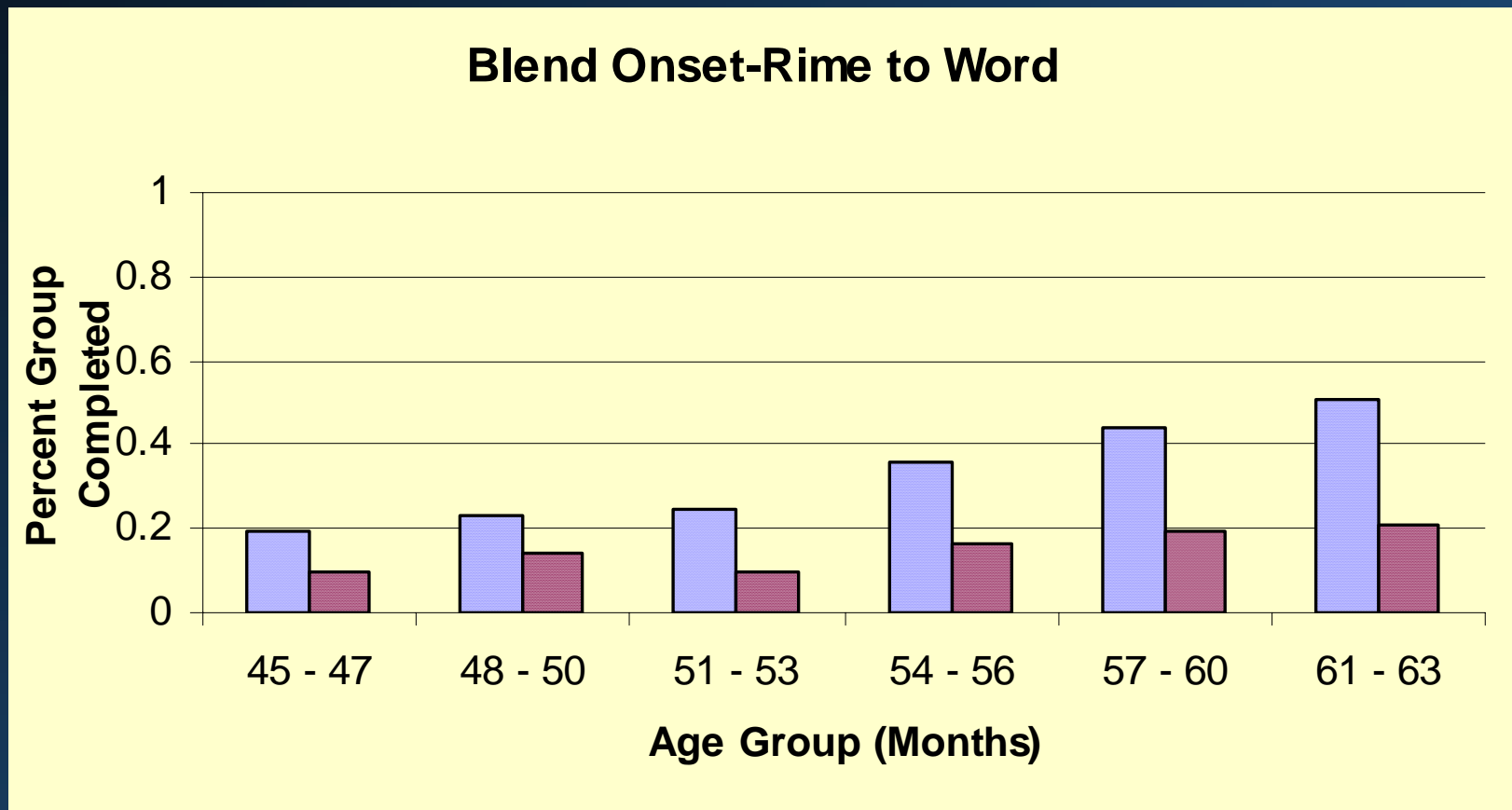
Blending Words to Compound Word



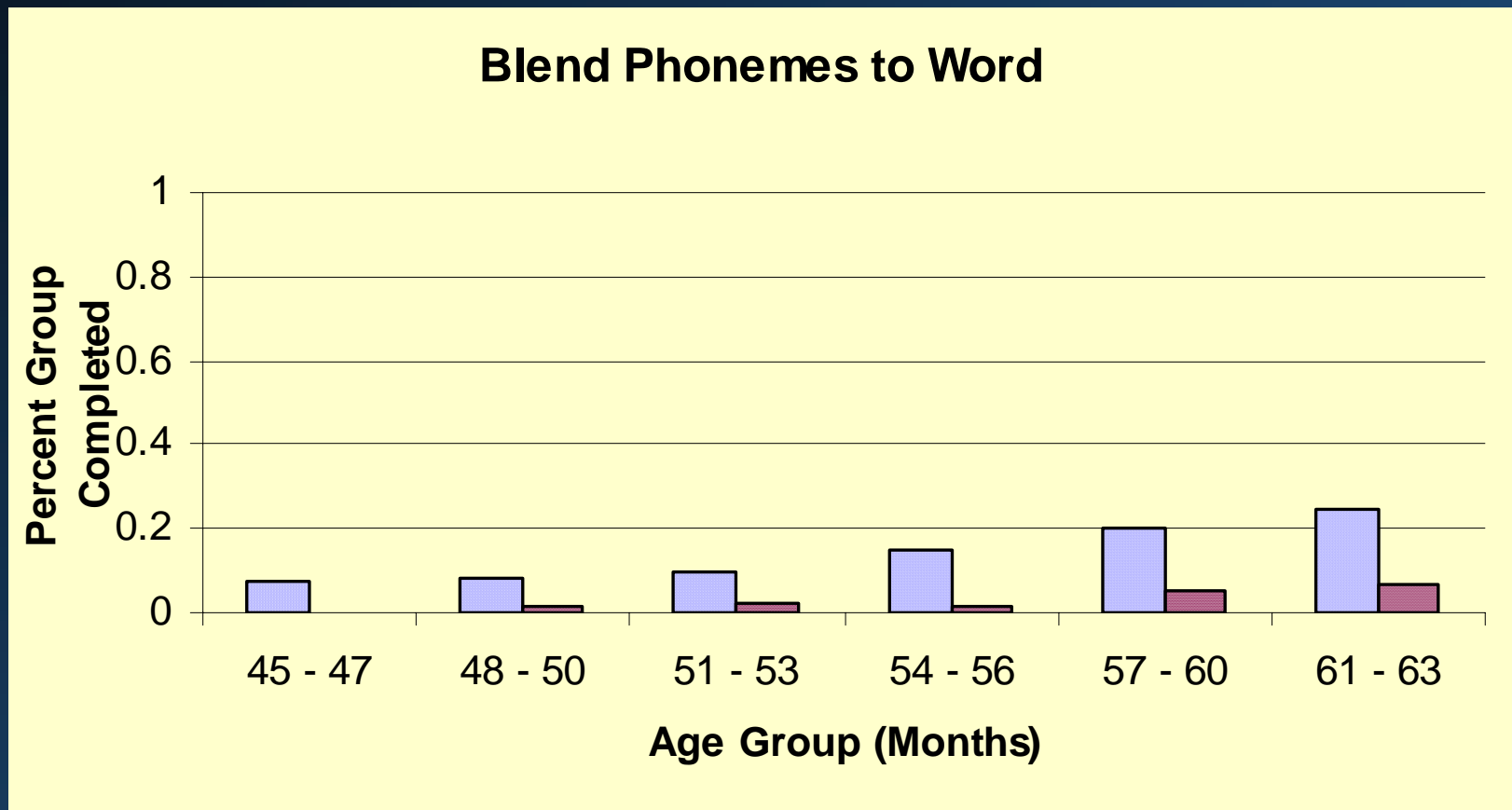
Age and Risk Status