**Title:** 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), the leading inherited cause of intellectual disability, experience significant weaknesses in language development (see Abbeduto, Brady, & Kover, 2007; McDuffie & Abbeduto, 2009; Rice, Warren, & Betz, 2005), including weaknesses in grammatical language development. However, research to date has yielded inconsistent findings with respect to grammatical weaknesses in individuals with FXS, which makes it difficult to fully understand their language profile. These inconsistencies may be due to differences in language sampling contexts across studies. Studies of individuals with FXS examining the effect of language sampling context on language performance have found that performance is significantly affected by the context (Abbeduto, Benson, Short, & Dolish, 1995; Kover, McDuffie, Abbeduto, & Brown, 2012), characterized by a higher rate of utterances in conversational samples than narrative samples, but greater mean length of utterances in narrative samples compared to conversational samples. To better understand the role of sampling context on language performance, the current study compared the grammatical skills of individuals with FXS in two distinct language contexts, conversation and narration.

**Method:** Participants included 16 males, 9 to 16 years of age, with FXS. As part of a larger study (Sterling, 2018), each participant completed Module 2 or 3 of the Autism Diagnostic Observation Schedule (ADOS; Lord, Risi, Lambrecht, et al., 2000). The ADOS interactions were audio and video recorded and later transcribed. As part of the transcription process, research assistants marked the beginning and end of each ADOS task. Each task was then spliced to form an independent file which were analyzed using the automated CLAN (Computerized Language ANalysis; MacWhinney, 2000) program to obtain Developmental Sentence Scoring (DSS; Lee, 1974) measures of grammatical development. We categorized each task as either a conversational task or a narrative task. The majority of tasks fell into the conversational category, including make believe play and joint interactive play using action figures and toys, describing a scene in a picture, and talking about a puzzle, among other conversational tasks. Narrative tasks included demonstrating to the examiner how to brush your teeth, creating a story using five random objects, reciting a story using a series of cartoons, and a narrative task in which the child tells a story from a book. We calculated DSS scores for each context.

**Results:** Paired sample t-tests were used to compare performance between the conversational and narrative contexts. The mean number of utterances across all of the conversational contexts combined was 178.25 (min-max: 75 - 338). The mean number across the narrative contexts was 52.44 (20 - 150). This difference was statistically significant, t(16) = 6.99, p < .001. Statistical differences also emerged based on three of the DSS measures: Negatives (t(16) = 2.84, p = .01), Interrogative Reversals (t(16) = 2.10, p = .05), and Sentence Point Total (t(16) = 2.79, p = .02). In all cases, the conversational values were greater than the narrative values. No significant differences emerged for the following DSS categories: Indefinite Pronouns, Personal Pronouns, Main Verbs, Secondary Verbs, Conjunctions, and Wh- Questions.

**Discussion:** Overall, these results run counter to previous findings that have suggested that narrative contexts support grammatically more complex language than conversational language. This may be due to the mix of narrative tasks included in our narrative composite. While one of the activities included in the composite was story telling using a picture book, a traditional type of narrative task, other activities were included as well. It is important for researchers to further examine how context affects language performance to fully understand the language skills of individuals with FXS.

**Key References:**