

PINNING DOWN THE ROLE OF TYPE OF BILINGUALISM IN THE DEVELOPMENT OF REFERENTIAL STRATEGIES

Jacopo Torregrossa¹, Maria Andreou², Christiane Bongartz² and Ianthi Maria Tsimpli³

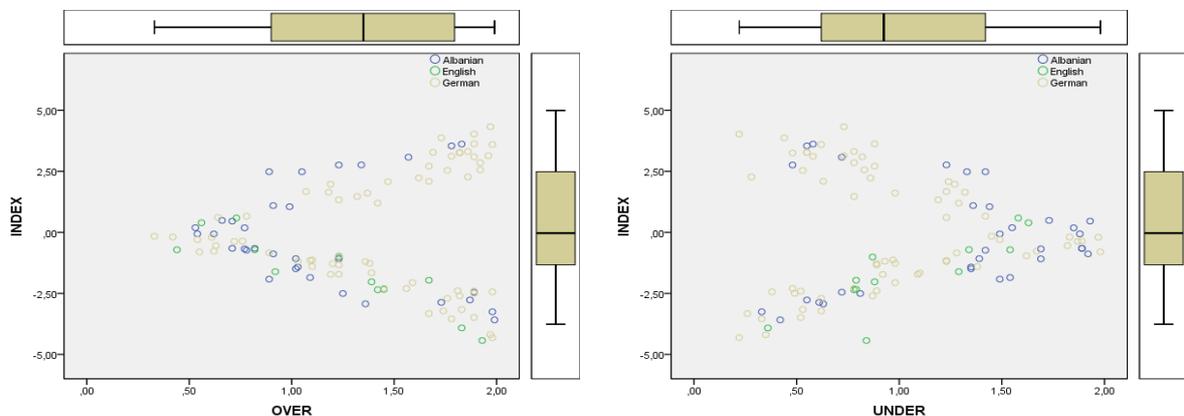
¹University of Hamburg, ²University of Cologne, ³University of Cambridge

INTRODUCTION. The production of referential expressions (REs) in discourse has often been used as an assessment tool for language proficiency in bilinguals, L2 learners and attrited speakers (e.g., Gagarina et al. 2015; Sorace & Filiaci 2006 and Montrul 2008). Although the literature is consistent in showing that bilinguals adopt different referential strategies than monolinguals, there is no agreement on the direction of this difference. Some studies argue for an overspecific use of REs (e.g., overt pronouns/definite nouns vs. null subjects/clitics; Serratrice 2007), some for an underspecific use (i.e., pronouns vs. definite nouns, Torregrossa & Bongartz 2016) and others report mixed patterns (Montrul 2004). For this divergent pattern of use, several accounts have been proposed, including cross-linguistic influences (Belletti et al. 2007), language proficiency (Andreou et al. 2015) and processing constraints (Torregrossa et al. in preparation). However, some of these studies are difficult to compare, since they rely on different methodologies and language combinations, and do not always profile children for measures such as type of bilingualism, language experience or dominance. The aim of this paper is to assess the acquisition of reference strategies by heritage children based on a large, homogeneous dataset and to interpret the production of over- and under-specific forms in light of the children's experience with their heritage language.

METHODOLOGY. I. *Participants and procedure.* We examined the production of REs in the context of a story-retelling task. Narratives were elicited using picture stories from the Edmonton Narrative Norms Instrument (Schneider et al. 2005). 180 heritage children (40 Greek-Albanian in Albania, 110 Greek-German in Germany and 30 English-Greek in the USA or UK) ranging in age from 8 to 12 years took part in the study. Each child was asked to retell one story in Greek and one in the other language and was administered a questionnaire targeting, for each language, different modules: home language history, early literacy preparedness, current literacy, current language use and amount of literacy exposure. Finally, we tested the children for language proficiency using vocabulary tests normed for Greek and the other languages. II. *Analysis of the questionnaires.* For each child, we obtained a score for language experience and dominance, the bilingual index score (BIS). After calculating – for each module in the questionnaire – the difference between the normalized scores in the two languages, BIS was derived as the weighted sum of these difference values. The weights were the β -values of a linear regression model with difference between the two vocabulary scores as dependent variable and difference between the scores in the two languages for each module as independent variables. In other terms, the weights indicate the extent to which the difference in language experience in each module is a predictor of the difference in language proficiency. The regression analysis indicates that the most relevant factor is amount of literacy exposure (weight: 2.52), followed by home language history (2.20), current language use (0.89), early literacy (0.34) and current literacy (0.15). III. *Analysis of the narratives.* We focused on the Greek narratives. Unit of analysis was the clause defined by the occurrence of a verb. We coded each RE (null pronoun, strong pronoun, clitic, full noun - DEFDP) for factors affecting the accessibility of the associated referent (Arnold 2010), i.e., grammatical role of the antecedent (subject vs. object) and number of characters either of the same or of different gender intervening between the RE and its antecedent. We identified referential configurations indicating an overspecific use of REs (e.g., a DEFDP in subject position when the antecedent is a subject and there is no intervening character) and an underspecific use of REs (e.g., use of

a null when the antecedent is an object, with or without intervening characters). For each child narrative, we then calculated the occurrence of overspecific (OVER) and underspecific (UNDER) REs (normalized for the root square of the total occurrence of REs). Finally, we performed a linear regression between the children's BIS and OVER and UNDER, respectively.