Influences on Phonological Awareness Tasks



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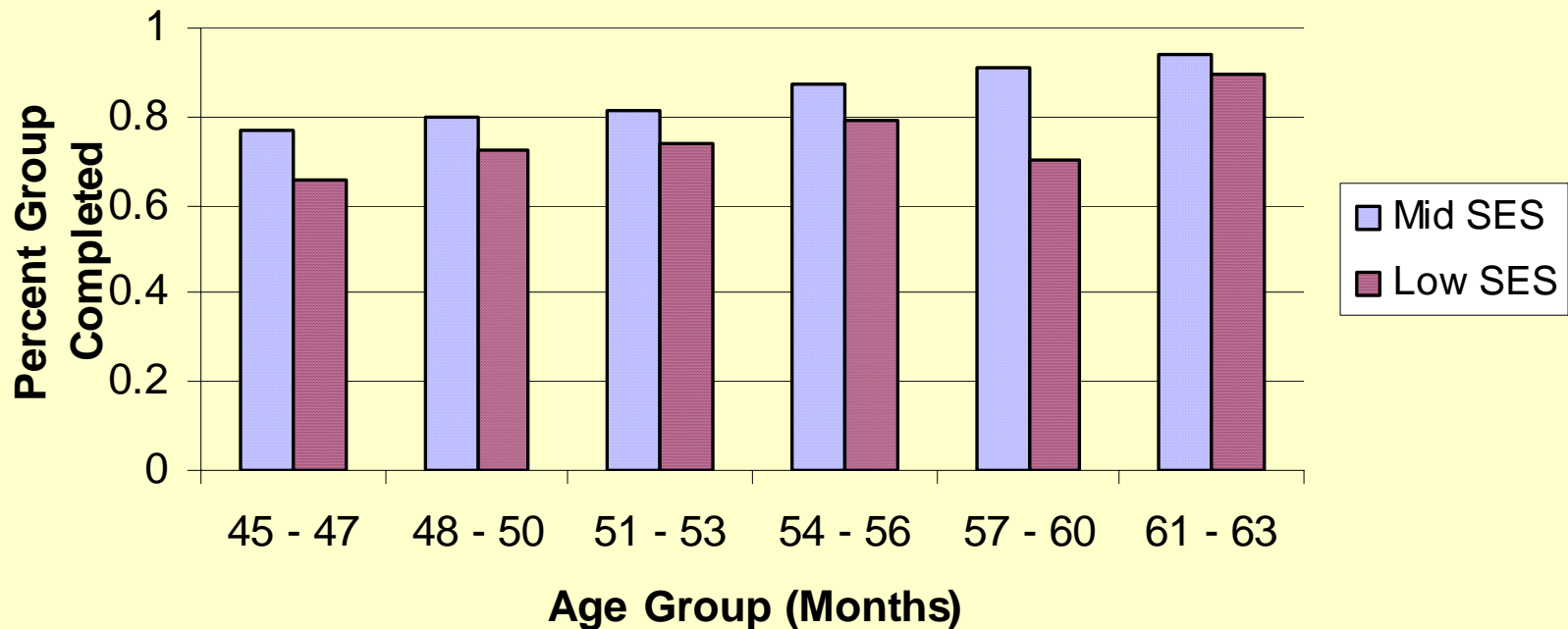


