THE EFFECTS OF UPDATING AND PROFICIENCY ON OVERSPECIFICATION IN AMERICAN-GREEK CHILDREN

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ABSTRACT

The present study aims to understand which factors contribute to the production of overspecified forms in American-Greek children. The children were between the ages of 8 and 12, with Chicago as their area of residence. All attended monolingual English schools and received support in their heritage language only during the weekends. Previous studies on bilingual children have shown that overspecification is either driven from a crosslinguistic effect or from lower vocabulary skills in the non-dominant language. In addition, the impact of cognitive abilities (i.e. working memory) on overspecification have been verified in some recent studies. The present study analyses reference use in Greek in the context of a narrative elicitation task, while at the same time a number of screening tasks were taken into account such as home language history and current language use via questionnaires, proficiency and updating skills. The results revealed that weak updating skills were the most significant predictor of the production of overinformative forms. The study aims to shed new light on the phenomenon of overspecification in bilingual children's production and to shift the emphasis to the non linguistic factors (such as executive functions).

Keywords: Bilingualism, overspecification, updating skills.

INTRODUCTION

A question that often arises is how bilinguals develop their referential strategies. In the process of speech production, interlocutors make decisions upon appropriate ways for referring to referents, whom they intent to talk about. Referring expressions exist across all languages and reflect the speakers' informational choices in different levels of explicitness, towards efficient communication, more precisely, they mark the discourse status and the level of activation of each referent in order to make them more easily identifiable (Ariel, 1990). As mentioned before, the operation of reference includes the functions of introduction of new characters (usually with the use of full DPs), maintenance (overt pronouns, clitics, nulls) and re-introduction (full DPs, proper names) of the referents in discourse. Speakers' strategic modeling of referential use involve the intention of optimal communication with the use of the most economic expression (Baumann, Clark & Kaufmann, 2014). However, it is often the case that speakers lean towards avoiding pragmatic inference and they tend to prefer the strategy of overspecification in order to avoid ambiguity (Koolen et al., 2011).

Overspecification refers to the production of unnecessarily over-informative referring expressions in contexts, where the target referent is highly activated. Koolen et al. (2011) examined the production of definite target descriptions in order to identify the reasoning behind overspecified referential choices. Their method was based on the TUNA corpus (Gatt et al., 2007), where their participants were provided with visual stimuli and were required to make choices for referring to a series of objects displayed on a screen. Their findings demonstrate a clear tendency towards overspecification.

Recent studies have linked the production of referring expressions to working memory abilities (Andreou, in press). No studies however have focused only on the phenomenon of overspecification in relation to updating skills.

LITERATURE REVIEW

The production of overspecified referring expressions can be detected in the use of full DPs or overt pronominal subjects as discord of non-topic-shift contexts. Several studies, especially many that are dealing with bilingual children or adults, claim that overspecification is a language-specific phenomenon. Several studies have shown that overspecification can be attributed to cross-linguistic influence supported by the interface and ambiguity hypothesis in bilingual children. More particularly, language internal factors encourage the transfer from a language with a less ambiguous syntactic system (such as English) to a language with more ambiguous structures (such as Japanese or Greek, that allow for null subject structures). However, there should be a distinction between null and non-null languages in terms of determining an overt pronoun as a form of overspecification. For instance, in languages that allow for null pronouns (such as Italian or Greek) the use of an overt pronoun in contexts where a null would be considered more appropriate is an overspecified referential choice. On the other hand, in non-null languages (such as English), overt pronouns are in many cases the only referential choice, therefore they cannot be considered as overspecification. Mishina-Mori et al. (2018) tested bilingual children, 8-12 years of age, to examine the extend to which cross linguistic transfer appears among languages with very different morphosyntactic structures. The results demonstrate that the participants extended the use of overt pronouns in subject position in their non dominant language (Japanese), which is a pro-drop language, producing overspecified statements. These findings also support the influence of language dominance in the process of choosing referring expressions in bilinguals.

Similar results presents the study of Serratrice et al. (2004), which examined the distribution of overt and null subjects of English-Italian bilingual children with regards to the condition of cross-linguistic influence. It is important to mention that both Italian and Spanish are languages that allow subject omission and present significant morpho-syntactic similarities. The result showed preference towards overt pronominal subjects in the non-dominant language, even in contextual environments, where a null subject would have been considered a more appropriate choice.

