Title: Communication between Mothers and Children with Autism Spectrum Disorder during a Free-Play Interaction

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Introduction: Social communication skills can include a broad array of verbal and nonverbal behaviors important for reciprocal social interaction. In this study, we are interested in how children use and integrate verbal and multiple channels of nonverbal behaviors in the context of a naturalistic social interaction. Two sets of children with Autism Spectrum Disorder (ASD) were examined, a group of children who are verbal and a group of minimally verbal (MV) children. In addition, the behaviors of the parents in both groups were investigated to observe how they are communicating with their children.

Method: Participants in this study included 30 toddlers with ASD (M=31 months) and their mothers. Half of the toddlers were MV, while the other half were verbal. There were no differences in age (p=0.81) and Autistic Severity on the ADOS (M=7; p=0.91). There were no differences in nonverbal cognition on the Bayley (p=0.16) and comprehension scores on the PLS-4 (p=0.11) when comparing both groups of children. A 15-minute naturalistic mother-child play session was completed. Parents were instructed to “Play with your child as you normally would at home” using a standard set of toys. Sessions were audio/videotaped for later coding using ELAN software. Coding of nonverbal behaviors for the children included: gestures, eye contact, positive and negative affect through auditory vocalizations (i.e. crying/whining; laughing). For parents, verbal behaviors included the total time speaking during the dyadic interaction and for nonverbal behaviors included: gestures, eye contact, and physical contact.

Results: A MANOVA on the children's data, revealed that the omnibus test was significant F(4,25)=3.062, p=.035; Wilk’s Λ=0.671, partial η²=.329. The dependent variables of Gestures F(1,28)=4.729, p=.038; partial η².14 and Eye Contact F(1,28)=5.569, p=.025; partial η².17 were significant as verbal children with ASD produced more of these behaviors than MV children with ASD. Positive Affect was not significant (p=.202) and a trend was observed for Negative Affect (p=.095). For the Parents, the omnibus MANOVA was significant F(4,25)=3.060, p=.035; Wilk’s Λ=0.671, partial η²=.329. Gesture (p=.615) and Eye Contact (p=.756) were not significant. Physical contact was significant, F(1,28)=5.740, p=.024; partial η².17, as physical contact was observed more in parents with MV children with ASD. There was a trend for frequency of talk (p=.054) to differ across groups with the parents of verbal children talking more than parents of MV children.

Discussion: The goal of this study was to observe how two groups of children with ASD (verbal vs. MV) communicate with their mothers. Verbal children were producing more eye contact with their mothers and gestured more than MV children. The differences in these nonverbal channels are noteworthy since deficits in nonverbal communication are part of diagnostic criteria for ASD. It is interesting to see individual differences within ASD children. The gesture results in the verbal children with ASD are in line with McNeill’s (1992, 2005) hypothesis that language and gesture form an integrated system. A trend was observed for negative affect, as more whining and crying were observed in MV children compared to verbal children. Although no outliers were taken out of any of our measures, it is interesting to note the majority of the children with outlying values also happened to be children expressing the most negative affect. For parents, MV children required more physical contact than verbal children. A closer examination of the data did signify that parents on multiple occasions had to comfort their MV child as they were expressing negative affect. Finally, a trend was found for frequency of talk, such that parents with verbal children talked more than parents with MV children. Taken together, we did observe significant differences in communicative behaviors in verbal and MV children with ASD and their mothers. Future longitudinal studies should investigate whether the communication style of MV children with ASD is qualitatively different across development or merely delayed compared to verbal children with ASD.

References/Citations: