

Pragmatic Language Development and Impairments in Children with Autism Spectrum Disorder (ASD): A Review

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Abstract

Pragmatic language refers to how individuals use language effectively and appropriately within social contexts. It involves the ability to interpret meaning beyond words understanding tone, intent, and nonverbal cues during communication. This review examines the development of pragmatic language in typically developing children and highlights the nature of pragmatic impairments in individuals with Autism Spectrum Disorder (ASD). In typical development, pragmatic competence emerges gradually through early interactions, joint attention, and social engagement. In contrast, children with ASD often display difficulties in conversational reciprocity, topic maintenance, and interpreting figurative or nonliteral language, even when their grammar and vocabulary are intact. These challenges are linked to underlying differences in joint attention, theory of mind, and executive functioning. The review further discusses the social, educational, and long-term implications of pragmatic deficits and emphasizes the need for culturally sensitive, technology-supported, and ecologically valid interventions. Strengthening pragmatic competence is crucial for enhancing communication, social integration, and overall quality of life in individuals with ASD.

Keywords: Pragmatic language, social communication, Autism Spectrum Disorder, Joint attention, Theory of mind, Intervention

1.Introduction

Pragmatic language refers to the ability to use language in ways that are socially appropriate and contextually meaningful. It encompasses the unspoken rules of social communication that guide how individuals initiate and respond during interactions. Beyond correct grammar and vocabulary, pragmatics enables people to build relationships, interpret intentions, and use nonverbal cues such as gestures, tone, and eye contact effectively (Bishop, 1997; Tager-Flusberg, 2000).

Language can be understood as having both structural and functional components. The structural aspect includes syntax, semantics, and phonology, while the functional component pragmatics focuses on how language is used to achieve communicative goals in specific contexts (Paul, Norbury, & Gosse, 2018). Whereas structural accuracy ensures linguistic correctness, pragmatic competence ensures social appropriateness.

Pragmatic ability underpins the development of peer relationships, classroom participation, and broader social inclusion. When impaired, as seen in various developmental conditions, difficulties in conversational reciprocity, topic maintenance, and interpreting figurative meaning can lead to social withdrawal and communication breakdowns.

2. Pragmatic Language Development in Typical Children

In typically developing children, the ability to use language socially unfolds in a natural and predictable sequence, reflecting the integration of linguistic, cognitive, and social growth rooted in early relationships. Pragmatic development starts in infancy, as infants engage in early turn-taking through cooing and babbling interactions with. They learn to share attention by following a parent's gaze or point, a foundational skill known as joint attention (Bruner,

1983). By their first birthday, they are using gestures to point out interesting things, not just to ask for them, showing a desire to share their world (Tomasello, 2003).

Between 18 and 36 months, children expand their communicative repertoire by initiating and responding in conversations, using language to request, protest, and comment, and maintaining brief exchanges (Tomasello, 2003). During the preschool years, pragmatic competence grows to include adjusting speech to the listener, employing politeness markers, and using prosody appropriately. By school age, children demonstrate the ability to maintain extended topics, infer implied meanings, understand humor, and interpret figurative language (Nippold, 1998).

Social interactions provide the scaffolding for pragmatic language development. Responsive caregiver communication, such as contingent replies and modelling of conversational turn-taking, is strongly associated with growth in children's pragmatic skills (Snow, 1999). Peer interaction during the preschool and school years further supports pragmatic development by offering opportunities for practicing negotiation, conversational repair, and conflict resolution. Importantly, pragmatic norms are embedded in cultural contexts, with variations in politeness, eye contact, and conversational expectations shaping how children acquire pragmatic competence (Ochs & Schieffelin, 1995).

