Bilingualism and conversational understanding in young children

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\textbf{A B S T R A C T}

The purpose of the two experiments reported here was to investigate whether bilingualism confers an advantage on children's conversational understanding. A total of 163 children aged 3–6 years were given a Conversational Violations Test to determine their ability to identify responses to questions as violations of Gricean maxims of conversation (to be informative and avoid redundancy, speak the truth, and be relevant and polite). Though comparatively delayed in their L2 vocabulary, children who were bilingual in Italian and Slovenian (with Slovenian as the dominant language) generally outperformed those who were either monolingual in Italian or Slovenian. We suggest that bilingualism can be accompanied by an enhanced ability to appreciate effective communicative responses.

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\texttt{1. Introduction}

One of the most central and enduring issues in cognitive science concerns the impact of access to language on cognitive development (Bloom & Keil, 2001; Carruthers, 2002; Siegal, 2008; Siegal & Surian, 2004, 2007). Children are exposed to a wide range of language environments. Some children such as deaf children with hearing parents may not be exposed to language until they enter into contact with users of a sign language. By contrast, bilingual children – the focus of the investigation reported here – are exposed early to more than one spoken language. Such children often may have one parent who is English- or Italian-speaking and the other who is a speaker of a different language, or they may be children of parents who have migrated to a country in which a language other than their own is spoken, or they simply may be exposed to a multilingual culture as is the case, for example, in Switzerland or Slovenia.

The importance of childhood bilingualism is underscored in the context of globalization. For example, throughout the European Union, about 10% of the school age population have a language different than that of the majority of the country in which they live, and projections are that in the EU as a whole about one-third of the urban population under 35 will soon consist of ethnic minorities with a language background different than that of the majority (Extra & Yagmur, 2004; Romaine, 2004). Nevertheless, the effects of the timing and nature of very early bilingual language input on children's cognitive development are not well understood. Previous work (e.g., Bialystok, 2001; Bialystok & Martin, 2004; Bialystok & Senman, 2004; Cromdal, 1999) has shown that bilingualism has a positive effect on children's ability to judge grammar, to substitute symbols, and to 'inhibit' a prepotent response in executive functioning tasks requiring the ability to distinguish between reality and the phenomenal world of appearances. This capacity for flexibility in the representation of language and objects suggests that early bilingualism should be accompanied by advanced meta-pragmatic skills. However, little is known about the extent to which bilingualism influences performance on measures of conversational understanding – a process that is often key to cognitive development and learning (Siegal & Surian, 2004, 2007). In the present research, we aimed to address the question of whether bilingualism

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confers an advantage in terms of children's understanding and appreciation of messages as intended by speakers in conversation.

In depicting communication as a cooperative exchange, Grice (1975, 1989) proposed that appreciation of certain conversational rules or maxims provide the foundation for pragmatic competence. These maxims enjoin speakers to say no more or no less than is required for the purpose of the (talk) exchange (maxims of quantity), 'tell the truth and avoid statements for which there is insufficient evidence (maxims of quality), 'be relevant (maxim of relation)', and 'avoid ambiguity, confusion and obscurity (maxims of manner). To characterize the nature of effective communication more fully, Grice also discussed the need to invoke other maxims such as 'be polite' (maxim of politeness).

An earlier study involved children aged 4–6 years who were either monolingual in English or Japanese or bilingual in the two languages (Siegal, Matsuou, & Pond, 2007). The aim was to examine whether bilingualism influences children's ability to draw 'scalar implicatures' that arise when a speaker uses a weak member of a scale (e.g., some, or, might) to imply that the stronger term of the scale (all, and, must) does not hold (Guasti et al., 2005; Papafragou & Musolino, 2003). For example, the utterance: (1) some of the dwarfs loved Snow White implies and (2) not every dwarf loved Snow White. In keeping with the Grice's maxims of Quantity to say no more or no less than is required for effective communication, listeners' understanding of such implicatures is based on the pragmatic knowledge that some means not all despite the logical compatibility between some and all. Therefore it would not be communicatively effective for a speaker to state that "Some – and in fact all – of the dwarfs loved Snow White" since all cancels out some; if the speaker meant that the stronger term all applied, then he or she should have used it from the start instead of the weaker one some. As a test of this understanding using scalar implicatures common to both English and Japanese, children heard a puppet refer to actions such as that of a teddy bear who put all the hoops available on a pole as having put "Some of the hoops on the pole." They were asked to say whether the puppet could have described the action better. Although having lower vocabulary comprehension scores, the bilingual children significantly outperformed their monolingual counterparts in showing sensitivity to scalar implicatures by identifying pragmatically inappropriate uses of the term some.

In the present investigation, we sought to determine whether bilingual children excel more generally in their sensitivity to conversational maxims compared to their monolingual counterparts. Experiment 1 involved a comparison of children who were monolingual in Italian with children who were bilingual in Slovenian and Italian. The children were given a Conversational Violations Test (CVT) that aimed to determine the extent to which they can determine whether a maxim for conversation in the Gricean framework has been violated. Based on previous findings concerning scalar implicatures, our hypothesis was that the bilingual children would outperform the monolingual group.

2. Experiment 1

2.1. Method

2.1.1. Participants

These were 41 children ranging in age from 4 years, 7 months to 6 years, 3 months who were divided into two language groups: 19 Italian monolinguals (M = 5 years, 4 months, SD = 7.3 months) and 22 Slovenian–Italian bilinguals (M = 5 years, 6 months, SD = 7.8 months). The Italian monolinguals lived in Trieste, northeastern Italy, whereas the Slovenian–Italian bilinguals were recruited from Kop- er, Izola, and other towns in the Istria region of Slovenia bordering northeastern Italy. The bilinguals attended preschools that provide instruction in Italian only. Most were children with Slovenian-speaking parents who enrolled their children in Italian language preschools in order to facilitate the children's participation to further education in Italian available in the greater Trieste area and in future employment in Slovenia that would involve interaction with Italian speakers. They had acquired their knowledge of Italian (L2) mainly from interactions at preschool and from exposure to television. All children tested in the three language groups attended preschools in working class areas, and were from working class backgrounds in which few parents had any education beyond high school.

2.1.2. Procedure

All children were tested individually in Italian in a quiet area of their school on a Conversational Violations Test that was based on measures used earlier in research on children with autism and adults with right hemisphere lesions (Surian, Baron-Cohen, & van der Lely, 1996; Surian & Siegal, 2001; see also Siegal, 2008). The CVT involves the detection of utterances that violate Gricean conversational maxims. Using a laptop, children were shown a DVD in which 25 short conversational exchanges were staged by three doll speakers, one male and two female. For each episode, one of the two female speakers asked a question to the other two speakers who each gave a short answer. One answer violated a conversational maxim and the other did not. The children were asked to "point to the doll that said something silly or rude." The utterances violated the first or the second maxim of Quantity, the maxim of Quality, the maxim of Relation and the maxim of Politeness. There were five utterances for each of these five component maxims of the CVT.

For items that represented the First Maxim of Quantity (Quantity I), the target utterances were designed to fall short of providing an informative enough answer, as in the following:

Question: "What did you get for your birthday?"
Answer: "A present." (Alternative appropriate answer: "A bicycle."

For items that represented the Second Maxim of Quantity (Quantity II), the utterances provided redundant information, thus demanding the expenditure of extra
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