

Methods for Assessing Language for School-Age Children with Autism and Intellectual Disability

Audra M. Sterling^{1,2}, Eileen Haebig^{1,2}, & Susen Schroeder²

¹Department of Communication Sciences and Disorders, University of Wisconsin-Madison, USA

² Waisman Center, University of Wisconsin-Madison, USA

Introduction

- The language phenotype in autism includes delays in language production in the domains of vocabulary, pragmatics and grammar.
- In terms of grammar, some children demonstrate a profile similar to Specific Language Impairment, with particular difficulties in verb endings (e.g., He walks to the store). However, there is a lack of research on appropriate methods for assessment of these structures.
- Boys with fragile X syndrome (FXS) have a similar behavioral phenotype, and a significant number receive a co-diagnosis of autism (25-40%).
- Thus, the **purpose of this study** is to examine the best assessment method for language in children with autism compared to a group of boys with FXS.

Participant Inclusion Criteria

- Autism: Genetic testing to rule out FXS; FXS: genetic testing to determine full mutation status
- English primary language spoken by the participant
- Spontaneous expressive language of at least 2-3 word utterances
- Boys between 9 and 16 years of age
 - Due to the gender differences in FXS, the current study focused only on boys

Method

- Assessments completed at the Waisman Center
- All testing video recorded
- Participants completed norm-referenced tests including nonverbal IQ (Leiter), receptive and expressive vocabulary (PPVT and EVT), expressive syntax (TEGI), the Autism Diagnostic Observation Schedule (ADOS) as well as a conversation language sample and sentence imitation task