A more recent study is that of Chen and Lei (2018), who tested 30 monolingual Chinese-speaking children from Beijing, China (mean age 9;1 years), 30 monolingual American English-speaking children from around the greater Atlanta area (mean age 9;5 years), and 30 Chinese–English bilingual children who were born and raised in the USA (mean age 9;3 years) in narrative production. Chinese and English are two languages with great typological variation, namely English does not allow for null pronouns in subject or object position, whereas Chinese is a pro-drop language, therefore the omission of pronominal subjects and objects is allowed. The results reveal the differences between monolingual and bilingual children in their referring expression strategies in discourse. More in particular, bilingual children chose more definite NPs in English when re-introducing a character than the monolinguals and fewer nulls, whereas both monolinguals and bilinguals performed similarly in the maintenance of a story character. In this case we see a tendency for overspecification in the function of re-introduction in Chinese. Monolingual Chinese children used many more null pronouns, whereas in the case of bilingual children there has been observed a cross-linguistic influence of English on Chinese, with the participants producing many more definite NPs.

When considering bilingual reference production, the impact of dominance should also be taken into account. Language dominance accounts for the level of proficiency the bilinguals have in their spoken languages, which can be measured in terms of current language use, prior language exposure, expressive vocabulary, literacy etc. There are many studies that show that overspecification is related to dominance. For instance, Argyri and Sorace (2007) examined the referential performance of Greek-English bilingual children, who live either in Greece or in the UK. The findings of the study reveal that, in the context of reference maintenance, 8-year-old participants living in the UK showed the tendency to produce and accept more overt subject pronouns than the children living in Greece. Similarly, Andreou et al. (2015) tested Greek-German bilingual children (8-12 years of age) living in Germany and Greece, in terms of their referential production strategy. Their results demonstrate variances in the production of referring expressions between bilingual and monolingual children with respect to language dominance, that is determined by the higher level of exposure to one of the two spoken languages. A comparable effect can be seen in bilingual adolescents. The study of Torregrossa and Bongartz (2018) demonstrates that language dominance has an impact on the referential strategy of their German-Italian bilingual participants. The dominance in German positively correlated with the production of overspecified forms in Italian. Overall it seems that overspecification in production occurs as a strategy for avoiding ambiguity (Engelhardt et al., 2011).

As mentioned in the introduction recent work appears to involve also non-linguistic factors (such as working memory) in the production of referring expressions. However, the relationship between overspecified forms and updating skills is still unknown today and this study aims to address this gap.

METHODOLOGY

Participants of this study were 25 American-Greek children (mean age: 9;0 *SD* = 0.92 age range: 7;3-10;11), who were recruited from a Greek school outside the educational context (weekend school) in Chicago. The main language of instruction of all children is the English language and they attend classes in their heritage tongue (i.e. Greek) for 6 hours every weekend.

Material

In order to determine language dominance among the bilingual participants (either in Greek or in English), demographic and parental questionnaires were administered as a tool for collecting information regarding the language history and literacy practices of the participants. The questions included in the questionnaires referred to the following two categories: (a) Home language history, which accounts for the exposure the child had to each language from birth up to the age of schooling and (b) Current language use, which deals with issues of language preference in every-day life. The latter category facilitates the collection of information regarding language production during oral interactions with peers or family members, as well as language comprehension that includes daily activities such as watching TV/movies.
Participants' vocabulary abilities were assessed based on the *Expressive Vocabulary Test* (Renfrew 1997).

The narrative oral retelling task was used to assess the participants' referential choices in discourse only in Greek. The tool used for the specific task was the ENNI assessment tool, an instrument that targets children aged from 4 years and aims at exploring participants' language production skills. The instrument consists of short stories presented in pictures, containing 2-4 characters. The procedure of the experiment was as follows: Looking at a computer screen, the

children were presented with three coloured digital envelopes and they were asked to select one of them. After the end of the story, the participants were asked to retell the story they heard to a person unfamiliar with the content of the instrument (for more details see Andreou, 2015). For the present analysis and in order to detect the pattern of overspecification in the production of referring expressions of our participants, what was taken into account were only the cases where consecutive DPs were produced for the same character, without any intervening character in-between, and where the topic continuity was preserved, namely the referents were consecutively in subject or object position without alternation (see example [1]).

