



## Research paper

# Collaborative competence in dialogue: Pragmatic language impairment as a window onto the psychopathology of autism



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## ABSTRACT

**Background:** Pragmatic language, including conversational ability, can be difficult for people with autism. Difficulties with dialogue may reflect impairment in interpersonal engagement more than general language ability.

**Method:** We investigated conversational abilities among children and adolescents with and without autism (n = 18 per group) matched for language proficiency and productivity. Videotaped conversations from the Autism Diagnostic Observational Schedule (ADOS, Lord, Rutter, DiLavore, & Risi, 2001) were rated according to the Collaborative Competence in Dialogue (CCD) scale featuring six verbal and non-verbal ‘cues’ that conversational partners use to sustain dialogue.

**Results:** Participants with autism produced significantly fewer ‘typical’ communicative cues and more cues rated as intermittent or rote/stereotyped, even when non-verbal items (gaze) were removed from consideration. Within the autism group, competence in dialogue was *not* correlated with ‘general’ language ability, but was correlated with a measure of pragmatic ability.

**Conclusions:** Difficulties with collaboration in dialogue may mirror the intermittent or incomplete interpersonal engagement of children with autism.

**Implications:** Assessment of language ability in autism should include observation in unstructured social settings.

## 1. Introduction

Language development is highly variable in autism (Tager-Flusberg, Paul, & Lord, 2005). However, even individuals with autism whose syntax (structure of language) and semantics (word meaning) may be relatively spared tend to have difficulties with aspects of pragmatic language (Baltaxe, 1977; Schoen Simmons, Paul, & Volkmar, 2014). The present study of the pragmatics of conversation is concerned with the ways in which verbal children with autism collaborate with an interlocutor to sustain a dialogue, and investigates the relationship between the children’s collaborative competence and their social impairments.

A variety of atypicalities in pragmatic language have been documented among people with autism. For example, it is common for affected individuals to encounter difficulty in initiating interaction and making conversational overtures (Loveland & Tunali-Kotoski, 2005); they tend to employ stereotyped or scripted language as well as idiosyncratic phrases or words, and may be atypical in the use of ‘I’ and ‘you’ (e.g., Lee, Hobson, & Chiat, 1994; Loveland & Tunali-Kotoski, 2005; Tager-Flusberg et al., 2005); and show some

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difficulties in relating narratives to others (Canfield, Eigsti, de Marchena, & Fein, 2016; Capps, Losh, & Thurber, 2000; Tager-Flusberg, 2005). So, too, their comprehension of others' speech can be limited, not least in understanding figurative or ambiguous language as in humour or irony (Happé, 1993). It is evident that such atypicalities will influence the quality of conversations between individuals with autism and other people (Fine, Bartolucci, Szatmari, & Ginsberg, 1994; Loveland & Tunali-Kotoski, 2005). In an early ground-breaking study, Baltaxe (1977) reported that a group of verbally-able adolescents with autism were inconsistent in maintaining appropriate speaker/hearer roles, they tended to produce unintentionally offensive utterances, and they failed to differentiate old and new information, thereby tending to repeat irrelevant facts. More recent research documents related problems with maintaining and adjusting topics to be relevant or interesting for interlocutors (De Marchena & Eigsti, 2016; Hale & Tager-Flusberg, 2005; Tager-Flusberg & Anderson, 1991; Volden, Magill-Evans, Goulden, & Clark, 2007; Nadig, Vivanti, & Ozonoff, 2009). Individuals with autism may fail to take into account an interlocutor's informational state, for instance, saying 'he' rather than naming a character when describing a film the other person has not seen (Arnold, Bennetto, & Diehl, 2009; Loveland & Tunali-Kotoski, 2005). Sometimes they omit to repair communicative breakdown by clarifying or repeating something the listener did not understand or hear (Volden, 2004), or require explicit cues from a conversational partner in order to maintain dialogue (Schoen Simmons et al., 2014).