3. Pragmatic Language Impairments in Autism Spectrum Disorder (ASD)

For children with Autism Spectrum Disorder (ASD), navigating the social aspects of conversation is often one of the most significant challenges. Even when a child has a strong vocabulary and can form complex sentences, they may struggle profoundly with the social use of this language (American Psychiatric Association, 2013) which significantly impacts peer relationships, education, and daily functioning. Children with ASD frequently show impairments in initiating and maintaining conversations, interpreting the intentions of others,

and using nonverbal communicative behaviors such as gestures, eye gaze, and facial expressions. These difficulties are linked to challenges in joint attention, theory of mind, and perspective-taking (Tager-Flusberg, 2000). Consequently, conversational exchanges often appear one-sided, repetitive, or poorly attuned to the communication partner's needs.

It's important to recognize that these challenges look different across individuals. Some children may be minimally verbal, communicating primarily through gestures or assistive technology, with their social communication focused on basic needs like requesting. Others may be highly verbal, but their conversations can feel one-sided, scripted, or overly formal, lacking the natural flow of reciprocity (Paul et al., 2009). Pragmatic challenges in ASD are evident in everyday interactions. Common examples include literal interpretation of figurative language, sarcasm, or jokes (Happé, 1995); poor conversational turn-taking, such as interrupting or dominating interactions; topic fixation on restricted interests without regard for the listener's perspective; reduced use of nonverbal cues to supplement speech; and difficulties in repairing communication breakdowns. These pragmatic deficits are not merely secondary to structural language delay but reflect core social-communication differences that define ASD (American Psychiatric Association, 2013).

4. Underlying Mechanism

Pragmatic language competence in children is not only dependent on structural linguistic skills but also shaped by a set of underlying cognitive and socio-communicative mechanisms. In Autism Spectrum Disorder (ASD), deficits in these foundational processes—particularly joint attention, theory of mind, and executive functions—are closely linked to the pragmatic impairments that characterize the condition.

4.1 Joint attention and its role in pragmatics.

The early ability to share focus with another person is like a social gateway. When this is challenging, as it often is for children with ASD, it disrupts the very process of learning through shared experience (Mundy & Newell, 2007). Without this, building the back-and-forth of conversation is much more difficult (Kasari et al., 2006) and it is considered a precursor to pragmatic language development (Mundy & Newell, 2007). Through joint attention episodes, children learn to share experiences, establish common ground, and interpret communicative intent. In typical development, joint attention emerges in the first year of life and provides the foundation for turn-taking, conversational reciprocity, and topic maintenance. In contrast, children with ASD often show significant deficits in both responding to and initiating joint attention, which directly undermines their ability to develop socially functional language (Kasari, Freeman, & Paparella, 2006).

4.2 Theory of mind (ToM) and perceptive taking.

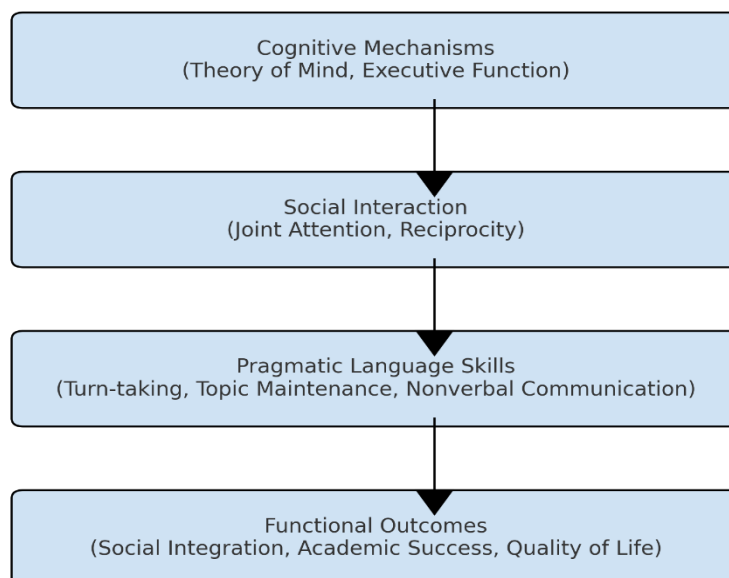
This is the ability to understand that others have thoughts, feelings, and perspectives different from your own. Pragmatic language relies heavily on this skill. To tell a story, you must consider what your listener already knows. To detect sarcasm, you must infer the speaker's true intent. Difficulties with theory of mind can lead to conversations that feel egocentric or out-of-sync (Baron-Cohen et al., 1985; Tager-Flusberg, 2001). Research consistently demonstrates that many children with ASD have difficulties with ToM tasks, which contributes to challenges in conversational adaptation, interpreting sarcasm or irony, and avoiding egocentric speech patterns (Baron-Cohen, Leslie, & Frith, 1985; Tager-Flusberg, 2001).