[1]   O kamilopardalis pire to aeroplanaki, alla o kamilopardalis to erikse katalathos stin pisina.
The giraffe boy.NOM.MASC.SG. took the aeroplane, but the giraffe boy.NOM.MASC.SG. threw it accidentally in the swimming pool.

Finally, a verbal N-back task was used to tap children's updating abilities. For this task children were presented with a series of letters, one at a time. Children were asked to judge whether each stimuli matched the one presented *2* items previously. If the current digit was identical to the one presented 2 steps back, the participants would need to press "Ξ" on the keyboard. There was a practice block, followed by a test block of 60 stimuli.

RESULTS

The results with respect to home language history have shown that our American-Greek children had more exposure to English (58.2%) compared to Greek (t(25)= 1.221, p= 0.042). This result strengthened in the current language use category in which the exposure to English was (85.6%) (t(25)= 4.222, p< 0.001).

In the Expressive Vocabulary Task the mean score of correct responses for the children in Greek was 32.8 (*SD* = 4.8) and in English 75.8 (*SD* = 2.5). One-way ANOVA analysis with Language (English and Greek) as the between-subjects factor was run on the children's expressive vocabulary scores. The result revealed that bilinguals' performance was better in the English language suggesting that our children are dominant in English (F (1, 24) = 4.932, p =.001).

Table 1 presents the average number related to the occurrence of overspecified forms (i.e. DPs) in topic continuity contexts of Greek narrations as well as the mean score of the updating task.
Table 1: Participants' raw means score and *SDs*.

Group	Greek narrations	Updating task
American-Greek (*N* =25)	3.55 (*0.52*)	52.7 (10.2)

In order to investigate, whether language or executive functions abilities are responsible for the production of overspecified forms in Greek, we ran correlations between the average score of overspecified forms in production and the rest of our screening tasks. The results suggested that the production of overspecified forms in Greek correlates negatively with English vocabulary (r=-0.225, p=0.011) and updating skills (r=- 0.525, p=0.001). These variables were entered in a stepwise regression analysis, where results have exhibited that updating skills and

English vocabulary predict 55.1% of overspecified forms (R^2=0.551, F(1,24)=-5.331, p=0.001; β^1=0.442, p^1=0.002; β^2=0.113, p^2=0.020, respectively).

DISCUSSION

Up to date overspecification in bilingual children has been attempted to be explained based on many different reasons. One is that of dominance, since there are several recent studies that show that bilingual children tend to overspecify in their non-dominant language (Torregrossa et al. submitted; Torregrossa & Bongartz, 2018). In particular, the authors claimed that there is a lack of automaticity of the syntactic options for reference available in bilingual children's non-dominant language and this is the reason why they were relying on discourse-pragmatic strategies (DPs).

Other studies concluded that overspecification is something that is related to bilingual children's language abilities, which comes in contrast to our findings. In particular, it was mentioned that the production of ovespecified types of reference has been attributed either to not adequate proficiency of definiteness marking (Serratrice & De Cat 2018), to limited speed of lexical retrieval (Torregrossa et al., 2008), or to an L2-strategy (Lozano 2016; Ryan 2015; Torregrossa & Bongartz 2018).

Another way of explaining the production of overspecific forms was that of the crosslinguistic effect. More precisely, in language pairs, where one of the languages allows for null-subjects (pro-drop languages) or clitics and the other doesn't, cases of overspecification in the use of referring expressions in the null-subject/clitic language have being observed (Serratrice, Sorace & Paoli 2004; Tsimpli et al. 2004).

The main and most important finding of the present study indicates that the production of overspecified forms is mainly affected by updating skills and vocabulary abilities in the dominant language.

In particular, the results revealed a negative correlation between children's production of overspecified forms and scores in the updating task. In other words, our study revealed that overspecification may result from limited Executive Function abilities. As suggested by research in production and acceptability of referring expression (Koolen et al., 2011), individual variability regarding selection of referring expressions is always expected.

CONCLUSIONS

The current study provided insights into factors, such as home and current language use, vocabulary and updating skills that affect the production of overspecified forms in American-Greek bilingual children aged 8 to 12 years old. From the findings of the present study, it was observed that weak updating skills more than vocabulary knowledge in the dominant language contributed to our children's production of overspecified forms. This brings to the surface the need for more studies that will put emphasis on the role of executive functions in the production and comprehension of referring expressions.

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