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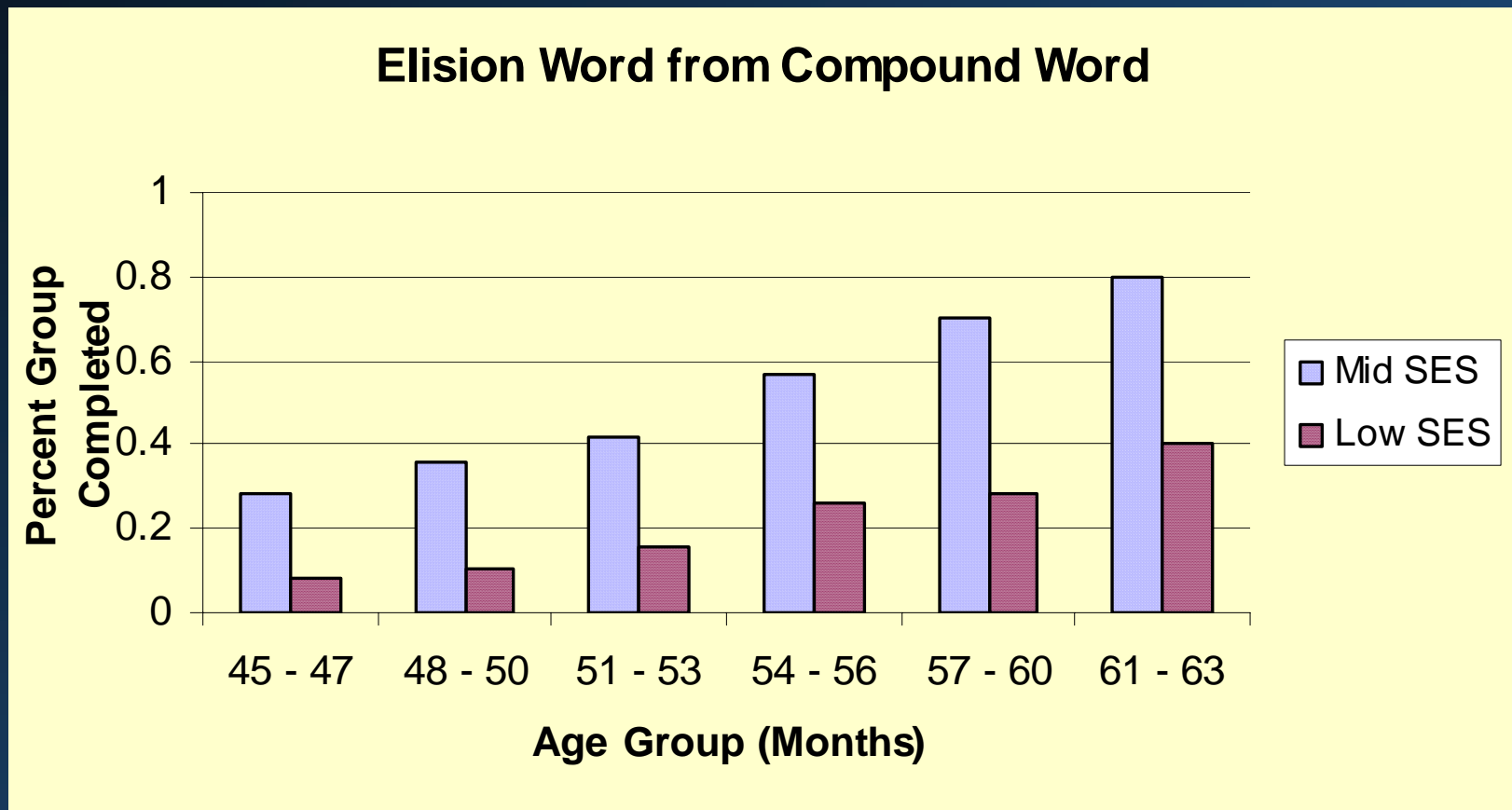


