Title: Developing an Observational Measure of Receptive Ability for Preverbal and Minimally Verbal Children with Autism

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Introduction: Some children with autism have significant language impairments and up to 30% fail to develop useful speech. The majority of previous research studies on language ability in autism have included only verbally fluent participants with far less research to date focusing on minimally verbal ASD. Because many preverbal and minimally verbal children are not able to fully participate in standardized testing, and because expressive language deficits make it difficult for them to express what they know, the receptive language abilities of preverbal children with ASD have been under-studied. The purpose of this study is to develop an observational measure of receptive language that is psychometrically sound and feasible to administer to preverbal and minimally verbal children.

Method: The samples for this study include the following language subgroups: (a) verbally fluent school age ASD (n = 35; age range 8 – 17, mean age = 9.9 yrs., mean IQ = 96.4; 81% male), minimally verbal school age ASD (n = 22; age range 8 – 14, mean age = 9.3 yrs.; mean IQ = 57.8; 76% male), and (c) preschool age ASD (n = 10; age range 2 – 4, mean age = 2.9 yrs., 80% male; 50% met criteria for preverbal / minimally-verbal). Participants are phenotyped in terms of ASD severity (ADOS, ADI-R), cognitive ability (Mullen Scales of Early Learning), and language ability (Macarthur Bates Communication Development Index; Children’s Communication Checklist). Participants are administered a set of three receptive ability presses (response to name, following directions, and identification) individualized to be at each child’s developmental level. A standard prompt sequence with delays is used during administration of the receptive ability presses to progress through the press in the case of non-response. Presses are videotaped and then coded for (a) latency to correct response, and (b) prompt level required for correct response. A second trained observer codes up to 25% of all sessions. For a subset of the participants, the receptive ability presses are repeated on separate days (between 3 – 8 administrations over the course of four weeks).

Results: Complete results are available on the preverbal and verbally fluent preschool samples with coding for the remaining participants on-going and scheduled to be completed well ahead of the conference. Feasibility: Administration time for the full set of receptive ability presses time for all children was under 5 minutes. Repeated administration (between 3 – 7 sessions) of the receptive ability presses were completed for 10 participants. The protocol could be successfully completed on all days for all participants (100%), and visual inspection of the data indicated that 1 of the 10 participants (10%) showed clear ceiling effects on all receptive ability press trials while the majority of participants (90%) showed neither floor nor ceiling effects. Stability: Analysis of test-retest results for the preschool sample indicated significant stability over time (r = 0.86, p < .01). Additionally, visual inspection of the repeated administration data (3 – 7 sessions) revealed stability (+/- 1 SD) for seven of the ten children (70%). Discriminant validity: The verbally fluent and minimally verbal subgroups of the preschool children with ASD sample were compared on the receptive ability presses using the prompt-level metric. This analysis confirmed a significant difference in level of prompt dependence on receptive language presses between groups (t = 4.56, p = .002). Results of additional psychometric analyses (inter-observer reliability, convergent validity with Mullen & MBCDI) on the complete samples will be reported at the conference.

Discussion: The results to date suggest that our observational measure of receptive ability is feasible for use with preverbal and minimally verbal children with ASD, is stable over time for most participants, and is able to discriminate between preverbal and minimally verbal subgroups of ASD children. These results are promising given the lack of research on receptive language in these groups, however replication of these results with larger samples and also additional psychometric analyses is warranted.

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