

How Early Maternal Language Input Varies By Race and Education Level and Predicts Later Child Language At School Entry

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Rationale and Study Goals

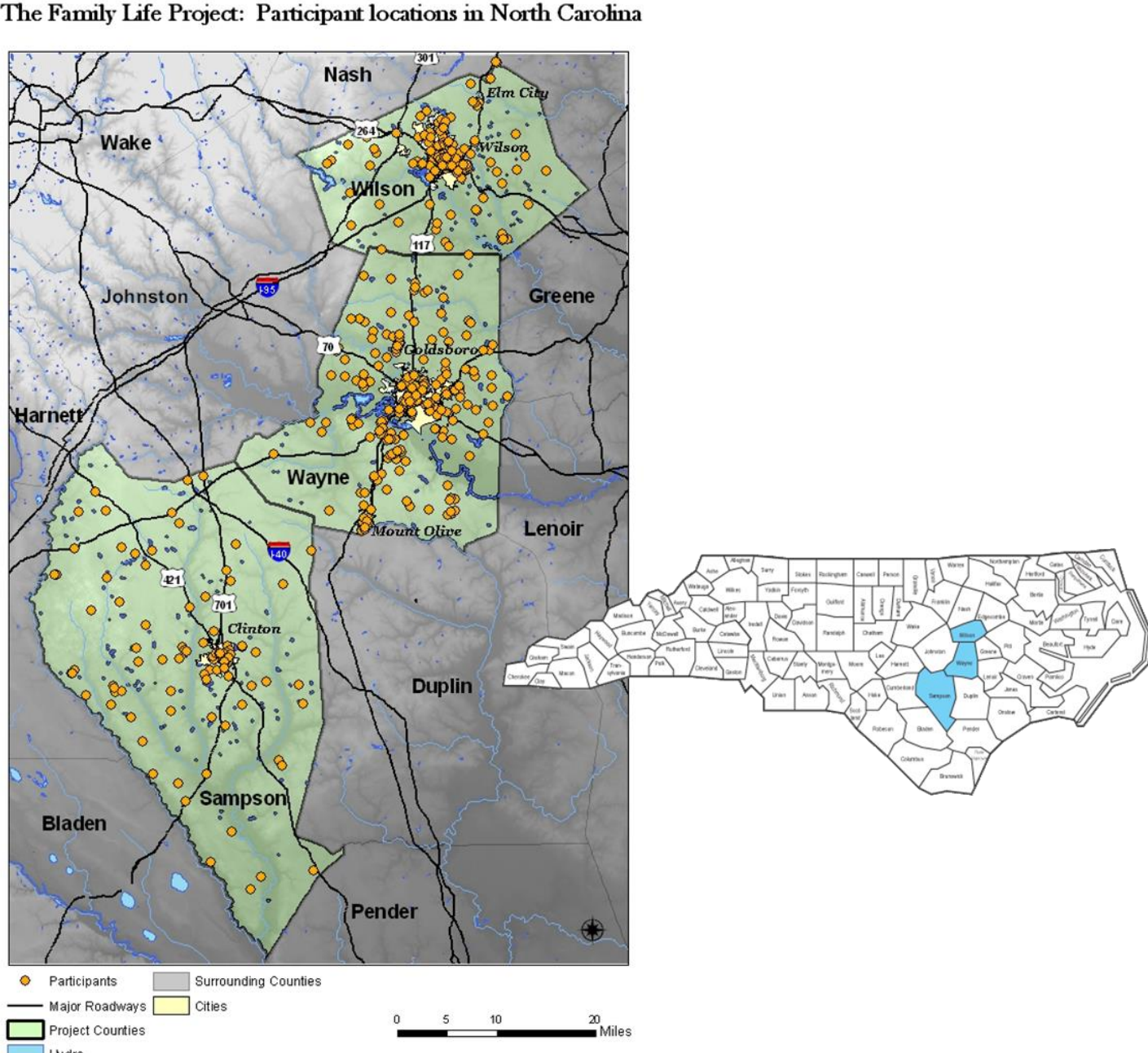
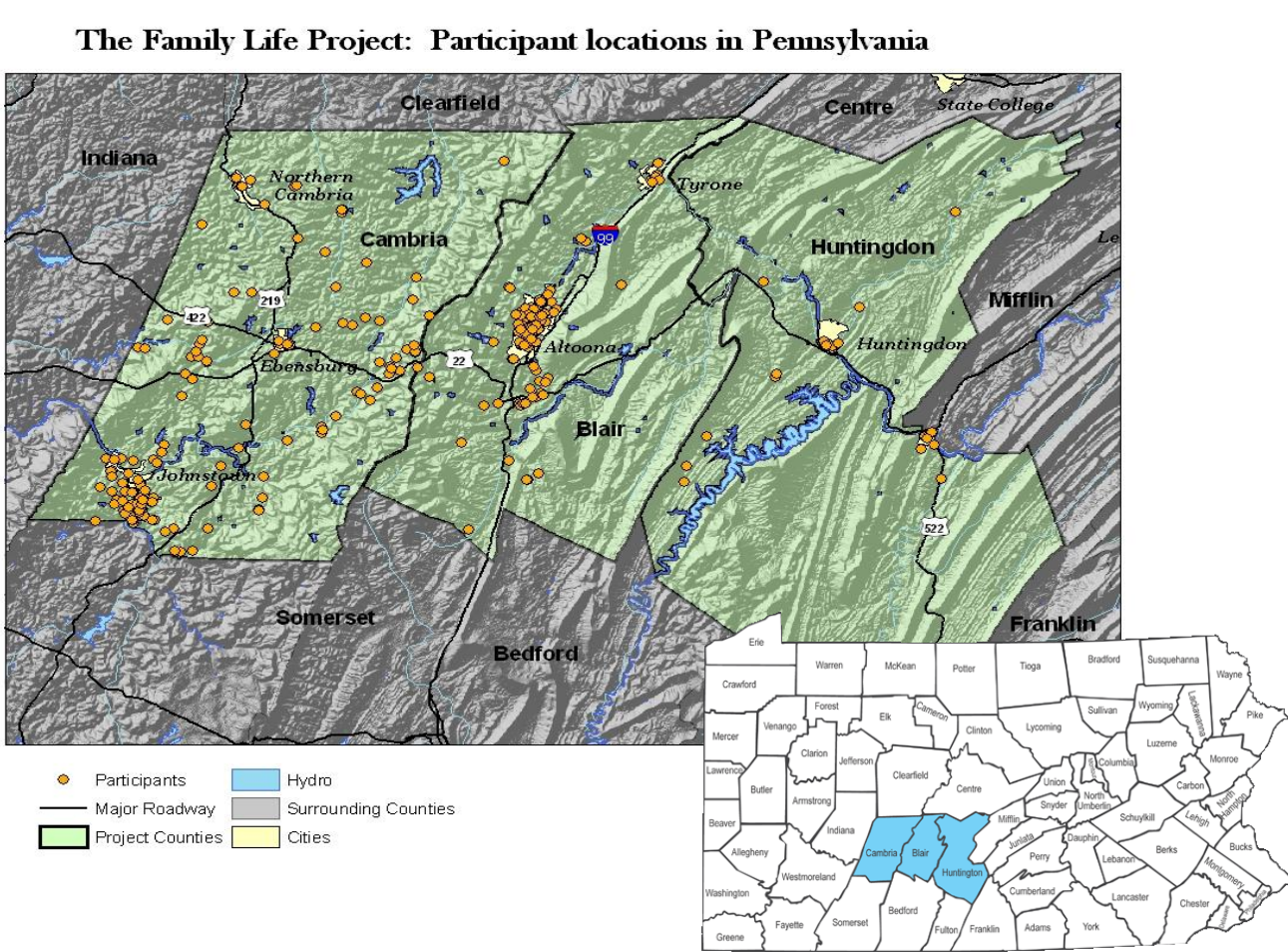
- Mothers with higher SES have been shown to use great quantity of language and complexity of language with their young children (Hart & Risley, 1995; Hoff, 2003; 2006; Huttenlocher et al., 2010; Vernon-Feagans et al., 2013) which in turn has been related to children’s early language. The SES gap has been called “the Word Gap”.
- This study focused on disentangling maternal education and race in examining maternal language input and race by collecting language data in the home during a wordless picturebook task from 6-36 months and examining child language during the transition to school in a large sample.
- This study also examined whether maternal language input was a mediator of the relationship between maternal education and later child language and if there were differences by race.

