

**Title:** An Explicit-Visual Syntax Intervention for Minimally-Verbal Autistic Children

**Authors:** Bobbi L. Rohwer<sup>1</sup> & Lizbeth H. Finestack<sup>1</sup>

**Introduction:** Impairment in language, specifically social communication and social interaction, is one of the defining criteria of autism spectrum disorder (ASD). Many autistic children have impaired language systems, though the severity of these characteristics can vary widely. Some autistic children in the early stages of language development, have limited spontaneous expressive language and deficits in social communication (Eigsti., de Marchena, Schuh, & Kelley, 2011), but go on to develop spoken language, while others may not use verbal speech in their lifetime. For the children who are demonstrating significant deficits in language acquisition, some evidence suggests this may be due to limited comprehension of the syntactic rules (i.e., how words are combined appropriately into sentences) within their language (Eigsti, Bennetto, & Dadlani, 2007; Eigsti., de Marchena, Schuh, & Kelley, 2011); however, there is little research regarding how to best advance the language skills of children with ASD from utterances comprising single words to more complex utterances of 2-4 words, especially in regard to the use of appropriate syntactic structures. Because there is such a substantial gap in this particular area of intervention research, we present two case studies that explore the effects of a proposed explicit-visual syntax intervention on the utterances of minimally-verbal autistic children compared to a traditional milieu teaching approach.

**Method:** Participants included two children with autism aged 4 and 7 years old, one male and one female. To be included in the study, participants had to receive full credit on specific items on the Preschool Language Scales – 5<sup>th</sup> Edition (PLS-5), specifically Questions 19, 20, 21, and 23 on the Auditory Comprehension subtest and Questions 20, 23, and 26 on the Expressive Communication subtest. These questions addressed necessary foundational skills thought to be required for successful interaction with the proposed intervention, such as attending to gestural cues, receptive and expressive identification of familiar items, and basic imitation skills. Neither participant was able to complete testing for the Stanford Binet Intelligence Scales. Baseline was established for both participants using a variety of age-appropriate activities, as the clinician attempted to elicit spoken language via a milieu teaching approach. During the treatment condition, the interventionist used a visual aid known as a pacing board equipped with a static pattern of shapes representing the Subject Verb Object (SVO) syntactic form. The novel pacing board was presented while the child was engaged in similar activities similar to the baseline activities, using a pre-established protocol which incorporated the same baseline milieu teaching components (modeling, mand-modeling, incidental teaching and time delay). Our variable of interest was mean length of utterance (MLU), as well as total number of words (TNW) and number of different words (NDW).

**Results:** Data has been collected from both participants. Participant A completed 9 sessions (5 baseline, 4 treatment) and Participant B completed 8 sessions (7 baseline, 1 treatment). Both participants' sessions were cut short due to COVID-19 restrictions. For both participants, their language improved in the treatment condition. Both participants demonstrated an interest in the novel pacing board and even appeared to independently seek it out in some trials. Participant B demonstrated independence in using the pacing board faster than participant A, meaning she did not require any prompting for its use, but differentiating factors such as age and sex should be strongly considered. Informally, both caregivers demonstrated an interest in using the pacing board due to the simplicity of its use, as well as the effects witnessed during treatment sessions.

**Discussion:** The two participants involved in the case studies demonstrated a marked increase in mean length of utterance, as well as an increase in total number of words, shortly after entering the intervention phase. As these are case studies, their effects should be interpreted with an abundance of caution, especially due to the short treatment conditions; however, the preliminary findings are encouraging and deserve further exploration. These findings also highlight the need for additional research in the area of syntax intervention with minimally-verbal children with ASD, an area that is often overlooked for this population.

---

<sup>1</sup> University of Minnesota

## References:

- Eigsti, I., Bennetto, L., & Dadlani, M. B. (2006). Beyond Pragmatics: Morphosyntactic Development in Autism. *Journal of Autism and Developmental Disorders*, 37(6), 1007-1023. doi:10.1007/s10803-006-0239-2
- Eigsti, I., Marchena, A. B., Schuh, J. M., & Kelley, E. (2011). Language acquisition in autism spectrum disorders: A developmental review. *Research in Autism Spectrum Disorders*, 5(2), 681-691. doi:10.1016/j.rasd.2010.09.001