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Effects of Interlocutor Familiarity on Language Diversity in Autistic Children

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ABSTRACT

Children differentiate and diversify their lexicons and syntactic structures when interacting with different interlocutors to improve mutual understanding. Autistic children may not be able to adapt language features as flexibly as their typically developing (TD) peers, resulting in challenges in expressing intentions effectively. Thus far, there is limited evidence on the language diversity of autistic children when interacting with interlocutors of different familiarity levels, particularly in online conversations. This study examined the effects of interlocutor familiarity on the lexical and syntactic diversity of 10 Malaysian English-speaking autistic children aged 6-8 years old in online conversations. Each child interacted with their mother (familiar interlocutor) and an undergraduate student (unfamiliar interlocutor) through a 10-minute online role-play game. Using CLAN software, the children's lexical diversity was computed using Voc-D and syntactic diversity using the Index of Productive Syntax (IPSyn) subscales. Our analysis showed that the lexical and syntactical diversity of autistic children is not influenced by interlocutor familiarity. This study's findings are preliminary and have implications for informing scaffolding strategies in online contexts.

Keywords: Autistic children, computerised language analysis, familiarity with interlocutors, lexical diversity, online conversations, syntactic diversity

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INTRODUCTION

Speakers often modify their utterances based on their belief in their conversational partner's knowledge to achieve mutual understanding (Bell, 1984). These modifications include lexical and syntactic choices and may require social cognition abilities, including social perception and Theory of Mind (Baron-Cohen, 1990). Most studies have shown that typically

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developing (TD) children exhibit more engagement and can flexibly diversify their lexicons and syntactic structures when interacting with familiar than unfamiliar interlocutors during both in-person and online conversations (Dao et al., 2021; Levi, 2015). However, relatively less attention has been given to the language diversity of autistic children, particularly in online conversations.

Autistic children, characterised by difficulties in ToM may find it challenging to flexibly adapt language features during daily communications due to mindreading difficulties, restricted use of word types and syntactic structures, and reduced conversational initiation and maintenance (Peterson et al., 2009). Understanding their structural language output in online conversations could provide preliminary data to inform tailored strategies for enhancing engagement and conversation outcomes in online distance education and teleintervention. Ages 6-8 represent a critical transition to school-age language development, where linguistic demands and complexity increase significantly across both educational and social contexts (Shiel et al., 2012). Analysing their structural differences in this period could reveal how conversational patterns are shaped by interlocutor familiarity constraints.

Therefore, this present study compares the lexical and syntactic diversity of autistic children when interacting with two groups of interlocutor familiarity in online conversations.

METHODS

This study analysed a subset of data from a larger study that examines online adult-child interactions (FRGS/1/2020/SKK06/UNIM/03/1). 10 English-speaking Malaysian autistic children aged 6 to 8 years old, their mothers and 10 undergraduate students were recruited. The children's language skills, measured using the CELF-5 (Wiig et al., 2003), were lower than age-matched neurotypical peers reported in Chieng et al. (2024) study. Each child participated in two 10-minute online sessions: one with their mother and another with a student in a counterbalanced order, through the Toca Kitchen activity. This conversational activity is set in a semi-structured role-play cooking scenario, where the child and the adult take turns as the chef and customer, reflecting their daily communication in a way that closely resembles real social interactions. This semi-structured setting facilitates children to produce language in a flexible but guided manner, they were expected to talk about the aspects of the cooking scenario they found most engaging. Utilising the CLAN program (MacWhinney & Erlbaum, 2000), lexical diversity was measured using Voc-D (Malvern et al., 2004) and syntactic diversity was measured using IPSyn (Altenberg et al., 2018). Statistical analyses were conducted through *t*-test and repeated-measure ANOVA to address our research questions.

ETHICAL STATEMENT

The procedures were approved by the Ethical Committee of the University of Nottingham Malaysia (ref no: FASS2022-0009/SoEd/ACC20386343). Adult participants of this study provided written consent, and all children gave their verbal assent on Zoom with their guardians. All the participants' data were uniquely coded to ensure anonymity and were only accessed by the researchers for confidentiality.

RESULTS AND DISCUSSION

Overall, the *t*-test showed no significant difference in the children's lexical ($t(10) = 0.42$, $p = 0.69$) and syntactic diversity ($t(7) = 1.75$, $p = 0.13$) when interacting with different interlocutor types (Figures 1 and 2). As we did not observe differences in syntactic diversity, further analysis was conducted using repeated-measure ANOVA to examine the two-way interaction between the IPSyn subscales (i.e., noun phrases, verb phrases, sentence structures) and the interlocutor types. The findings showed a main effect of the subscales, *F(2,36) = 3.57, p = 0.038, and p*ost-hoc Tukey analyses indicated that the use of sentence structures was higher than noun phrases regardless of interlocutor familiarity.