Research questions

- Do measures of maternal language output and maternal language complexity from 6 to 36 months and measures of child language outcomes at school age differ by race within education levels? Does maternal education differentiate these maternal language input and child language measures?
- Do measures of maternal language output and complexity from 6 to 36 months mediate the relationship between maternal education and child language at pre-k and kindergarten, and do these mediation models differ by race?

Sample and Methods

- Participants from The Family Life Project, a representative sample of every baby born to a mother who lived in one of six rural counties in Pennsylvania and North Carolina, over sampling for poverty and African American (*N* = 1292)



Time points for data collection

2 months	6 months	15 months	24 months	36 months
Home visit	Home and child care visit	Home and child care visit	Home and child care visit	Home and child care visit
Pre-K	60 months	Kindergarten		
Child care visit	Home visit	School visit		

Demographics of families

- 43% of mothers African American
- 60% from North Carolina; 40% from Pennsylvania
- 41% of mothers had high school degree or less; 58% had more than a high school degree
- Income/needs ratio around 2 for whole sample



Mother language at 6,15,24 and 36 months

- Recorded and transcribed the picture book task from the home visits
- Maternal language output (*number of different words; number of conversational turns*)
- Maternal language complexity (*mean length of utterance; number of wh- questions, number of complex conjunctions*)

Child language

- Peabody Picture Vocabulary test (PPVT-4), pre-k
- Adaptive Language Inventory (Teacher ratings of child language use), pre-k
- Woodcock Johnson Tests of Achievement: Word Knowledge, end of kindergarten

Findings for Research Question 1: Disentangling education and race

- No race differences on five maternal language input variables within maternal education and only one race difference on child language within maternal education.
- Large maternal language input differences and child language by maternal education

