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Children's comprehension skill and the understanding of nominal metaphors

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ABSTRACT

According to Levorato and Cacciari's global elaboration model, understanding figurative language is explained by the same processes and background knowledge that are required for literal language. In this study, we investigated the relation between children's comprehension skill and the ability to understand referential nominal metaphors. Two groups of poor versus good comprehenders (8- to 10-year-olds) matched for word reading and vocabulary skills were invited to identify the referent of nouns used metaphorically or literally in short texts. Compared with good comprehenders, performance of poor comprehenders showed a substantial decrease in the metaphoric condition. Moreover, their performance was strongly affected by the degree of semantic incongruence between the terms of the nominal metaphor. These findings are discussed in relation to several factors, in particular the ability to use contextual information and semantic processing.

Introduction

The spectator at a wonderful dance performance who enthuses "This dancer is a butterfly!" is using a nominal metaphor. In this kind of figurative device, the speaker refers to a target noun, the *topic*,

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with another noun, the *vehicle*. The two nouns belong to different conceptual domains but share some similarities called the *ground*. Metaphor understanding, thus, requires the listener to draw an inference that builds a connection between the two domains through these shared features (Ortony, 1979). When saying "This dancer is a butterfly," one property of a butterfly (the vehicle term), that of fluttering gracefully, is attributed to the dancer (the topic term), and the metaphoric interpretation (the dancer moves gracefully as a butterfly does) is derived.

Metaphors are often used in oral and written language. Adults usually understand them with no difficulty. Several theories of metaphor understanding have been proposed to answer the question of how language users make sense of these sentences without experiencing semantic anomaly (e.g., Glucksberg & Keysar, 1990; Ortony, 1979). A great deal is also known about the development of metaphoric understanding. Research has consistently noted that the ability to understand metaphors increases steadily with age (Billow, 1975; Cicone, Gardner, & Winner, 1981; Nippold, Leonard, & Kail, 1984; Pollio & Pollio, 1979; Winner, Engel, & Gardner, 1980; Winner, Rosenstiel, & Gardner, 1976). However, the ages at which children exhibit some proficiency in metaphor understanding and the developmental path of this ability until adulthood vary greatly as a function of the nature of metaphor and the type of experimental task. At as young as 4 years, children seem to comprehend a metaphor if it is based on obvious perceptual features and if the task does not rely heavily on metalinguistic abilities (Dent & Rosenberg, 1990; Vosniadou & Ortony, 1983; Vosniadou, Ortony, Reynolds, & Wilson, 1984). As children grow older, metaphors based on conceptual features are understood even when using a verbal explanation task (Winner et al., 1976) and the tendency to interpret metaphor literally decreases with age (Evans & Gamble, 1988).

The picture of development of metaphor understanding is rather complex, with several factors seeming to play a role. Understanding metaphorical language necessitates certain degrees of proficiency in both cognition and language and also relies on several component abilities such as processing capacity, metalinguistic skill, an understanding of communicative pragmatics, and semantic knowledge (Vosniadou, 1987a, 1987b). Several theoretical frameworks have been proposed. Following Piaget's (1964, 1978) works, the development of metaphor understanding has been directly related to the development of general cognitive processes, more specifically those involved in classification abilities. Another theoretical view stressed the development of knowledge (Gentner, 1988; Winner et al., 1976, 1980).

Contemporary views explain the development of metaphor understanding by the development of a combination of abilities related to cognitive functioning and amount of knowledge. Thus, there is no need to hypothesize a specific figurative ability that would gradually emerge during the course of development. This idea is at the core of the global elaboration hypothesis proposed by Levorato (1993) and Levorato & Cacciari (1992, 1995). These authors provide a general model of the development of figurative language that describes the mechanisms at work in acquiring various forms of figurative language, including idioms, proverbs, and metaphors. According to the global elaboration hypothesis, figurative language acquisition is explained by the same processes and background knowledge as those required for literal language. According to Levorato and Cacciari (1995), "In order to comprehend and produce figurative language, no special procedure or source of knowledge must be presupposed" (p. 262). Literal and figurative interpretations are both related to the same fundamental ability that makes it possible to go beyond local piece-by-piece processing of a text in order to build a global coherent representation. This ability seems to be acquired gradually in line with the development of a coordinated set of cognitive abilities, in particular the ability to use contextual information and the awareness that a statement can have a meaning different from that of the words used.

Although this model is supposed to give a general account of the acquisition of diverse figurative devices, it has been applied mostly to idiom understanding (Levorato & Cacciari, 1995). Several findings corroborate the general predictions derived from this model, in particular the result showing that children's comprehension of idioms is improved when idiomatic expressions are embedded in informative contexts (Gibbs, 1987; Gibbs, 1991; Levorato & Cacciari, 1992, 1995). The authors proposed a list of the most relevant comprehension skills that are needed by a child in order to derive a figurative interpretation of an idiomatic expression (Levorato & Cacciari, 1995; Levorato, Nesi, & Cacciari, 2004): the ability to go beyond word level by exploiting information given by the context in order to construct a coherent semantic representation, the ability to monitor one's unfolding comprehension