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The use of sophisticated words with children with specific language impairment during shared book reading

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ABSTRACT

In the context of the use of sophisticated (i.e., low-frequency) words with children with specific language impairment (SLI), the present study investigates the relationship between maternal interactive support for meaning and both conversational responsiveness and lexical development of children with SLI. Fifteen Italian-speaking children with SLI (age range: 3;4–5;6) and two groups of typically developing children – 15 chronological age (CA)-matched (3;8–5;8) and 15 language age (LA)-matched (1;10–3;5) – were videotaped during shared book reading with their mothers. Maternal utterances which included or were related to a sophisticated word were coded on the basis of informativeness and scaffolding provided; child utterances were coded for complexity. In addition, child's lexical development was assessed three months later. Mothers of children with SLI produced a higher percentage of directly informative utterances with gestural scaffolding than did mothers of CA-matched children, and only in the SLI group this kind of utterances were significantly followed by child's extended utterances. Child's lexical development (production) was related to direct maternal informativeness in both the SLI- and CA-matched groups, and to gestural scaffolding only in the SLI group. On the whole, these findings suggest that mothers of children with SLI attune their language to their children's linguistic limitations and that the gestural quality of the interactive scaffolding is related to these children's conversational participation and their level of lexical progress.

Learning outcomes: The reader will recognize the importance of maternal support for the meaning of low-frequency words in promoting the child's conversational responsiveness and lexical development, particularly with children with SLI. These children seem to benefit when provided with direct information accompanied by gestural scaffolding. These findings, if replicated with a larger group of participants, could help clinicians develop improved strategies for teaching parents.

1. Introduction

In recent years, increasing attention has been paid to children with Specific Language Impairment (SLI), that is children with deficits in one or more area of language development (phonological, lexical-semantics, morpho-syntax, pragmatics)

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that is unexplained by their cognitive, neurological and sensory-motor development and where the socio-communicative context is adequate (see Leonard, 2014 for a review). Many studies have indicated a large variability in patterns of language acquisition in this population: children with SLI display deficits in one or more specific areas of language, especially phonology (e.g., Claessen & Leitao, 2012) and morphosyntax (e.g., Jones & Conti-Ramsden, 1997; Rice, Wexler, & Hershberger, 1998), while the presence of a lexical deficit remains unclear (Bishop, 1997; Storkel, 2011). For example, experimental studies on word learning by Gray and colleagues (Gray & Brinkley, 2011; Gray, Brinkley & Svetina, 2012; Gray, 2004, 2005) have found high variability among children with SLI and have shown that the word learning process is influenced in a similar way by phonotactic probability and object familiarity in both children with SLI and typically developing (TD) children (Gray & Brinkley, 2011; Gray et al., 2012). In addition, there was no difference between children with SLI and their TD peers in terms of the influence of the encoding cues (semantic or phonological), presented on their fast mapping and word learning performance (Gray & Brinkley, 2011). Studies on lexical categories did not find any difference between children with SLI and language-matched TD children on verb tokens or types, although children with SLI produced a lower number of different words compared with an age-matched control group of TD children (Leonard, Miller, & Gerber, 1999; Owen & Leonard, 2002; Stokes & Fletcher, 2000; Watkins, Kelly, Harbers, & Hollis, 1995). In contrast, other studies have indicated that these children need a higher degree of exposure to learn words (Ellis Weismer & Hesketh, 1998; Gray, 2003, 2004; Rice, Oetting, Marquis, Bode, & Pae, 1994) and use lower percentages of verb types and tokens (except for general all-purpose verbs) and higher percentages of noun types and tokens than a group of MLU-matched TD children (Conti-Ramsden & Jones, 1997). In addition, some experimental studies reported difficulties in comprehension and production of target words (Dollaghan, 1987; Rice, Buhr, & Nemeth, 1990; Rice, Buhr, & Oetting, 1992). Specifically, children with SLI are reported to have difficulty in learning the semantics of a new word (Alt & Plante, 2006; MacGregor & Appel, 2002; Mainela-Arnold, Evans, & Coady, 2010; Majorano, Benelli, Belacchi, & Gini, 2006; McGregor, Newman, Reilly, & Capone, 2002), to produce a higher number of phonological errors compared with age-matched and language-matched control groups (Aguilar-Mediavilla, Sanz-Torret, & Serra-Raventos, 2002; Lahey & Edwards, 1999; Majorano & Lavelli, 2014), and to be slower at recognizing and naming pictures (Bishop, 1997; Lahey & Edwards, 1996). Word finding difficulties (WFD), that is the inability to retrieve a word even with full knowledge of its meaning (Dockrell, Messer, George, & Wilson, 1998; German, 1989) has also been reported in children with SLI, both for single words and in discourse retrieval contexts (Brackenbury & Pye, 2005; Kail & Leonard, 1986; Kail, Hale, Leonard, & Nippold, 1984; Messer & Dockrell, 2006).