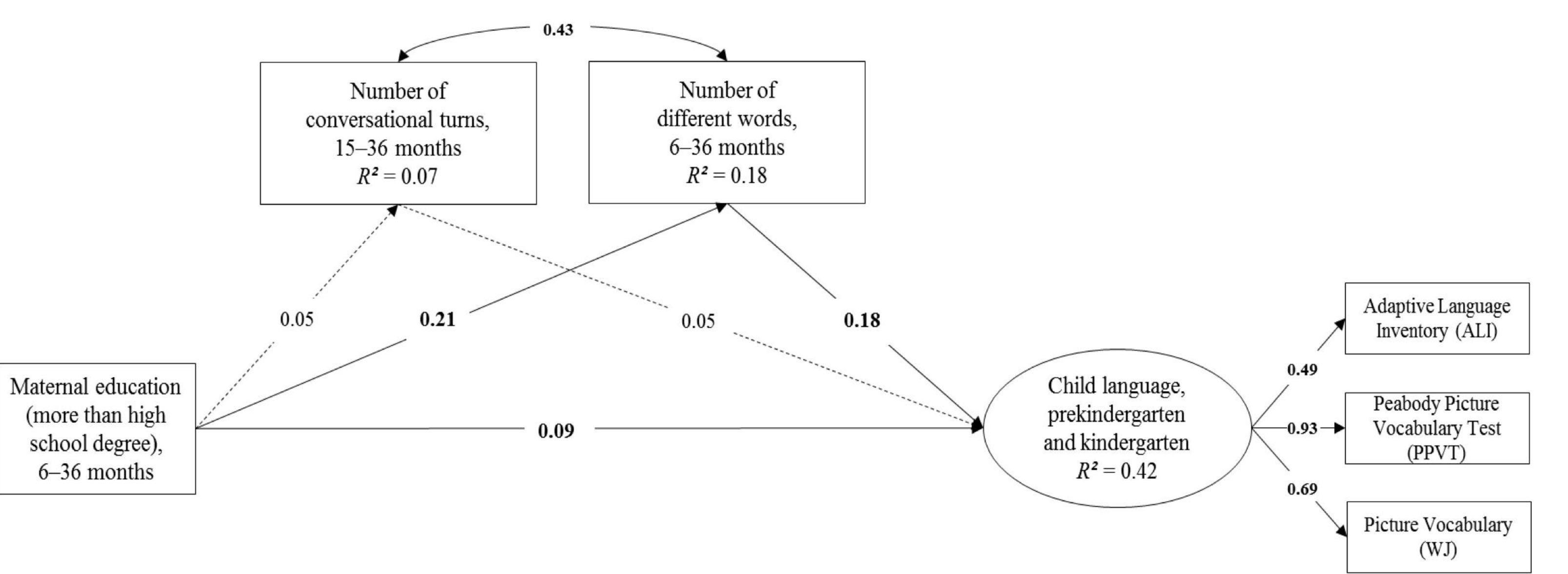
	High school degree or less (<i>n</i> = 535)		More than high school degree (<i>n</i> = 757)	
	<i>M</i>	<i>SE</i>	<i>M</i>	<i>SE</i>
Maternal language				
Maternal language output, 6–36 mos				
Number of conversational turns	58.33	1.68	62.77*	1.33
Number of different words	83.70	1.39	96.21***	1.10
Maternal language complexity, 6–36 mos				
Mean length of utterance	3.34	0.03	3.47**	0.02
Wh-questions	10.99	0.37	13.22***	0.29
Complex conjunctions	6.66	0.35	8.52***	0.28
Child language outcomes				
Teacher-rated child language (ALI), pre-k	3.32	0.05	3.52**	0.04
Receptive vocabulary (PPVT), pre-k	92.06	0.71	95.92***	0.69
Word knowledge (WJ PV), kindergarten	98.26	0.46	100.12**	0.36

Note: **p* < .05. ***p* < .01. ****p* < .001. Number of conversational turns was measured from 15 to 36 months. ALI = Adaptive Language Inventory. PPVT = Peabody Picture Vocabulary Test. WJ PV = Woodcock Johnson Picture Vocabulary.

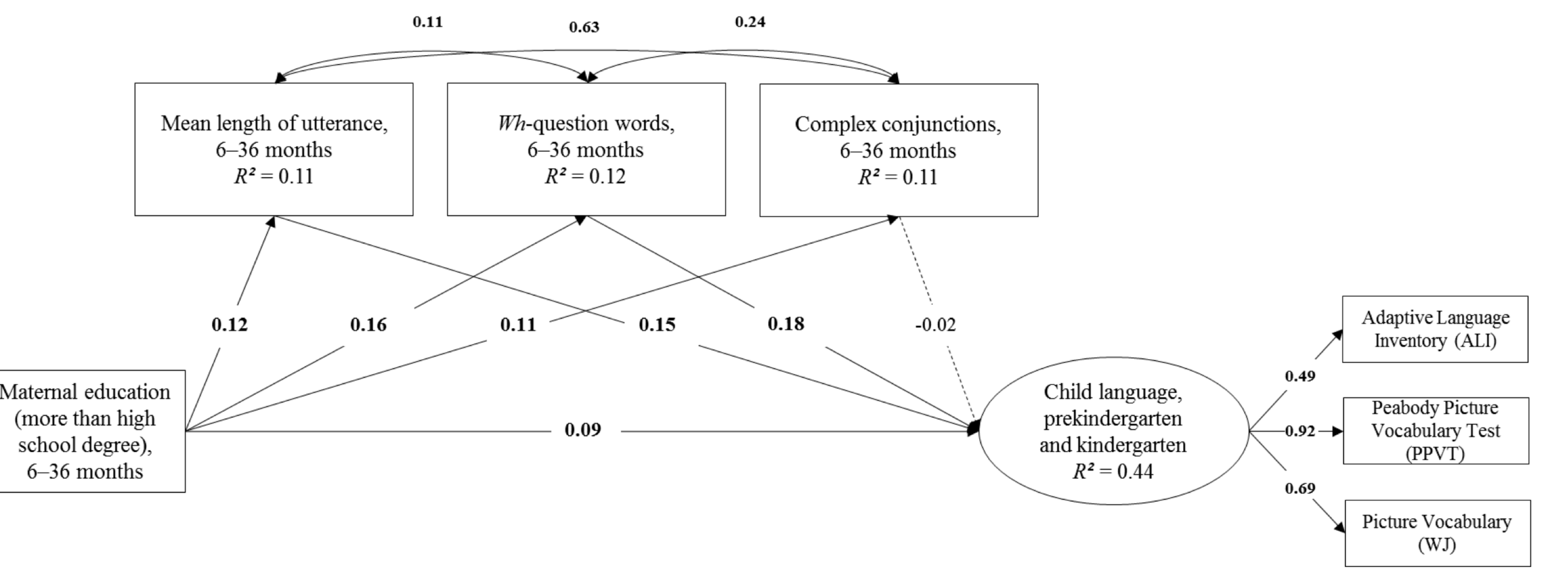
Findings for Research Question 2: Maternal language input as a mediator