Age and Risk Status Influences on Phonological Awareness Tasks

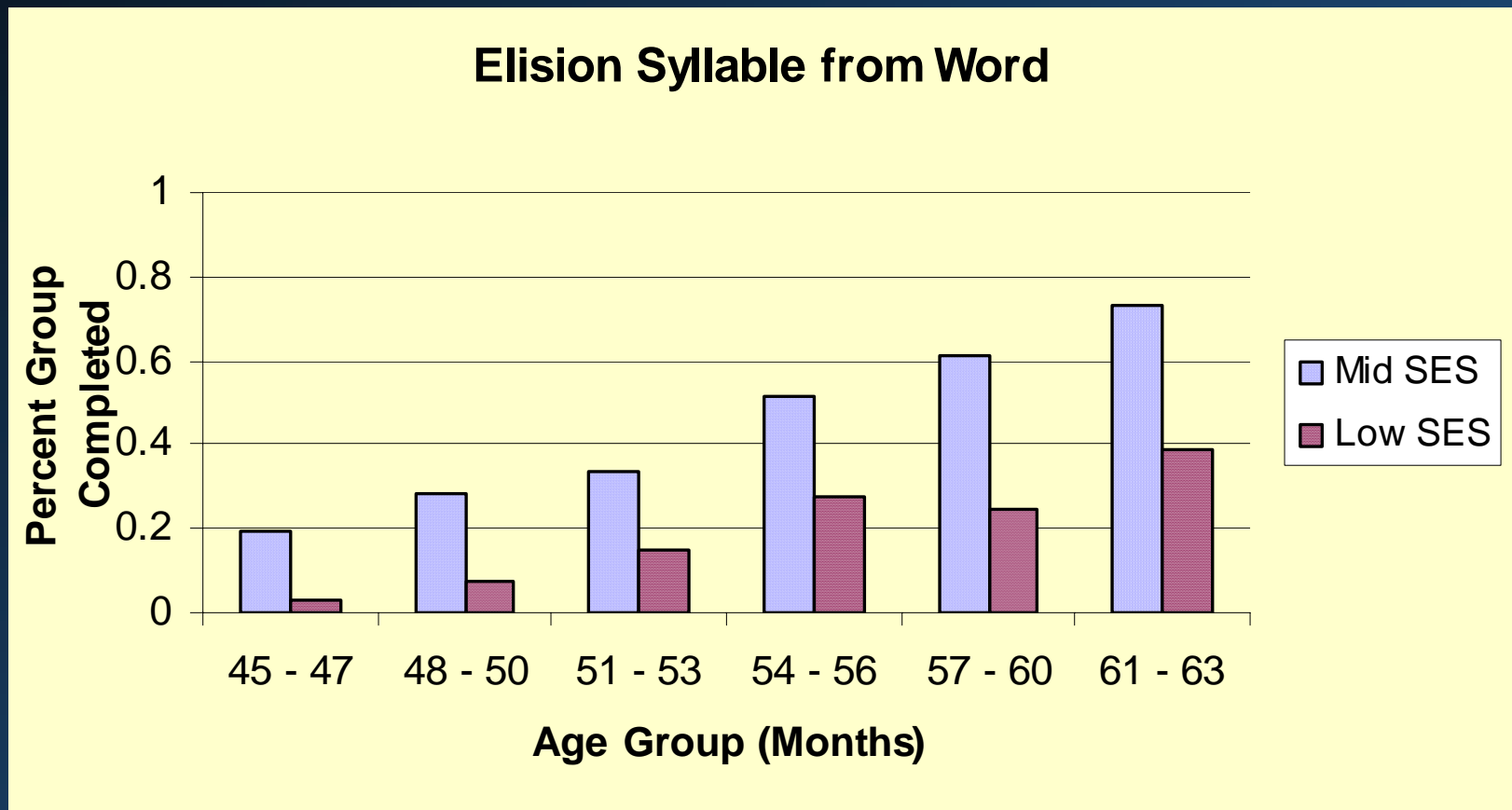
Blend Phonemes to Word: Multiple Choice



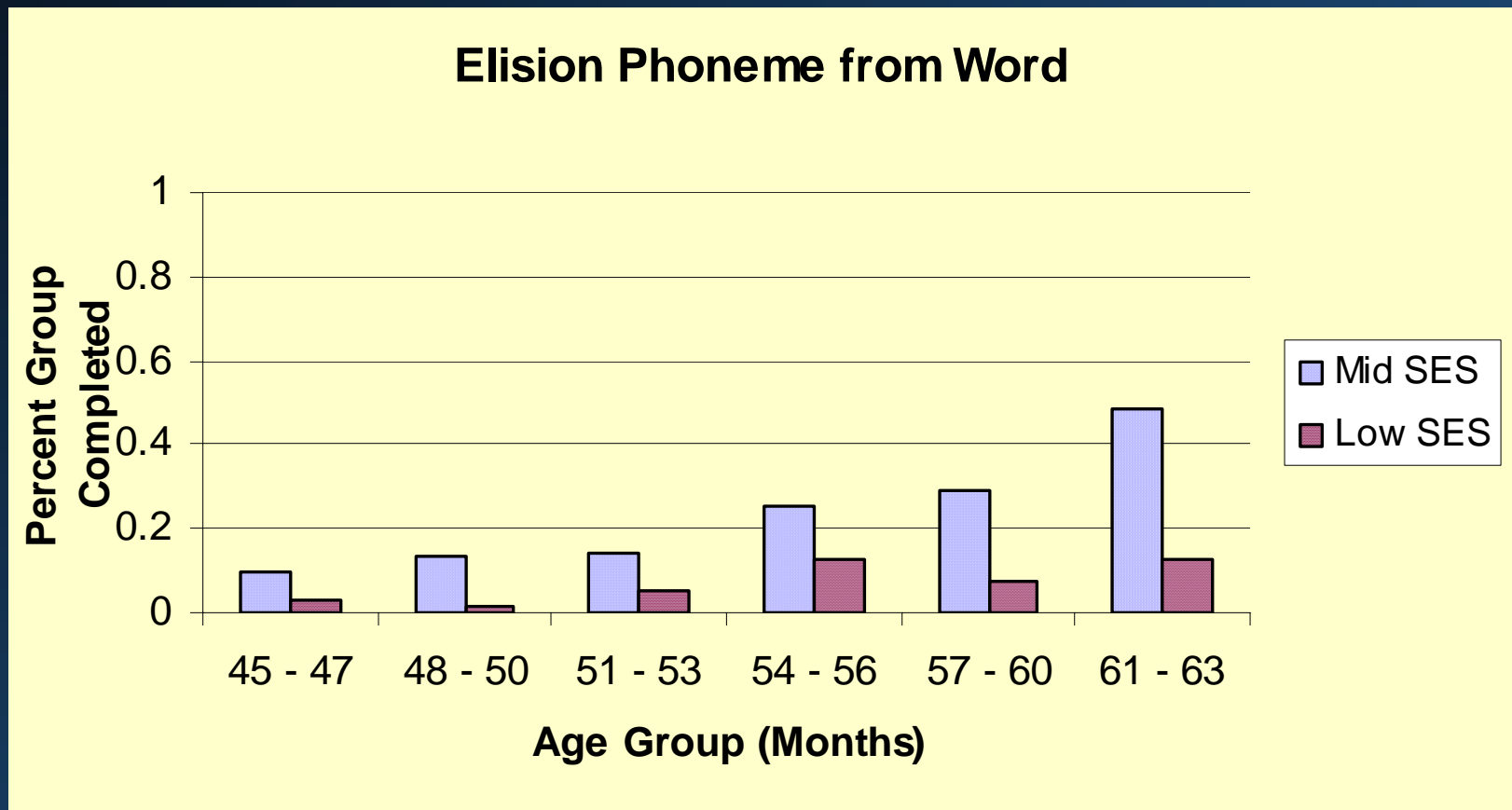
Age and Risk Status Influences on Phonological Awareness Tasks