However, many pragmatic abilities are relatively spared: children with autism can and do show the ability to adjust their communication in appropriate ways to interlocutors, albeit inconsistently or imperfectly (e.g. Nadig et al., 2009; Volden et al., 2007). This inconsistency poses a challenge for researchers to account for, and raises theoretical questions about the root cause of pragmatic language impairment in ASD. The present study concerns conversations between an adult investigator and children and adolescents with and without autism. Our first aim was to analyse strengths and limitations of participants' use of communicative cues in the course of conversations, what we call 'collaborative competence'. Our second aim was to investigate the relations between 'collaborative competence' and individuals' language ability and social interaction.

### 1.1. Conversation as joint engagement

The study of pragmatic aspects of conversation offers a window onto wider aspects of interpersonal understanding and relatedness. The reason is that in essence, conversation is an interpersonal interaction, albeit one that is verbally-mediated (Bates, 1976). Whether as speaker or listener, producing and comprehending language appropriate to context requires attunement to the mental states of the conversational partner (Levinson, 1983), as well as sensitivity to features of context and content that are relevant for the pair (Grice, 1975, 1978; Sperber & Wilson, 1986, 2002). Conversation also requires speakers to adjust their reactions and contributions on a moment-to-moment basis as the dialogue unfolds. Impairments in this domain tend to reflect problems with "responding to and expressing communicative intents" (Bishop, Chan, Adams, Hartley, & Weir, 2000:177) as well as achieving interpersonal co-ordination of mental attitudes and orientations.

One perspective on the development of pragmatic abilities is based on the notion that very young children's social interactions, especially when supported by competent communicative partners, enable them to acquire social understanding and pragmatic ability through activity, conceptualised variously as 'naïve participation' (Fernyhough, 2008) or 'use before meaning' (Nelson, 1996). Writers in this tradition view the child's access to the social, interpersonal context as primary in development, providing the attuned, collaborative exchanges from which cognition and language are moulded (Trevorthen & Aitken, 2001; Vygotsky, 1978). Correspondingly, pragmatic impairments in autism are considered to reflect atypicality in engagement with the bodily-expressed attitudes and actions of other people. One approach has been to highlight how children who develop autism have a limited ability to identify with others (Hobson, 2002, 2007, 2012). For instance confusions in the understanding and use of personal pronouns, or atypicalities in expressing greetings and farewells, may reflect failures in this basic kind of interpersonal role-taking (Hobson & Lee, 1998; Lee et al., 1994; Hobson, Lee, & Hobson, 2010). Given that identifying-with is a process with cognitive, motivational and affective aspects, this account reconfigures distinctions among these partly separable categories of mental functioning, and posits affective/motivational as well as cognitive aspects to pragmatic impairments in autism.

Provisional evidence in support of this account comes from recent research on conversations involving individuals with autism. In a study of nonverbal aspects of conversation with an adult, children with autism were reported to have subtle deficits in features of nonverbal communication, and in particular head-nodding, which are integral to collaboration in dialogue (García-Pérez, Lee, & Hobson, 2007). Compared with matched children without autism, those with autism were found to have marked limited affective engagement with the conversational partner, and a poorer flow of conversational exchange. In a further study of the same videotaped conversations, Hobson, Hobson, García-Pérez, and DuBois (2012) reported that among participants with autism, measures of affective engagement were correlated with the degree to which the children responded to the adult's intended meaning in dialogue, rather than the surface meaning of their utterances. A second finding from this sample (Du Bois, Hobson, & Hobson, 2014) was that although participants with autism showed 'dialogic resonance' in picking up features of the adult's prior speech (e.g. adult: 'What are you good at?' to which the participant responded: 'I am good at science.'), they were more likely than matched participants without autism to build upon the other's speech forms in atypical or deficient ways (e.g., adult: 'What do you like most about yourself?' to which a participant responded: 'Most about myself is the teach', demonstrating how the participant not only picked up and modified an expression to 'Most about myself...', but then failed to use this as a basis for what followed). While the children with autism often adapted the form of their responses in keeping with that of the adult, they were not consistent in assimilating this in such a way as to sustain coherent, relevant dialogue.

To further develop this approach, we can look to the field of conversation analysis, which offers a rich examination of the mental capacities needed for these aspects of successful conversation (Clark & Brennan, 1991; Clark & Krych, 2004). Conversation analysis allows the researcher to examine the moment-to-moment subtleties of verbal exchanges, providing data on the nuanced ways in

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