- Maternal language *number of different words, mean length of utterance* and *wh- questions* were partial mediators between maternal education and child language
- There were no race differences in the mediation models

Maternal Language Output as a Mediator between Maternal Education and Later Child Language

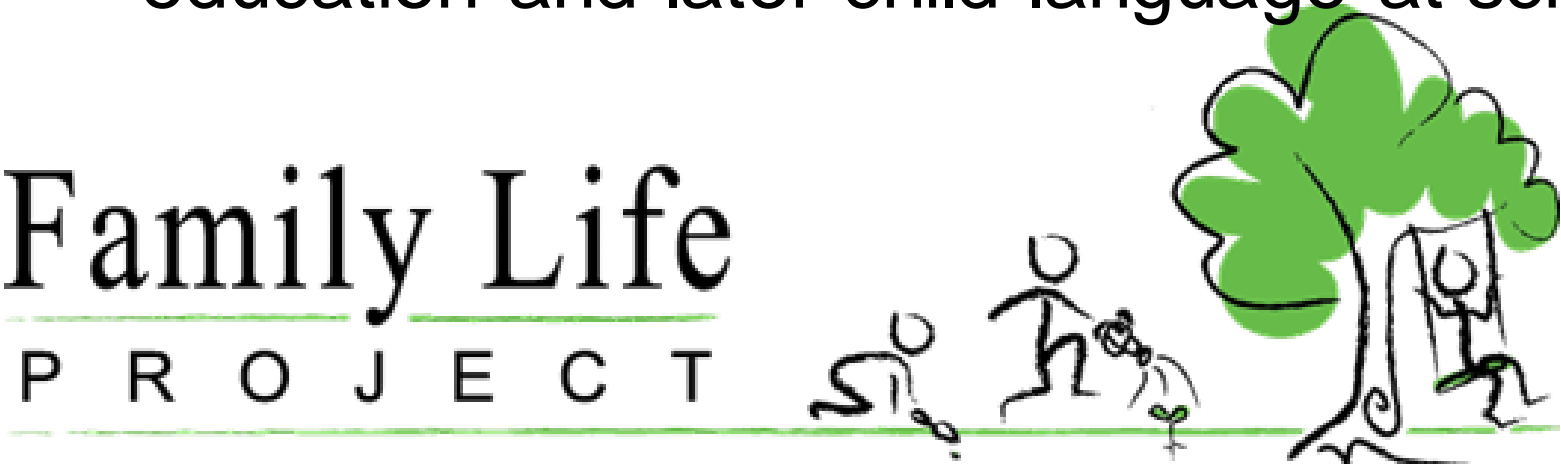


Maternal Language Complexity as a Mediator between Maternal Education and Later Child Language



Summary

- No race differences within maternal education levels on five measures of maternal language input from 6 to 36 months.
- Number of different words, mean length of utterance* and *number of wh-questions* were partial mediators of the relationship between maternal education and later child language at school age.



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