The factors that account for this great variability in lexical development are debated in the literature. On the one hand, it has been suggested that individual linguistic or general-domain aspects (e.g., linguistic representation, Rice & Wexler, 1996; processing capacity, Leonard, 2014; or phonological memory, Gathercole & Baddeley, 1990; Sheng & McGregor, 2010; see Marinis, 2011 for a review) account for the lower ability to acquire and use new words in children with SLI. On the other hand, from an interactionist perspective on language development (see Chapman, 2000 for a review), a bi-directional influence between individual factors and input characteristics represents the key not only to a better understanding of how children with SLI represent and use language, but also to investigating how the context could help to facilitate lexical acquisition. In this regard, research on TD children has indicated that one of the most important sources of individual differences in language acquisition is a child's exposure to language input in its different components (phonological, lexical, morfo-syntacts and pragmatic) (Chapman, 2000; Tomasello, 2006).

As reported by Hoff and Naigles (2002), two complementary approaches have investigated the role of input in language learning. The first has focused on the social-pragmatic aspects of the input (Akhtar & Tomasello, 2000; Baldwin, 2000; Bloom, 2000; Bruner, 1974/1975; Hoff-Ginsberg, 1987; Tamis-LeMonda, Bornstein, Baumwell, & Damast, 1996; Tomasello, 1990, 2000), and has indicated that child language development is influenced by a complex set of relationships among several variables (from the context, from the adult, and from the child) (Bornstein, Haynes & Painter, 1998; Chapman, 2000; Ninio & Snow, 1988). Specifically, several interactive settings such as shared book reading and routine games were showed to influence lexical acquisition (e.g., Duursma & Pan, 2011; Majorano, Rainieri & Corsano, 2013; Ninio, 1983; Raikes et al., 2006; Whitehurst & Lonigan, 2001). Many studies stressed that these interactions provide the young child with a predictable referential context that makes both the child's and the mother's language immediately meaningful (Tomasello & Farrar, 1986) and represent richer opportunities for verbal interaction than other settings such as dressing and mealtimes (Hoff-Ginsberg, 1991). According to this view, word learning is derived from the child's inference about the speaker's attentional focus and communicative intent during routine and jointly engaged conversations (Akhtar & Tomasello, 2000; Baldwin, 2000).

The second perspective – the so called "data providing view of input" (Hoff & Naigles, 2002, p. 422) – posits that children learn words by deriving information from the conversation as data, and shows evidence of the importance of the "nature" of input with its distinctive qualitative aspects in vocabulary development. Specifically, one line of research focused on the characteristics of maternal child-directed speech: for example, the number of isolated words (Brent & Siskind, 2001), the salience of the input due to the sentence position of verbal forms (Wijnen, Kempen, & Gillis, 2001) and prosodic characteristics (D'Odorico e Jacob, 2006; Ma, Golinkoff, Houston, & Hirsh-Pasek, 2011), and the occurrences of sophisticated lexical items (Beals, 1997; Weizman & Snow, 2001). In this regard, some studies supported the idea that preschoolers' vocabulary ability is associated with their exposure to low-frequency vocabulary during adult-child interactions and conversations (Beals & Tabors, 1995; Beals, 1997; Weizman & Snow, 2001). Specifically, Weizman & Snow (2001), using both structural and functional analysis of the input, found that the density with which low-frequency words (which the authors termed "sophisticated words") are produced during supportive interaction at age 5 are related with the children's vocabulary ability at kindergarten and 2nd grade. Similarly, Beals (1997) indicated that semantic support is the strategy