# Influence of investigator's use of "um" on verbally fluent children on the autism spectrum and/or with ADHD

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## BACKGROUND

- "*Um*" is proposed to serve a pragmatic function in discourse.[1,2]
- Studies have reported that autistic children and children with attention deficit/hyperactivity disorder (ADHD) produce fewer "*um*" tokens than their peers without diagnoses of autism/ADHD (no diagnoses; ND), although the evidence is mixed.[1,3,4]
  - "*Um*" use in ASD has typically been assessed in a single context (e.g., standardized testing).
  - Few studies consider the investigator's role as a discourse partner.
- Moreover, autism & ADHD frequently co-occur (referred to as AuDHD).[5]
  - Despite high co-occurrence, few studies have looked at "*um*" use of AuDHD children.

**OBJECTIVE:** To investigate "*um*" use by both the child and adult investigator, specifically by considering **a) varying contexts** and **b) the role of the investigator as a co-conversationalist**

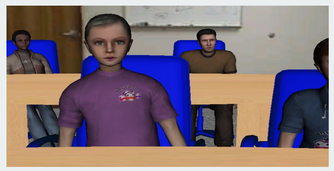
## METHODS

| | ASD (n = 21) | ADHD (n = 24) | AuDHD (n = 31) | ND (n = 22) |
|---|---|---|---|---|
| **Age** | 11.6 (2.2) | 11.9 (2.5) | 12.0 (2.3) | 12.5 (2.3) |
| **VIQ** (WASI) | 96.2[a] (14.1) | 97.4[a] (14.1) | 96.2[a] (17.1) | 110.9[b] (13.7) |
| **ADOS** | 9.3[a] (3.3) | 4.5[b] (3.9) | 10.8[a] (3.2) | --- |

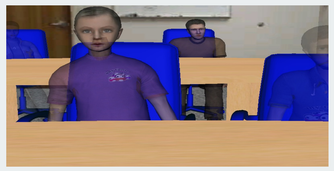
**NOTE**: superscripts of different letters indicate a statistically significant difference; TD group did not receive the ADOS

- Children viewed a virtual classroom and participated in three 3-minute conditions varying in social demand: **Non-Social** (viewing 9 lollipops), **Social** (viewing 9 "peer" avatars), and **High-Demand Social** (viewing 9 peer avatars who fade when not fixated)

Non-Social Phase



Social Phase



High-Demand Social Phase

- Children answered questions about their lives (e.g., favorite vacation, holiday, etc.) while addressing avatars
- Audio recordings were transcribed and analyzed using CLAN.[6]
- "*Um*" tokens were tallied for the child (CHI) and investigator (INV) separately

## RESULTS

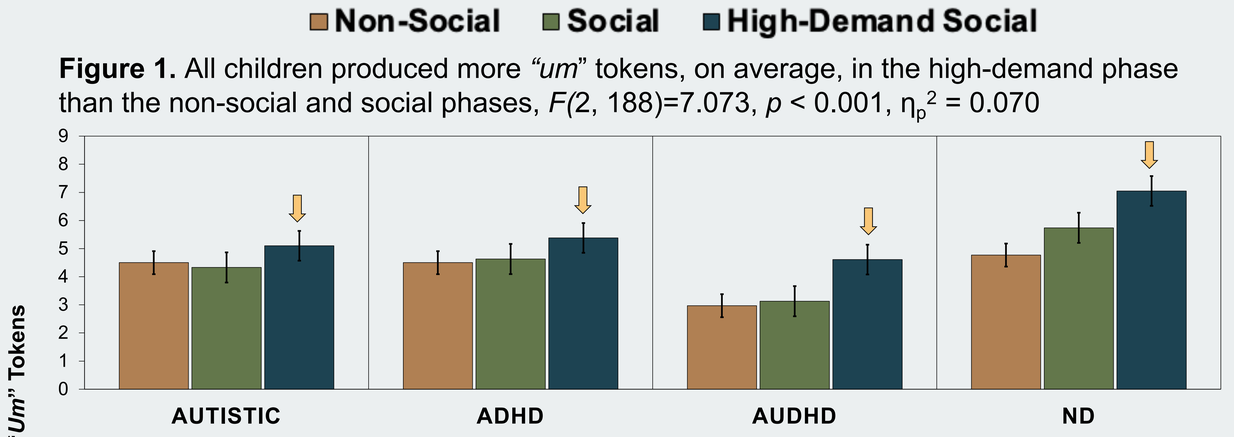



**Figure 1.** All children produced more *"um"* tokens, on average, in the high-demand phase than the non-social and social phases, $F(2, 188)=7.073$, $p < 0.001$, $\eta_p^2 = 0.070$


**Figure 2.** INV produced more "*um*" tokens, on average, in the high-demand phase than the non-social and social phases, $F(2, 194)=27.136$, $p < 0.001$, $\eta_p^2 = 0.219$

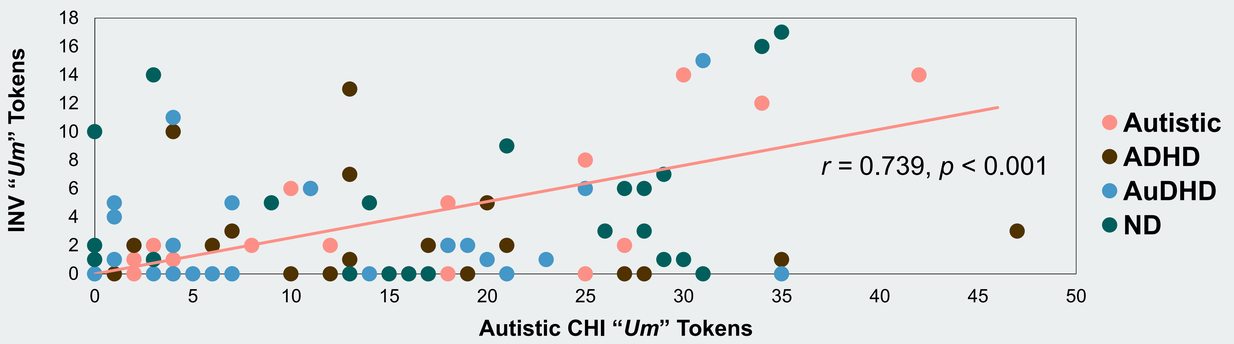



**Figure 3.** Significant positive correlation btwn investigator and autistic children's use of "*um*"

## DISCUSSION

- All groups produced more *"um"* tokens during the high-demand social phase, suggesting that **"*um*" use may be modulated by context**.
- Autistic children's production of "*um*" was systematically related to that of the investigator, suggesting **possible reciprocal priming effects of the investigator and child's DM use**.
  - While the investigator was required to follow scripted questions in this study, "*um*" use tends to be unscripted and more 'natural'.
- Both the context and investigator effects may help explain the current mixed evidence concerning "*um*" use by autistic individuals.

## REFERENCES + ACKNOWLEDGMENTS

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