Age and Risk Status Influences on Phonological Awareness Tasks

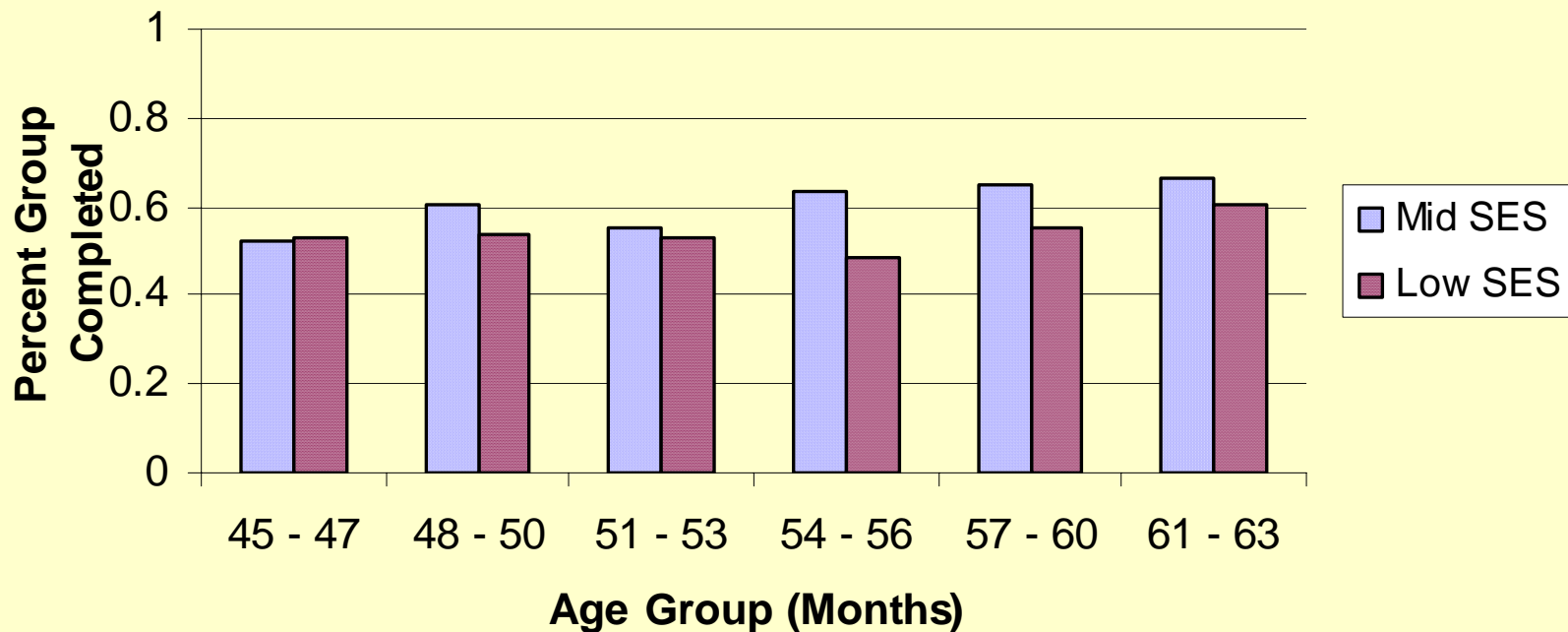


Age and Risk Status Influences on Phonological Awareness Tasks

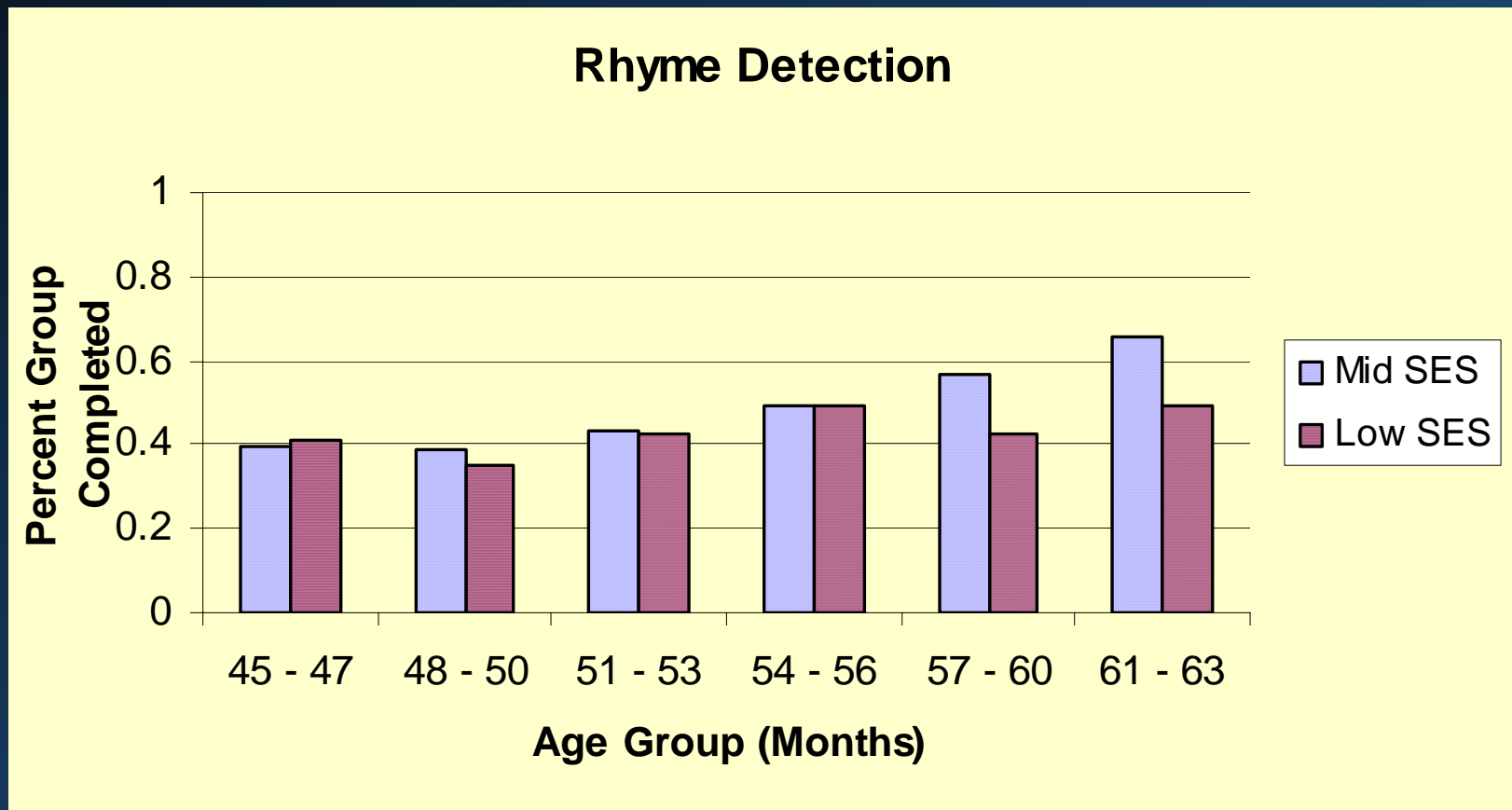


Age and Risk Status Influences on Phonological Awareness Tasks

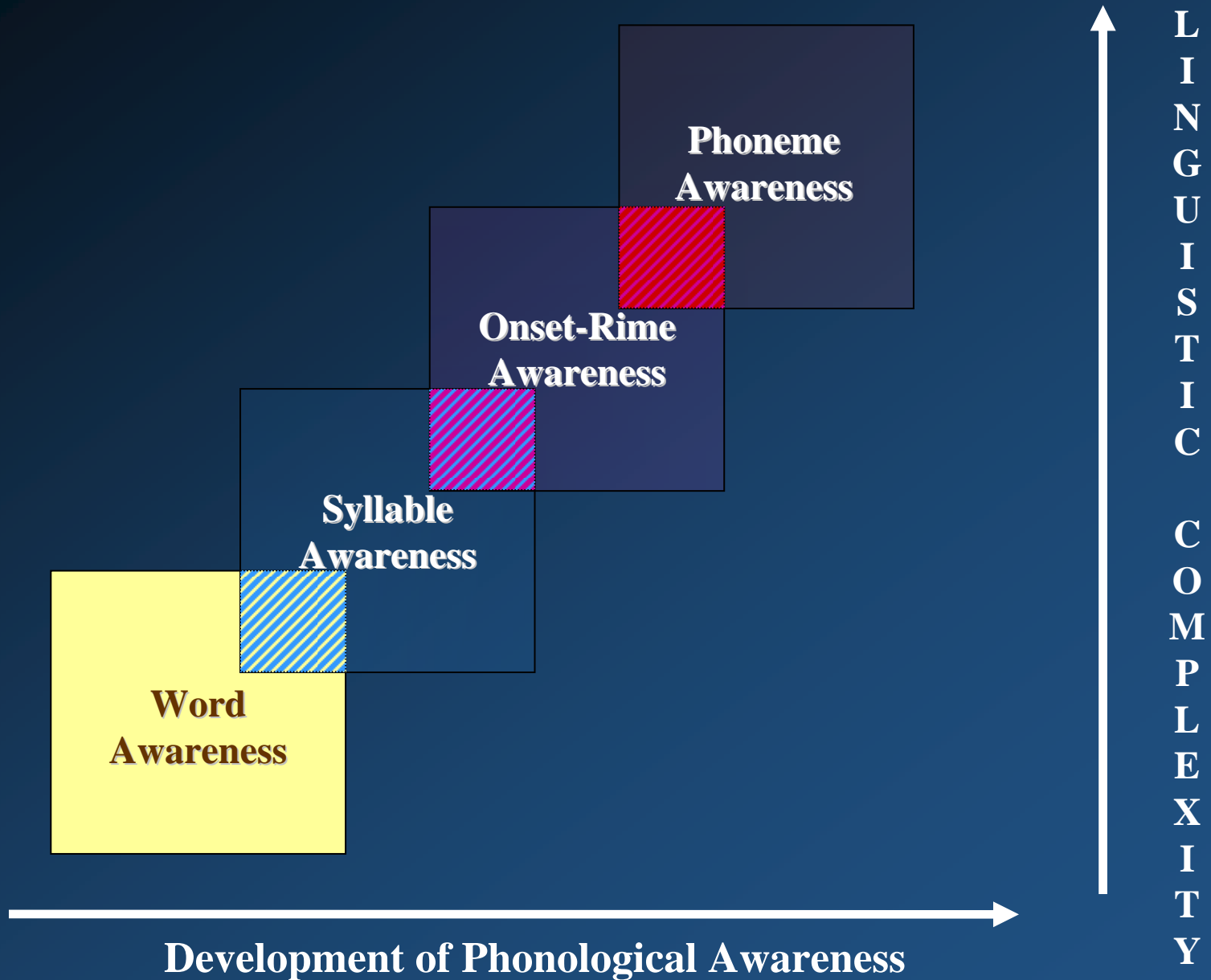
Elision Onset from Word: Multiple Choice



Age and Risk Status Influences on Phonological Awareness Tasks



Development of Phonological Awareness



Origins of Phonological Awareness

- ❑ Two candidates:
 - Print Knowledge
 - Vocabulary Development
- ❑ In a longitudinal study of preschool children, we found that preschoolers' letter knowledge predicted growth in phonological awareness across one year.

Origins of Phonological Awareness

- ❑ Phonological awareness and oral language are significantly related during the preschool period.
- ❑ Studies with older children have demonstrated significant concurrent and longitudinal associations between children's vocabulary skills and their phonological awareness.