Primary Measures

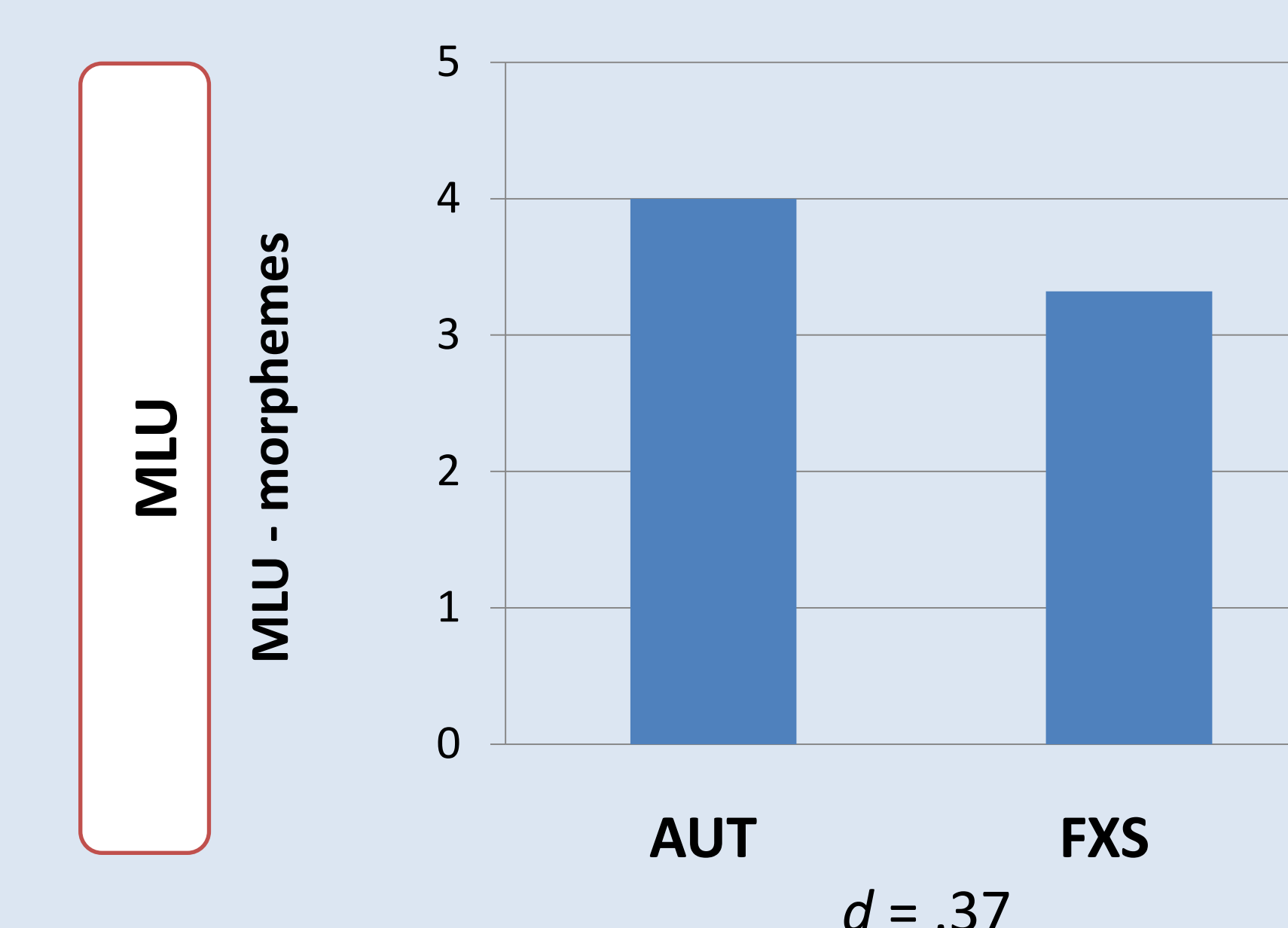
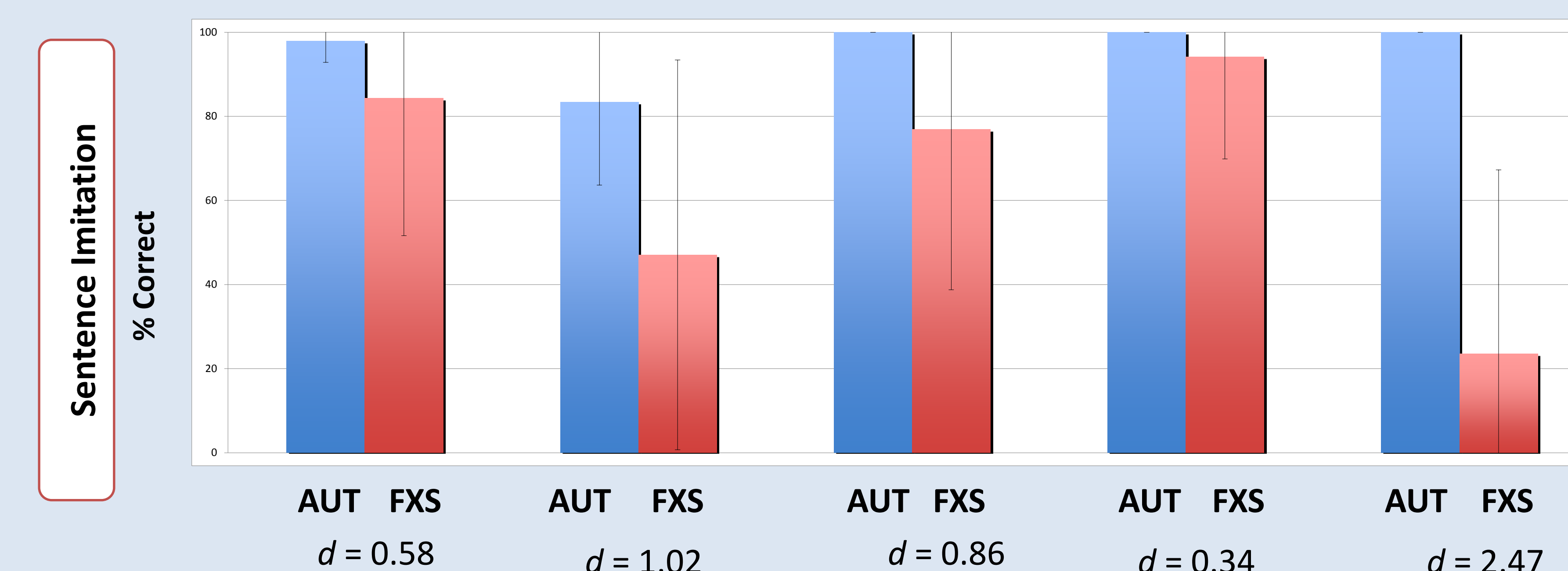
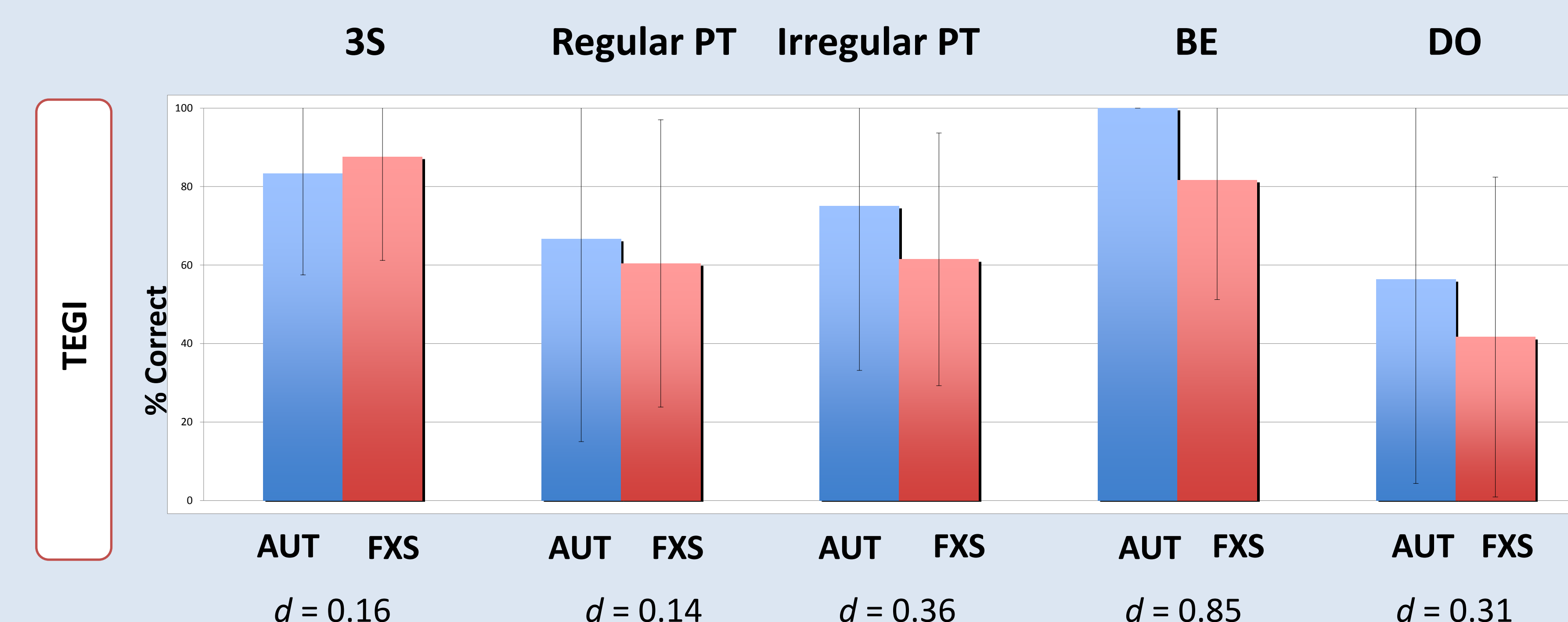
- Test of Early Grammatical Impairment (TEGI; Rice & Wexler, 2001)
 - Third Person Singular (3S) , Past-tense (PT) , and BE/DO Morphological probes
 - Percent correct in obligatory contexts
- Sentence Imitation Task
 - 30 sentences including target forms of third person singular (3S), Past Tense (PT), BE and DO
 - Percent correct in obligatory context
- MLU derived from a conversational language sample
 - 20-25 min sample with at least 100 utterances
 - Transcribed and analyzed using standard SALT conventions (Miller & Chapman, 2000)