4.3 Executive functions

Everyday conversation requires a suite of mental management skills. We need working memory to hold onto the thread of the discussion, inhibitory control to stop ourselves from blurting out, and cognitive flexibility to switch topics smoothly. When executive functions are impaired, it can lead to topic fixation, difficulty repairing a misunderstood comment, and problems adapting to the unpredictable flow of social interaction. Effective conversation requires children to plan utterances, monitor their partner's responses, inhibit inappropriate comments, and shift topics smoothly. Deficits in executive functioning, widely documented in ASD, are associated with difficulties in turn-taking, staying on topic, and repairing communication breakdowns (Hill, 2004). For example, reduced cognitive flexibility may contribute to perseverative speech or topic fixation, while poor inhibitory control can lead to interruptions or socially inappropriate comments.

Figure 1. showing the relationship between pragmatic deficits and ASD outcomes.

Figure 1. Conceptual Model of Pragmatic Language Development



5. Consequences of Pragmatic Deficits

Pragmatic language difficulties in Autism Spectrum Disorder (ASD) extend beyond linguistic performance and have profound consequences for social, academic, and long-term functional outcomes. Because pragmatics governs how language is used in context, deficits in this domain disrupt children's ability to build relationships, engage effectively in learning environments, and achieve independence in adulthood.

5.1 Impact on peer relationships and social participation.

Making and keeping friends is a complex linguistic task. Children who struggle with social communication are often left on the sidelines, leading to loneliness, peer rejection, and missed opportunities to practice social skills (Bauminger & Kasari, 2000; Capps et al., 1998). Pragmatic impairments often lead to difficulties in forming and maintaining friendships. Children with ASD may struggle to interpret social cues, follow conversational rules, or engage in reciprocal play, which can result in peer rejection or social isolation (Bauminger & Kasari, 2000). Even verbally fluent children with ASD frequently show restricted conversational styles, perseverative interests, or difficulties adapting to their partner's perspective, reducing the quality of peer interactions (Capps, Kehres, & Sigman, 1998). Limited pragmatic competence also reduces opportunities for collaborative play and group activities, thereby restricting social participation in naturalistic settings.

5.2 Educational challenges.

The classroom is a highly social environment. A student may misunderstand a teacher's nuanced instruction, struggle to contribute appropriately to group work, or have difficulty with the narrative language required for reading comprehension and writing (Norbury & Sparks,

2013). These challenges can hinder academic achievement even for intellectually capable students. Pragmatic deficits pose significant challenges in the classroom, where communication extends beyond basic language comprehension. Children with ASD may misinterpret teacher instructions, fail to ask clarifying questions, or struggle with narrative and discourse skills necessary for academic tasks (Norbury & Sparks, 2013). Group work and peer-based learning, which require effective turn-taking, negotiation, and cooperative problem-solving, often highlight pragmatic weaknesses. These challenges contribute to difficulties in both academic performance and classroom inclusion.