Origins of Phonological Awareness

- ❑ A potential explanation for this linkage is the *Lexical Restructuring Model* (Metsala & Walley; 1998).
- ❑ According to this model:
 - representations of words in the lexicon of very young children are holistic (i.e., represented as whole words), and
 - gradually become more fine-grained and segmented through preschool and early grade-school.

Origins of Phonological Awareness

- ❑ Lexical restructuring is assumed to be a function of vocabulary growth that occurs in response to the learning of individual words within a spectrum of phonological similarity (i.e., neighborhood density).
- ❑ Evidence suggests greater segmental representation for high frequency words and words from dense phonological neighborhoods.

Origins of Phonological Awareness

- Stated simply:
 - as children learn more words, it becomes more efficient to remember and recognize words in terms of their constituent parts rather than as wholes.
 - Children who have small vocabularies may be limited in their phonological awareness because their memory for words has not moved from global to segmented.

Origins of Phonological Awareness

- ❑ These findings suggest that vocabulary development may set the stage for the emergence of phonological awareness, which in this view is dependent on access to segmentally represented speech sounds.
- ❑ Evidence?

Phonological Awareness in Bilingual Children

- ❑ Given changes in the US population, increasing emphasis has been placed on understanding development of key language and literacy skills in bilingual children.
- ❑ What do we know about phonological awareness in bilingual children?

Phonological Awareness in Bilingual Children

- Studies of children from Spanish-speaking homes.
- Two studies on the measurement of early literacy skills, including phonological awareness.
- Question: Does *language of assessment* make a difference?

Phonological Awareness in Bilingual Children

Study 1

- 270 children representing the Spanish-speaking subsample of a larger study in LA Head Start classrooms.
- Data from children's initial assessment.
- Children ranged in age from 37 to 79 months (mean = 53.09 months, $SD = 6.84$).

Phonological Awareness in Bilingual Children

- Based on teacher report and in-class observation, approximately half of the children were identified as English-dominant (i.e., strengths in both English and Spanish oral language), whereas the other half of the children were identified as Spanish-dominant (i.e., limited English skills).

Phonological Awareness in Bilingual Children

- All children were administered phonological processing and language measures in both English and Spanish.
- Question: What is the degree of cross-language transfer, and does a child's language profile affect this transfer?

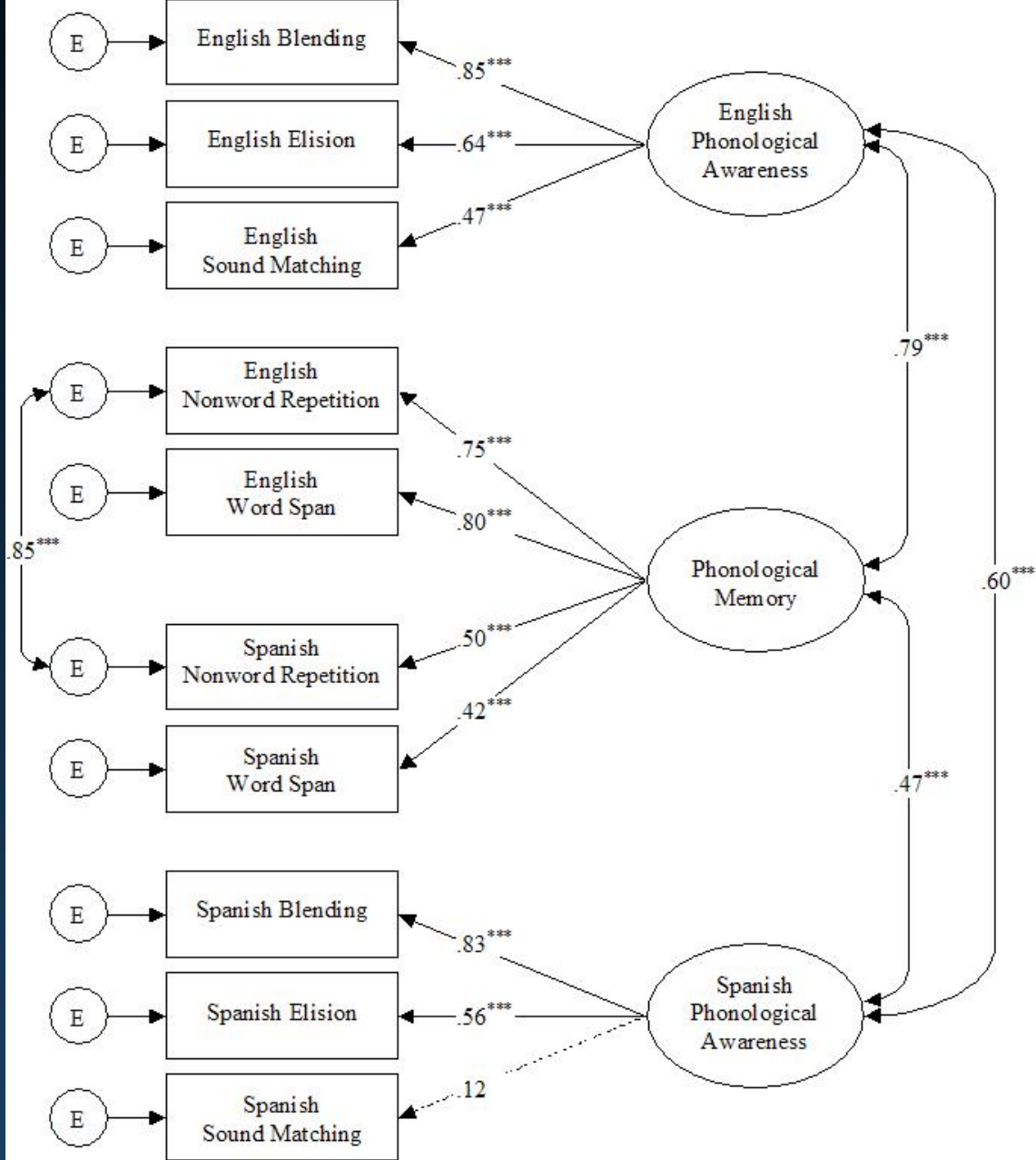


Figure 1. Best fitting model of phonological processing skills for children classified as bilingual. Ovals represent latent variables; rectangles represent observed variables; small circles represent residuals associated with each of the observed variables.