Correlations

*Significant at .05 level; **Significant at .01 level; +Significant at .06

	SIT 3S	SIT Regular PT	SIT Irreg PT	SIT BE	SIT DO
Chronological Age	.19	.02	-.01	.24	-.03
PPVT	.35	.44*	.51*	.43*	.36
Nonverbal IQ	.24	.40+	.44*	.08	.67**
EVT	.17	.31	.40+	.13	.43*
MLU	.44*	.17	.28	.20	.36
TEGI 3S	.76**	.20	.43+	.77**	.09
TEGI Regular PT	.47*	.23	.22	.36	.31
TEGI Irreg PT	.39	.30	.34	.27	.40
TEGI BE	.86**	.47*	.49*	.77**	.38
TEGI DO	.31	.26	.38	.26	.42

Results



Acknowledgments

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Conclusions

- Preliminary results indicate high levels of accuracy for 3S and BE on both probes for both groups of participants. Better levels of accuracy for Sentence Imitation task. Perhaps this is due to the autism phenotype. However, a correct response had to include obligatory context.
- There were some group differences between Autism and FXS, with the Autism group outperforming FXS on almost all of the measures. However, both groups display a similar pattern on 3S and Past Tense, despite differences on IQ and norm-referenced language measures. MLU was similar in the two groups.
- Study is ongoing and will continue to enroll participants, as well as examine differences in language on ADOS and Conversation Language Sample

- Presented at IMFAR 2013 Conference
- For more information or copies of the poster please email: Audra Sterling: sterling2@wisc.edu

Characteristic	Group	
	Autism (n = 6)	FXS (n = 14)
Chronological Age (years)		
Mean	12.60	12.53
SD	2.27	2.26
Leiter (standard score)¹		
Mean	72.83	46.33
SD	13.21	7.83
EVT (standard score)²		
Mean	77.50	62.83
SD	18.75	12.98
PPVT (standard score)³		
Mean	78.17	60.94
SD	20.09	14.11
ADOS Diagnosis⁴		
Autism	5	11
ASD	1	3

¹Leiter International Performance Scale-Revised (Roid & Miller, 1997)

²Expressive Vocabulary Test (Williams, 2007)

³Peabody Picture Vocabulary Test-3rd Edition (Dunn & Dunn, 1997)

⁴Autism Diagnostic Observation Schedule (Lord et al., 1997)