5.3 Long-term effects on independence and quality of life.

Limited conversational competence and difficulties interpreting subtle social cues can hinder employment opportunities, romantic relationships, and community integration. Difficulties with job interviews, workplace small talk, and building romantic relationships can limit independence and vocational success (Howlin et al., 2004). Many adults with ASD report that these ongoing social challenges contribute to anxiety, depression, and a reduced quality of life (Mazurek, 2014). Thus, pragmatic deficits not only affect immediate social and educational outcomes but also have enduring implications for independence, vocational success, and overall quality of life. Overall, pragmatic language deficits represent one of the most socially disabling features of ASD, underscoring the importance of early identification and intervention to mitigate their long-term impact.

6. Current Gaps and Future Directions

Although considerable progress has been made in understanding pragmatic language deficits in Autism Spectrum Disorder (ASD), important gaps remain in both research and clinical

practice. Addressing these limitations is crucial for developing more effective, inclusive, and sustainable intervention approaches.

6.1 *Need for longitudinal studies.*

We need more research that follows individuals over many years to understand how their social aspect communication skills change throughout their lives and which early interventions lead to lasting benefits (Pickles et al., 2014). Much of the existing literature on pragmatic language in ASD is based on cross-sectional designs, which provide snapshots of development but fail to capture individual trajectories. Longitudinal studies are necessary to understand how pragmatic skills evolve across childhood, adolescence, and adulthood, and how early interventions influence long-term outcomes (Pickles et al., 2014). Such research can clarify whether pragmatic improvements achieved in therapy are sustained over time and whether they generalize to real-world functioning.

6.2 *Cross-cultural perspectives.*

Pragmatic norms vary across cultures, influencing what is considered appropriate eye contact, turn-taking, or politeness. However, most research on ASD has been conducted in Western, English-speaking populations. Cross-cultural studies are needed to examine how pragmatic deficits manifest in diverse cultural and linguistic contexts, and to ensure that assessment tools and interventions are culturally valid (Norbury & Sparks, 2013). This perspective is particularly critical in multilingual societies, where pragmatic expectations may differ across languages.

6.3 *Integration of technology-based interventions.*

A major challenge is ensuring that skills learned in a therapist's office are used spontaneously at home, on the playground, or at work (Adams et al., 2012). Future interventions must be

designed to bridge this gap by actively involving families, peers, and community settings. Emerging technologies offer promising avenues for supporting pragmatic development in ASD. Computer-based programs, mobile applications, and telepractice platforms have shown potential in enhancing social communication skills, particularly when access to in-person services is limited (Parsons & Cobb, 2011). Virtual reality environments, for example, provide safe spaces for practicing conversational skills, while telepractice expands service delivery to underserved areas. Nonetheless, more controlled trials are needed to evaluate the efficacy and sustainability of these approaches.

6.4 Emphasis on generalization across contexts.

One of the persistent challenges in pragmatic intervention is ensuring that gains achieved in therapy settings generalize to natural environments such as homes, schools, and communities. Studies frequently report improvements in structured therapy sessions but limited transfer to spontaneous conversation (Adams et al., 2012). Future research must focus on designing interventions that incorporate multiple partners, varied contexts, and functional activities to enhance generalization and long-term maintenance of skills.

Conclusion

Pragmatic language difficulties are a defining feature of Autism Spectrum Disorder (ASD), affecting conversational reciprocity, nonverbal communication, and interpretation of implied meaning. These challenges often persist despite intact structural language and significantly impact social, educational, and life outcomes. Early, targeted, and context-sensitive interventions—especially those emphasizing joint attention, social cognition, and caregiver involvement—can foster meaningful improvements in pragmatic competence (Kasari et al.,

2006; Adams et al., 2012). Future research should prioritize longitudinal, cross-cultural, and technology-integrated approaches that support generalization to real-world contexts.

In summary, pragmatic language represents both a challenge and an opportunity in ASD. Aligning research and clinical practice toward individualized, socially embedded interventions can enhance communicative competence and improve life outcomes for individuals on the spectrum.

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