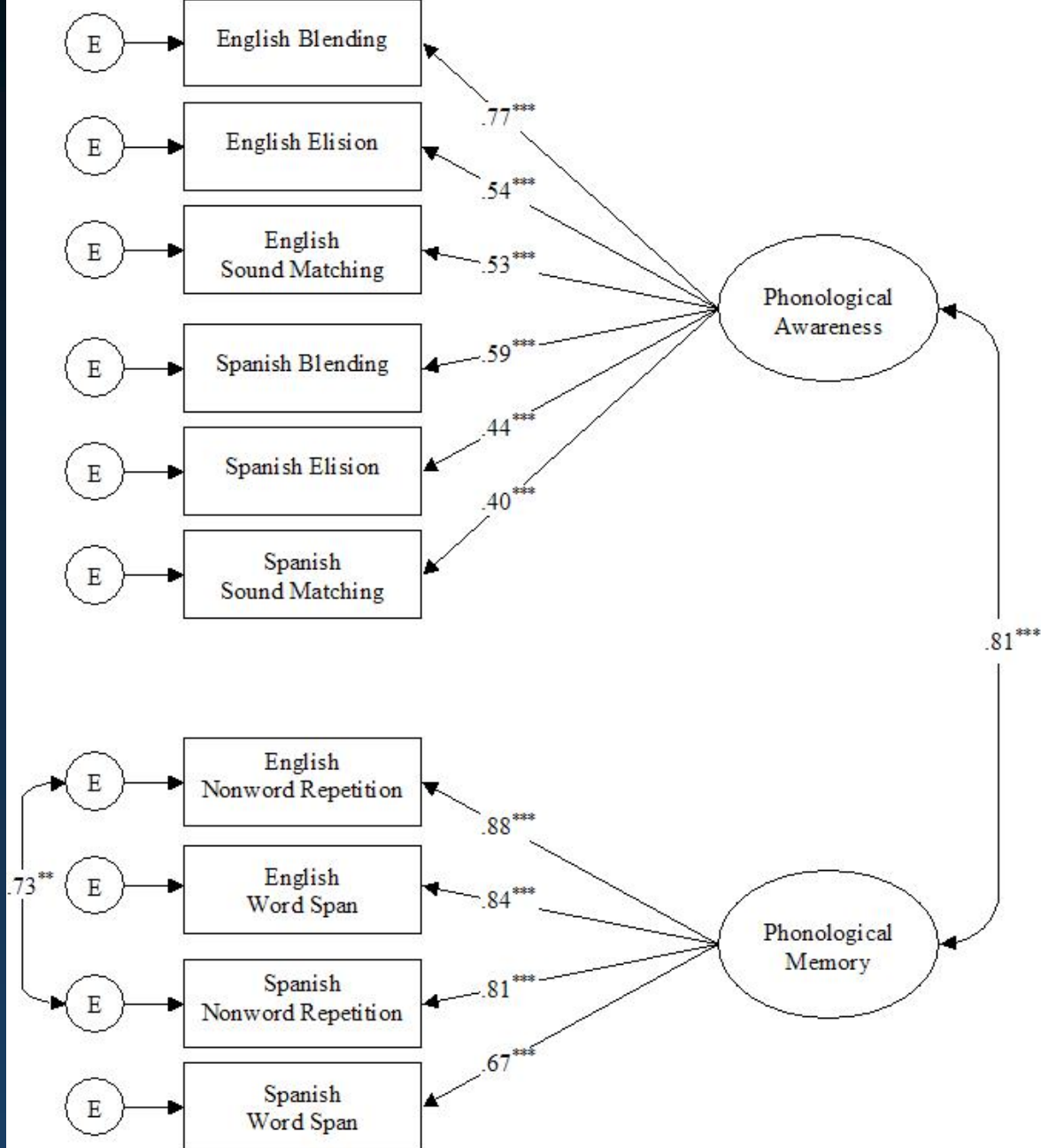


Figure 2. Best fitting model of phonological processing skills for children classified as Spanish-dominant. Ovals represent latent variables; rectangles represent observed variables; small circles represent residuals associated with each of the observed variables

Phonological Awareness in Bilingual Children

Study 2

- Approximately 250 children attending Head Start centers in Los Angeles.
- Administered tests of phonological awareness, print knowledge, and oral language in both English and Spanish.
- All tests administered at beginning and end of Head Start year.

Phonological Awareness in Bilingual Children

Correlations for Blending Administered in Spanish and English at Beginning and End of Pre-K Year

	End of Pre-K Year	
	English	Spanish
Beginning of Year: English	.45***	.31***
Beginning of Year: Spanish	.35***	.34***

Phonological Awareness in Bilingual Children

Correlations for Elision Administered in Spanish and English at Beginning and End of Pre-K Year

	End of Pre-K Year	
	English	Spanish
Beginning of Year: English	.46***	.34***
Beginning of Year: Spanish	.32***	.39***

Phonological Awareness in Bilingual Children

Correlations for Print Awareness Administered in Spanish and English at Beginning and End of Pre-K Year

	End of Pre-K Year	
	English	Spanish
Beginning of Year: English	.54***	.46***
Beginning of Year: Spanish	.32***	.33***

Phonological Awareness in Bilingual Children

Conclusions:

- There is a significant amount of cross-language transfer of phonological awareness
- Perhaps because of this transfer and the nature of the tasks, there does not seem to be a strong language bias.
- Depending on criterion variable, degree of English-language skills may be strongest predictor (caveats).

Phonological Awareness

Summary