RESULTS. In Figures 1 and 2, a positive value on the y-axis indicates dominance of language experience in Greek and a negative value dominance of experience in the other language. The closer the value to 0, the more balanced the language experience. We observe a positive regression between positive BIS and OVER (upper part in Figure 1; $r^2=.69$; $p<.001$) and a negative regression between negative BIS and OVER (lower part in Figure 1; $r^2=-.76$; $p<.001$): heritage children with an unbalanced language experience tend to overspecify, especially if they are dominant in the non-target language. Figure 2 reveals the opposite pattern: there is a positive regression between negative BIS and UNDER (lower part; $r^2=.77$; $p<.001$) and a negative regression between positive BIS and UNDER (upper part; $r^2=-.60$; $p<.001$). In other terms, underspecification is more frequent in association with a balanced language experience.



DISCUSSION. Our analysis accounts for over- and under-specification as two different aspects of reference production by heritage children: While overspecification is an effect of unbalanced language experience, underspecification is associated with balanced exposure. Crucially, over- and underspecification show up independently of the language pairs involved. If they were the result of cross-linguistic influence of one referential system on the other, we would have had different results for Greek-German and Greek-English on the one hand (English and German are non-pro-drop and non-clitic languages) and Greek-Albanian on the other (Albanian is pro-drop and has clitics). Overspecification has emerged as a phenomenon also in L2-learning and may be due to cognitive load (i.e., inhibition of the L1), coupled with incomplete mastery of the syntax of Greek REs. Furthermore, overspecification emerges as an across-the-board strategy used by heritage speakers with unbalanced experience in both their languages, since overspecific reference characterizes the production of the Greek-dominant group, too. This may be due to the influence of the L2 on the L1 (Pavlenko 2003). The heritage group with a balanced exposure exhibits a full mastery of the syntax of REs in Greek. For this group of children, we propose that underspecification emerges as a “default” referential strategy, given that in Greek pronouns/clitics are associated with a greater range of uses than definite nouns (Tsimpli et al. 2004). The results suggest that this group of children relies on grammatical options to a greater extent than unbalanced children, who are guided more by pragmatics. On conclusion, the analysis of reference production functions as a litmus test for language proficiency and provides significant cues to the type of heritage language experience.

Selected references. Andreou, M., Knopp, E., Bongartz, C., Tsimpli, I. 2015. Character reference in Greek-German bilingual children's narratives. *EUROSLA Yearbook 2015*: 1-40. Arnold, J. 2010. How speakers refer: The role of accessibility. *Language and Linguistic Compass* 4(4): 187-203. Belletti, A., Bennati, E. and Sorace, A. 2007. Theoretical and developmental issues in the syntax of subjects: Evidence from near-native Italian. *Natural Language and Linguistic Theory* 25: 657-689. Gagarina, N. et al. 2015. Assessment of narrative abilities in bilingual children. In Armon Lotem, S. et al. (eds.), *Assessing Multilingual Children*: 243-269. Bristol: Multilingual Matters. Montrul, S. 2004. Subject and object expressions in Spanish heritage speakers. A case of morpho-syntactic convergence. *Bilingualism: Language and Cognition* 7(2): 125-142. Montrul, S. 2008. *Incomplete acquisition in bilingualism: Re-examining the age factor*. Amsterdam: Benjamins. Pavlenko, A. 2003. "I feel clumsy speaking Russian": L2 influence on L1 in narratives of Russian L2 users of English. In Cook V. (ed.), *Effects of second language on the first*: 32-61. Clevedon: Multilingual Matters. Sorace, A. and Filiaci, F. 2006. Anaphora resolution in near-native speakers of Italian. *Second Language Research* 22(3): 339-368. Serratrice, L. 2007. Referential cohesion in the narratives of bilingual English-Italian children and monolingual peers. *Journal of Pragmatics* 39(6): 1058-1087. Torregrossa, J. and Bongartz, C., 2016. Activation of referents in the bilingual mind, In: Fotiadou, G. and Tsimpli I. (eds.), *Individual differences in anaphora resolution: Language and cognitive effects*, Amsterdam: John Benjamins. Torregrossa, J. and Bongartz, C. in preparation. Bilingual reference production: A cognitive-computational account. Tsimpli, I., Sorace, A., Heycock, C. and Filiaci, F. 2004. First language attrition and syntactic subjects: A study of Greek and Italian near-native speakers of English. *International Journal of Bilingualism* 8: 257-277.