

A Comparison of the Conversational and Narrative Grammatical Abilities of Verbally Expressive Adolescents with Fragile X Syndrome

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Introduction

- Individuals with fragile X syndrome (FXS) experience significant weaknesses in the development of grammatical language (see Abbeduto, Brady, & Kover, 2007; McDuffie & Abbeduto, 2009; Rice, Warren, & Betz, 2005).
- There is no consensus regarding the language profile of FXS due to inconsistent findings in research, which may be because of differences in language sampling contexts across studies.
- Conversational language samples tend to yield a higher rate of utterances than narrative contexts, though narrative contexts elicit a greater mean length of utterance.
- The Index of Productive Syntax (IPSyn; Scarborough, 1900) and Developmental Sentence Score (DSS; Lee, 1974) are two measures which can be used to analyze grammatical language based on language samples that will help us to better understand the language profiles of individuals with FXS.

Study Aim – to compare conversational and narrative language abilities of children with FXS in the context of the Autism Diagnostic Observation Schedule (ADOS) and a traditional conversation sample using IPSyn and DSS analyses.

Participants

- 20 males with FXS between the ages of 9 and 16 years. Additional characteristics are outlined below.

Participant Characteristics				
	Mean	SD	Min	Max
Chronological Age (years)	12.23	2.21	9.0	15.83
Years of SLP Intervention	8.80	2.89	4.0	13.0
Leiter Nonverbal IQ Composite	48.05	8.46	36.0	65.0
ADOS Severity	6.35	1.98	2.0	10.0
Conversation Sample				
Total Utterances	164.70	28.26	108.0	215.0
MLU Morphemes	4.11	1.18	2.16	6.61
ADOS Conversation Sample				
Total Utterances	517.40	164.34	288.0	805.0
MLU Morphemes	3.55	0.85	2.01	5.08
ADOS Narrative Sample				
Total Utterances	123.55	71.33	53.0	339.0
MLU Morphemes	3.83	1.04	2.57	6.54
Household Income				
	n			
< \$25,000	2			
\$25,000 - \$75,000	4			
\$75,000 - \$100,000	4			
\$100,000 - \$150,000	7			
> \$150,000	3			

Method

- Language samples were collected as part of a larger study focused on FXS (Sterling, 2018).
- Participants completed the ADOS (Lord, Risi, Lambrecht, et al., 2000), Module 2 or Module 3.

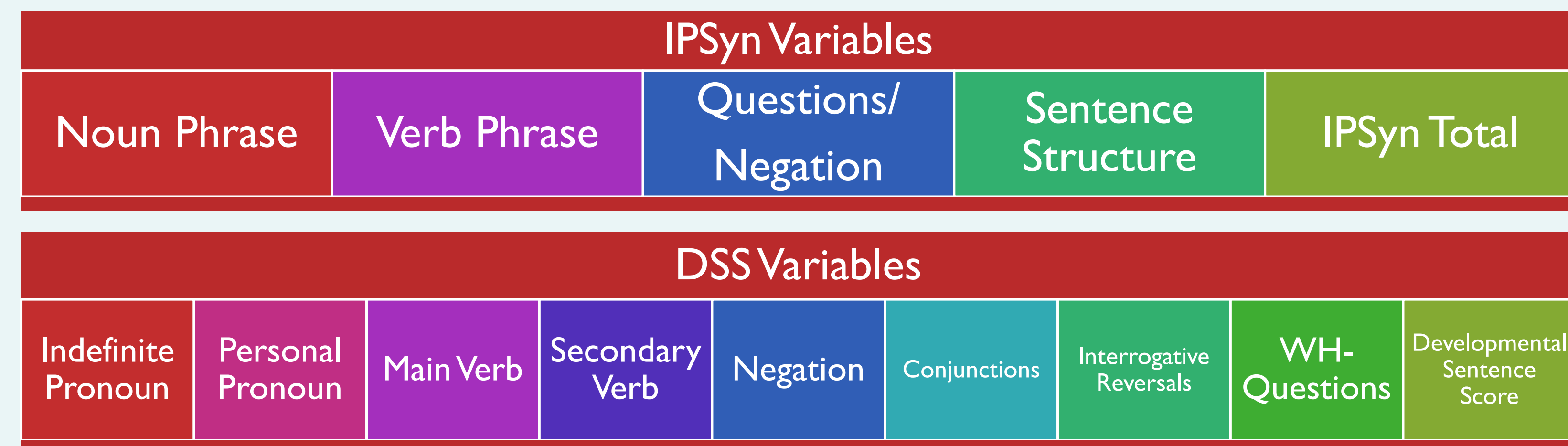
Method cont.

- Participants also completed traditional interview-style conversational language samples.
- All samples were transcribed. The ADOS samples were then segmented by context: Conversational Tasks or Narrative Tasks.

