

Does manipulation complexity from 9-14 months predict language ability at 36 months?



PRESENTER:
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BACKGROUND:

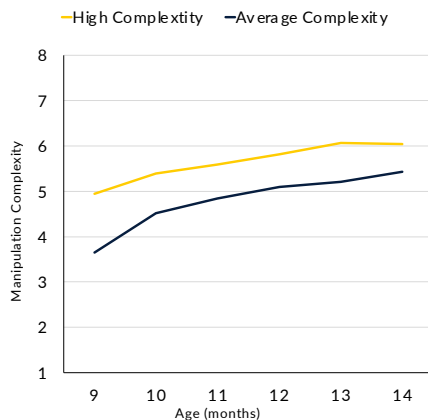
- Gains in early motor skills like sitting and walking predict advanced later language.
- Differences in how infants manipulate objects (measured as **complexity trajectories**) may be a novel way to **index fine motor skill**.
- Hypothesis:** What babies do with their hands is tied to their language learning environments through a **motor-language cascade**

METHODS:

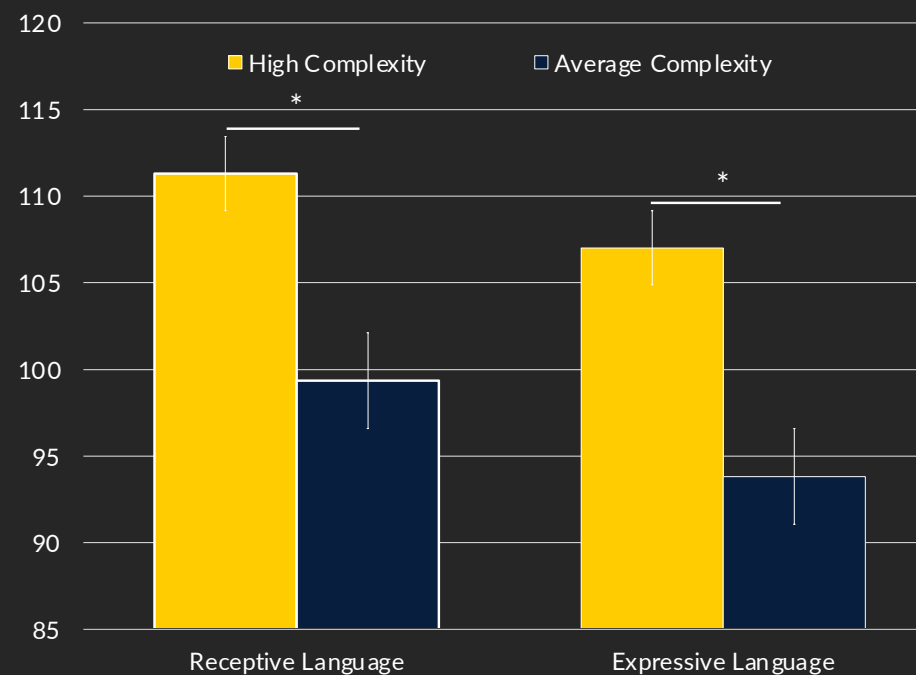
- 90 infants participated in the project.
- Manipulation complexity was coded from video for 6 visits from 9 to 14 months.
- Language was assessed using the Preschool Language Scales for 1 visit at 36 months.

RESULTS:

Two complexity patterns (high/average) were identified using latent class growth analysis.



Infants with **more complex manipulation** had **greater language skills** at 3 years.



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Infants manipulated 13 toys one at a time



Each toy got a **complexity score** from 1 to 8.
Analysis used an average per infant per month.

Manipulation Complexity Level	Is there more than one object?	Is there more than one hand?	Independent finger movement?	Are the hands doing different things?
8	Yes	Yes	Yes	
7	Yes	Yes	No	
6	No	Yes	Yes	Yes
5	No	Yes	Yes	No
4	No	No	Yes	
3	No	Yes	No	Yes
2	No	Yes	No	No
1	No	No	No	

2/3 of infants were in the **high complexity** class

Class	N	Intercept	Slope	Quadratic Slope
High Complexity	65	4.953*	0.427*	-0.041*
Average Complexity	26	3.831*	0.629*	0.063*

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Supported by NIH/NICHD R03HD097419-01 and
T32-HD-007376 and NSF DLS 0718045.