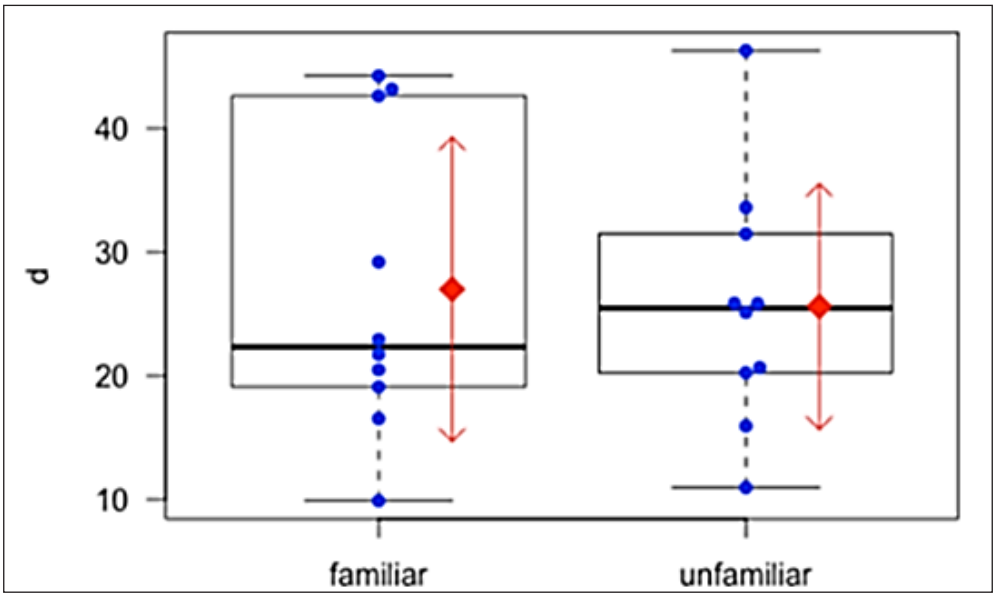

Figure 1. Box plot of autistic children's lexical diversity with familiar and unfamiliar interlocutor

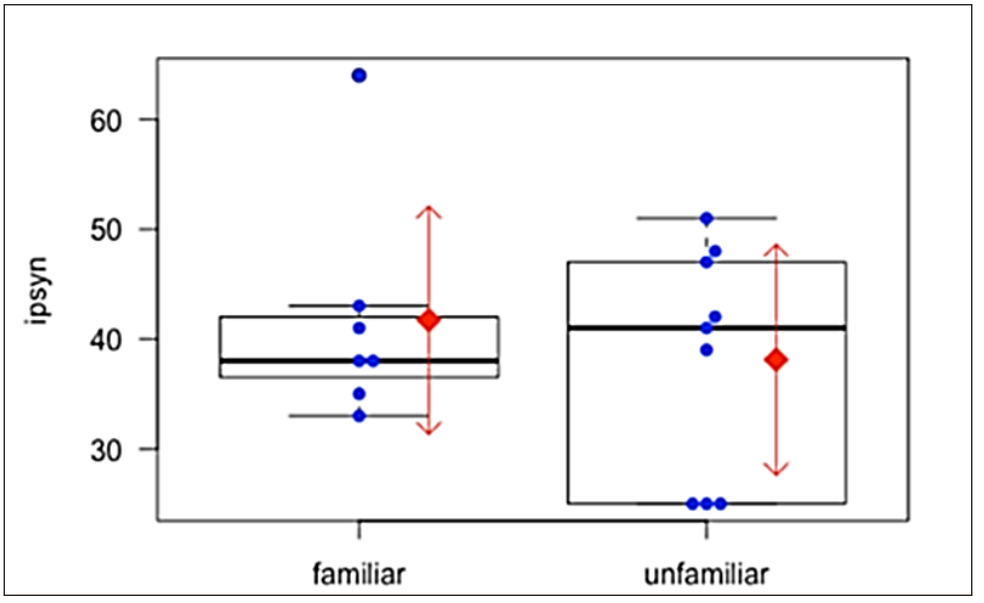

Figure 2. Box plot of autistic children's syntactical diversity with familiar and unfamiliar interlocutors

The lack of interlocutor-type effects could be attributed to different explanations. First, autistic children in this study demonstrate lower language proficiency and use mainly simple sentence structures as indicated by IPSyn; therefore, the predominant use of basic syntactic structures limits differences in language diversity when interacting with interlocutors. Second, children's difficulties with ToM, as suggested by the literature, which hinder their ability to adjust language flexibly (Fisher et al., 2005). On contrary to ToM, the double empathy problem posits that breakdowns in mutual understanding can occur between individuals with different dispositions and experiences. Such breakdowns likely occurred when adults have difficulty to be flexible in communication with autistic children (Rachanska, 2025). Furthermore, the methodological constraints of IPSyn resulted in the loss of valuable information, as three children produced fewer than 50 complete utterances. Lastly, this study used conversational tasks to elicit naturalistic language samples, whereas past studies (e.g., Lenhart et al., 2022) have found that syntactic complexity varies by tasks, with conversational child speech showing less complex sentence structures while more structured expository language speech shows greater syntactic complexity. Therefore, compared to past studies that used more structured elicitation methods, this study's naturalistic tasks may contribute to lower observed syntactic complexity regardless of interlocutor familiarity.

CONCLUSION

These preliminary findings indicated no effect of interlocutor familiarity on the lexical and syntactic diversity of the 10 autistic children within one type of online interaction. The lack of flexibility in adjusting language features and using basic syntactic structures has implications for scaffolding strategies aimed at broadening the use of vocabulary and complex syntactic structures that support precise expressions of nuances or complex thoughts. Future studies might consider replicating these findings with larger sample sizes across different conversational contexts and with control groups to enhance the generalisability of the results.

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