

## Chapter 13

# Associations Between Language Impairments and Behavioral Problems in Childhood: Neurocognitive Mechanisms and Future Implications

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### **ABSTRACT**

*Language development has a significant impact on healthy emotional functioning throughout the lifespan. There is increasing evidence highlighting the existence of specific language deficits on distinct developmental diagnoses, which posits difficulties in various aspects of language, such as language processing deficits, vocabulary and verbal fluency, and pragmatic language impairment. In particular, separate lines of research have unveiled that language problems may exist in conduct disorder, oppositional defiant disorder, and also in populations posing elevated callous unemotional traits. The scope of the present chapter is to summarize key evidence in this area of inquiry, by focusing on the underlying neurocognitive mechanisms involved in language problems. Conducting such analysis will aid in a better understanding of the key behaviours, cognitive mechanisms, and biological signatures of such difficulties that may assist future research in this area of research and designation of more tailored educational and therapeutic interventions.*

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## **INTRODUCTION**

Poor linguistic performance in young children has been shown to present a unique predictive value as per the occurrence of conduct issues during the same or a subsequent time period (Petersen & LeBeau, 2021). There is mounting evidence to suggest that atypical language acquisition patterns and aggression share an underlying bond. Clinical cases that are classified under the category of language present behavioral manifestations as well, such as the case of Developmental Language Disorder (DLD). This connection is also vastly denoted in the context of conduct difficulties, such as Conduct Disorder (CD), Oppositional Defiant Disorder (ODD) and Callous-Unemotional (CU) traits, where frequent linguistic implications are reported. The literature has described this relationship as bidirectional, though studies that have simultaneously examined both directions have concluded that language affects later behavior more robustly than the reverse (Petersen & LeBeau, 2021). The present chapter aims to summarize key evidence on the association between language deficits and such behavioural problems in development, highlighting that possible underlying neurocognitive mechanisms may have significant implications on early accurate diagnosis, intervention approaches, and long-term outcomes.

### **Communication Disorders**

Communication disorders form a distinct area of the Diagnostic Statistical Manual – V (DSM; APA, 2023) which incorporates clinical sub-conditions where the process of communication is impaired, while other neurological factors remain intact. Language acquisition and use are compromised, and reflect pervasive and persistent problems in every element of the process of communication: language acquisition, language comprehension and production, as well as speech processing. These effects present as cross-modal, which means that they can affect verbal, written, and sign communication (Cummings, 2023). Communication disorders can disrupt the mechanisms that promote encoding and decoding of the linguistic material, a condition that leads to a language disorder. They are subdivided into five clinical entities: developmental language disorder (DLD), speech sound disorder, childhood-onset fluency disorder (stuttering), social (pragmatic) communication disorder, and unspecified communication disorder (Flickinger et al., 2022).

The prevalence of communication disorders in the general population is high, but the exact rate varies across studies. In the United States, the prevalence is estimated nearly one out of ten school-aged children, whereas in South India and Spain the percentage falls to 4.29% and 1% respectively (Cummings, 2023). By the time children reach the first grade, a 5% presents with a diagnosable communication deficit. A percentage of 28% - 60% of the children with a communication disorder have a parent and/or a sibling who is also affected (Glasby et al., 2022).

The impact of a communication disorder is pervasive in every aspect throughout development. Emotion regulation, social adjustment, and learning outcomes are immediately affected, whereas, in the absence of proper psychological treatment during childhood, the condition can lead to mental health problems, such as depression and anxiety disorders (Stransky et al., 2020). The initial focus of the present chapter is on Developmental Language Disorder (DLD) as a distinct clinical entity and its relation to behavioral problems.

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