Referring expressions and structural language abilities in children with specific language impairment: A pragmatic tolerance account

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ABSTRACT

Specific language impairment (SLI) has traditionally been characterized as a deficit of structural language (specifically grammar), with relative strengths in pragmatics. In this study, comprehensive assessment of production, comprehension, and metalinguistic judgment of referring expressions revealed that children with SLI have weaknesses in both structural and pragmatic language skills relative to age-matched peers. Correlational analyses highlight a relationship between their performance on the experimental tasks and their structural language ability. Despite their poor performance on the production and comprehension tasks, children with SLI were able to recognize pragmatically under-informative reference relative to other types of utterance, although they imposed a less severe penalty on such expressions than typically developing peers, a pattern that supports the pragmatic tolerance account. Our novel methodology (which probed structural abilities from both the speaker's and hearer's perspectives as well as metalinguistic and pragmatic skills in the same sample) challenges the assumption that pragmatic errors stem from deficits in social cognition and instead supports recent findings suggesting that when the impact of structural language is isolated, pragmatic deficits may be resolved.

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Introduction

Reference is a central communicative skill in which speakers must identify the entity they wish to talk about and recognize how to describe the referent in a way that will unambiguously identify the intended referent for the listener. Thus, successful reference requires integrating cognitive, linguistic, and social pragmatic skills in order to scan the visual scene, identify distinctive features of the target relative to other potential referents, take account of previous and concurrent linguistic and environmental context, understand the listener's perspective and knowledge state, provide sufficient detail to disambiguate similar items, and then produce a felicitous referring expression (Ariel, 1990; Chafe, 1976; Clark & Bangerter, 2004; Clark, Schreuder, & Buttrick, 1983; Clark & Wilkes-Gibbs, 1986). For example, an optimally informative speaker should refer to "the small apple" when there are two apples of different sizes in the context; "apple" alone is under-informative in the given context and creates ambiguity and potential for communicative breakdown.

Although the development of reference in typically developing (TD) children has been researched extensively since the 1960s (for reviews, see Dickson, 1982, and Graf & Davies, 2014), the development of referential communication in clinical populations where component skills such as language and social pragmatics may be compromised has been under-researched. This is particularly so for children with specific language impairment (SLI), although such children may provide crucial evidence about the underlying skills associated with successful reference. SLI is a common developmental condition diagnosed when children fail to develop aspects of structural language (e.g., phonology, vocabulary, syntax) despite meeting other developmental milestones (Norbury & Paul, 2015). Traditionally, children with SLI were considered to have strengths in pragmatic language skills, or the use of language for social communication purposes, relative to their structural language abilities. In general, deficits in social cognition are not thought to characterize SLI (van der Lely, 1997), and their conversational skills are typically appropriate to context (Bishop & Adams, 1991). However, more recent investigations have highlighted delays in social cognitive understanding (Andrés-Roqueta, Adrian, Clemente, & Katsos, 2013), lower ratings of pragmatic language competence (Norbury, Nash, Baird, & Bishop, 2004), and deficits in pragmatic tasks that require analysis of linguistic context, for example, inferencing and ambiguity resolution (Norbury, 2005a, 2005b). In general, the pragmatic skills of children with SLI are reported to be commensurate with their overall level of linguistic competence (cf. Norbury et al., 2004). This highlights the importance of structural language skills in solving pragmatic language tasks and potentially in developing social pragmatic awareness. In addition, investigations into the pragmatic language skills of children with SLI may elucidate sources of pragmatic breakdown in other developmental populations such as autism spectrum disorder (ASD).

The current study aimed to examine reference skills in SLI using a novel and comprehensive paradigm probing production, comprehension, and metalinguistic abilities and to explore the potential origins of pragmatic deficit in reference by examining the relationship between our novel tasks and standardized language tests. Reference is a potentially fruitful arena in which to test the pragmatic skills of children with SLI because the pragmatic element of this task draws more on an understanding of the listener's knowledge state than on an appreciation of linguistic context. Therefore, reference taps a strength in pragmatic understanding as distinct from structural language abilities in this population. This study also extended the literature by testing pragmatic skills in non-English-speaking children with SLI.

Typical and atypical development of reference

Children typically develop adult-like abilities to spontaneously produce unambiguous referring expressions in simple contexts by approximately 6 years of age (Dickson, 1982; Girbau, 2001; Matthews, Lieven, & Tomasello, 2007). It has been suggested that their production of under-informative referring expressions prior to this age is due to a lack of awareness of other potential targets in the environment (Whitehurst, 1976) or because children do not realize that to refer means to implicitly describe differences that will eliminate potential ambiguity (Whitehurst & Sonnenschein,