ADOS-Conversation			ADOS-Narrative
• Birthday Party ²	• Emotions ³	• Response to Joint Attention ²	• Cartoons ³
• Break ³	• Free Play ²	• Response to Name ²	• Creating a Story ³
• Bubble Play ²	• Friends, Relationships, and Marriage ³	• Social Difficulties and Annoyance ³	• Demonstration Task ^{2,3}
• Conversation ^{2,3} / Reporting a Nonroutine Event ³	• Joint-Interactive Play ^{2,3}	• Snack ²	• Telling a Story from a Book ³
• Construction Task ^{2,3}	• Loneliness ³		
• Description of a Picture ^{2,3}	• Make-Believe Play ^{2,3}		
		*All spontaneous language between tasks	

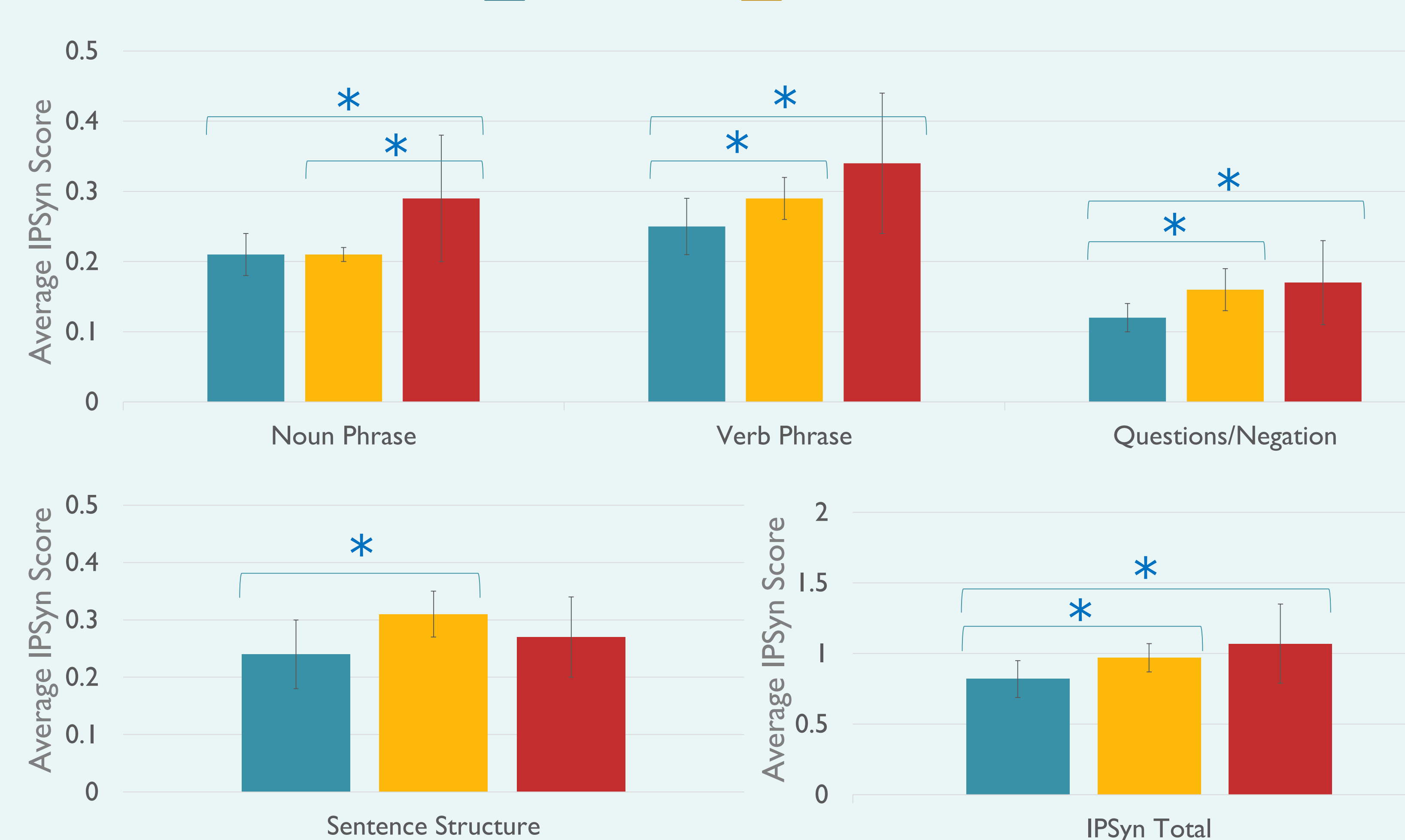
Note. Superscripts denote ADOS Module.

- IPSyn and DSS variables were derived using Computerized Language Analysis (CLAN) software for each context.



- Due to differences in number of utterances between contexts, we compared average scores of all variables.

Results: IPSyn



* Indicates significant difference between contexts

- IPSyn results indicate an overall trend of significantly higher ADOS-Narrative scores than both conversational contexts, with the exception of Sentence Structure.

Results: DSS



* Indicates significant difference between contexts

- DSS scores for Personal Pronoun and Developmental Sentence Score indicate that the traditional conversational context scores are significantly greater than scores in the ADOS-Narrative context.
- All other DSS sub-scores did not reveal any significant differences.

Conclusions

- IPSyn and DSS score trends differed between conversational and narrative contexts, with IPSyn measures derived from the ADOS-Narrative context yielding the most complex language of the three contexts. These findings support previous research in the field.
- DSS measures displayed opposing results, suggesting that traditional conversational contexts elicit more complex language.
- Further study will allow researchers to better understand how context affects the language output of individuals with FXS.

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