

Methods: Seventy-five children between the ages of 3 and 13 years, with and without ASD, produced vocalizations while being exposed to unaltered and frequency altered auditory feedback. The parent-report multidimensional social competence scale (MSCS) and the autism quotient (AQ) were also used to assess social functioning and autism characteristics, respectively.

Results: MM-ANOVAs were conducted to compare the effect of experimental condition and diagnosis on vocal response magnitudes and latencies. While a main effect of experimental condition indicated that all children produced compensatory responses to the frequency altered auditory feedback, $F(2, 146) = 499.946, p < .001, \eta^2 = .873$, vocal response magnitudes were similar across children with and without ASD, $F(1, 73) = .182, p = .671, \eta^2 = .182$. However, children with ASD produced faster responses to the auditory feedback manipulation, $F(1, 73) = 8.042, p = .006, \eta^2 = .099$. Hierarchical multiple regressions indicated that these faster responses were associated with poorer parent-rated social competence, MSCS $R^2 = .236, F(3, 48) = 4.935, p = .005$, and higher autism symptom scores, AQ ($R^2 = .150, F(3, 51) = 3.002, p = .039$).

Conclusions: These findings suggest that basic speech production differences are present in at least a subgroup of children with ASD. These results represent a key step in understanding how atypicalities in the mechanisms supporting speech production may manifest in social-communication deficits, as well as broader social competence, and vice versa.

414.026 (Poster) Expressive and Receptive Vocabulary Impairments in Primary-School-Aged Children with Autism Spectrum Disorder: A Pilot Study in Russian

V. Arutiunian¹, A. Minnigulova², A. Sorokin^{3,4}, E. Davydova³, D. Pereverzeva³, S. Tyushkevich³, U. Mamokhina³, K. Danilina³ and A. Lopukhina¹, (1)Center for Language and Brain, National Research University Higher School of Economics, Moscow, Russian Federation, (2)Faculty of Humanities, National Research University Higher School of Economics, Nizhny Novgorod, Russian Federation, (3)Federal Resource Center for ASD, Moscow State University of Psychology and Education, Moscow, Russian Federation, (4)Haskins Laboratories, New Haven, CT

Background: Children with Autism Spectrum Disorder (ASD) usually have comorbid language impairments even at the single-word level, failing in expressive and receptive vocabulary assessment tests (Kjelgaard & Tager-Flusberg, 2001). Importantly, previous studies disagree on the difference between receptive and expressive domains in autism: there is an evidence of more impaired expressive vocabulary (Jarrold et al., 1997), more impaired receptive vocabulary (Seol et al., 2014), and no difference in expressive-receptive domains (Kjelgaard & Tager-Flusberg, 2001). These inconsistencies can come out due to high heterogeneity of autistic groups as well as criteria for including children into studies, e.g., age or non-verbal IQ.

Objectives: The goal of the present study is to clarify whether primary-school-aged Russian children with ASD have difficulties at the single-word level at either expressive and receptive vocabulary.

Methods: 30 children participated in the study: 15 children with ASD ($M_{age} = 8.69, SD = 0.99$), varying in non-verbal IQ (range 40 – 110), and a control group of 15 typically developing children, TD ($M_{age} = 8.58, SD = 0.94$). All children with ASD had a clinical diagnosis within the autism spectrum (F84.0, F84.1 or F84.5) according to ICD-10 and were assessed by licensed psychiatrist with Autism Diagnosis Observation Schedule (Lord et al., 2000). Expressive and receptive vocabulary has been scored by the Test for assessment of language development in Russian *KORABLIK* (Lopukhina et al., 2019). For expressive vocabulary assessment, we used picture naming ($N = 48$), and for receptive vocabulary assessment, we used word-to-picture-matching paradigm ($N = 48$) in which each visual set consisted of four pictures – target, phonological distractor, semantic distractor, and unrelated picture. All stimuli were taken from the Verbs and Nouns Stimuli Database for Russian (Akinina et al., 2014, 2015, 2016) and were counterbalanced.

Results: We showed that children with ASD have impairments in both word production, 87% vs. 96%, $Est. = 1.45, SE = 0.38, z = 3.73, p = 0.0001$, and word comprehension, 91% vs. 97%, $Est. = 1.64, SE = 0.50, z = 3.25, p = 0.001$. Importantly, children with ASD displayed a difference in expressive and receptive vocabulary: production was more impaired than comprehension, 87% vs. 91%, $Est. = 0.66, SE = 0.19, z = 3.45, p = 0.0005$. Finally, in ASD group, for both word production and comprehension we found a correlation between accuracy and non-verbal IQ (for production, $r = 0.55, p = 0.03$, for comprehension, $r = 0.57, p = 0.02$), but there was no a correlation with age.

Conclusions: Similarly to the previous studies, we showed that children with ASD had impairments at the single-word level, and accuracy both in production and comprehension correlated with non-verbal IQ (Kjelgaard & Tager-Flusberg, 2001). Crucially, our results demonstrated that expressive vocabulary is more impaired than receptive. However, we acknowledge that this is a pilot results with a relatively small group size. Data from a larger group would provide much precise information on expressive-receptive abilities of Russian children with ASD.

414.027 (Poster) Frequency of Household Book Reading May Explain SES Disparities in Expressive Language – Findings from a Nationally-Representative Sample of Children with ASD

M. G. Pecukonis, M. Barokova, C. G. La Valle and H. Tager-Flusberg, Department of Psychological and Brain Sciences, Boston University, Boston, MA

Background: While most studies have focused on identifying the neurobiological bases of language impairments in ASD (Groen et al., 2008), few have explored how the environment shapes language development in this population. One study found that children with ASD from higher socioeconomic status (SES) families had greater language abilities (Grandgeorge et al., 2009), which may be explained by differences in language learning experiences, such as book reading. Book reading has a positive impact on language development for children with and without ASD (Boyle et al., 2019; Hoff, 2013), but it occurs less frequently in low SES households (Yarosz & Barnett, 2010). Previous research on typically-developing children has demonstrated that book reading mediates the relation between SES and language (Farrant & Zubrick, 2011), yet no studies have explored this relation in ASD.

Objectives: The current study used data from the 2018 U.S. National Survey of Children's Health to investigate whether expressive language (EL) in children with ASD differs based on family SES and frequency of household book reading, and to determine whether book reading mediates the relation between SES and EL.