Chapter 8
Predictive Language Processing in Autism Spectrum Disorder and Developmental Language Disorder

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ABSTRACT

Predictive Language Processing is a conversational skill and concerns the speaker's ability to predict the utterance of the interlocutor during a conversation. Children with Autism Spectrum Disorder (ASD) and children with Developmental Language Disorder (DLD) face language deficits, while they often share common language characteristics. The purpose of this study is to assess Predictive Language Processing (PLP) in 25 children with ASD, 25 children with DLD, and 25 typically developing (TD) children. Participants were administered a non-standardized test that evaluates the PLP in order to compare their performance on this ability. Results showed that children with DLD performed lower than the other two groups, while the performance of children with ASD was similar to that of their TD peers. The findings are discussed in the context of specific characteristics that could be criteria

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for distinguishing the two clinical populations.

INTRODUCTION

Developmental Language Disorder (DLD) is a neurodevelopmental disorder with delayed language development and language difficulties being its main features (Bishop et al., 2017). However, previous studies have shown that individuals with DLD may present common language deficits with individuals with Autism Spectrum Disorder (ASD) (Tager-Flusberg & Joseph, 2003; Roberts et al., 2004). Research comparing language development between DLD and ASD populations found that the two disorders share several similarities in terms of the language difficulties they face, leading to the assumption of a possible overlap between them (Kjelgaard & Tager-Flusberg, 2001; Tager-Flusberg & Joseph, 2003). Bishop (2010) suggests that deficits in language development have common sources and that DLD and ASD are parts of the same continuum. Conversely, other studies comparing the two disorders claim that the commonalities between them cannot lead to conclusions about a common phenotype or an overlap between them (Whitehouse et al., 2007; Williams et al., 2008). Therefore, research on language development in ASD and DLD comes to conflicting conclusions and it has not yet been clear whether the phenotypic trajectories of ASD and DLD are common or different. Few studies focus on characteristics that could differentiate the two disorders (e.g. Andrés-Roqueta & Katsos, 2020; Andreou et al., 2022; Creemers & Schaeffer, 2022; Demouy et al., 2011). For example, there are studies which claim that pragmatic language deficits of children with ASD and children with DLD are different (Andrés-Roqueta & Katsos, 2020; Georgiou & Spanoudis, 2021; Hage et al., 2021), while Pragmatic Language (PL) abilities are likely to be controlled by different mechanisms in ASD and in DLD (Andreou et al., 2022).

Predictive Language Processing (PLP) is a challenging component of language comprehension and in particular it concerns real-time sentence comprehension (Brothers et al., 2017), while this ability is linked to conversational skills (Jones & Westermann, 2021) and in general is included among pragmatic language abilities (Matthews et al., 2018). More specifically, PLP concerns the ability to predict the upcoming words based on the characteristics of the utterance of the interlocutor (Curcic et al., 2019; Verhagen et al., 2018). Reuter et al. (2020) found that informative verbs appear to be more useful for generating predictions than adjectives and number markings. This ability enables the speaker to process the linguistic stimuli of his/her interlocutors quickly and efficiently, as it allows the speaker to assume the possible linguistic inputs based on the semantic features of the utterance or the constraints of the context (Federmeier, 2007; Huettig & Janse, 2016).