

Bilinguals' referential choice in cognitively demanding situations

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Appropriate references are a prerequisite for successful communication, but monolinguals and bilinguals differ in their choice of referential expressions. Native English speakers use attenuated forms (e.g., pronouns) when the referent is the topic of conversation. They use instead more explicit forms (full noun phrases) when introducing new entities in the discourse or making reference to an entity that has not been mentioned recently (e.g., Arnold & Griffin, 2007). However, even unbalanced but highly-proficient bilinguals may over-use pronominal forms in a non-null subject second language (L2) such as English (Contemori & Dussias, 2016) or Italian (e.g., Belletti, Bennati, & Sorace, 2007). Such residual indeterminacy in L2 referential choice could be due to an increased need for cognitive resources when computing interface structures between syntax and pragmatics such as referential expressions (the Interface Hypothesis, e.g., Sorace, 2011). Such structures are less likely to be successfully used by bilinguals relative to structures without this interface because speaking an L2 is cognitively costly and even speaking one's first language (L1) requires cognitive resources to prevent interference from the non-target language.

The present research tests the ability of the Interface Hypothesis to explain bilingual referential choice by examining the production of pronouns and noun phrases in unbalanced Spanish-English bilinguals in common and privileged ground (i.e., when the preceding discourse is shared by speaker and listener or only known to the speaker, Fukumura & vanGompel, 2012). The privileged ground condition is potentially more cognitively effortful, because the speaker has to consider the addressee's discourse model and choose a more explicit referring expression (i.e., a noun phrase). According to the Interface Hypothesis, in privileged ground bilinguals in their L2 may be more likely to differ from monolinguals by producing fewer noun phrases, relative to common ground.

Twenty-one English monolinguals and 44 Spanish-English bilinguals (L2 proficiency: advanced=21; High proficiency=23) participated in a story-telling task in English (bilinguals' L2), in which they saw two pictures of a male and a female character performing different actions (Figure 1). Participants heard a two-sentence description of the first picture, and then produced descriptions of the second picture to a confederate. The second picture cued references to the character that was salient (e.g., *the boy*) or non-salient (e.g., *the girl*) in the preceding discourse. Importantly, the second context sentence (e.g., *The boy got really annoyed*) was either presented to both participant and confederate (common ground condition) or only to the participant (privileged ground condition).

Participants produced more noun phrases in the privileged ground than in the common ground condition ($\beta=-0.4$, $SD=0.1$, $t=-2.313$, $p<0.02$), and monolinguals produced more noun phrases than low-proficiency ($\beta=0.20$, $SD=0.09$, $t=2.172$, $p<0.03$) and high-proficiency bilinguals ($\beta=0.19$, $SD=0.09$, $t=2.138$, $p<0.03$). However, the difference between bilinguals and monolinguals was similar in the common and privileged-ground conditions (no interaction between group and condition, $\beta=0.08$, $SD=0.1$, $t=-0.515$, $p=0.6$).

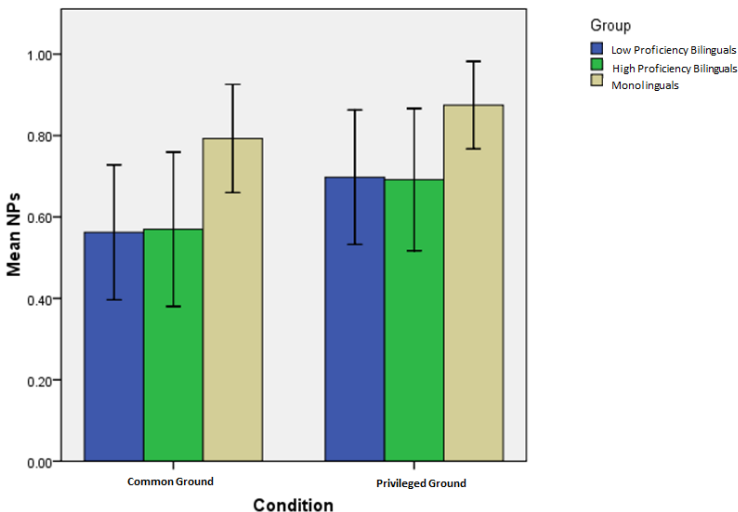
These results reveal that both monolinguals and bilinguals are sensitive to the demands of privileged ground, and tend to be more explicit in their choice of referring expressions when the information is not shared with the addressee. Also, as in prior studies, bilinguals tended to use fewer explicit references (noun phrases) than monolinguals, possibly because of a difficulty to evaluate discourse salience which resulted in the use of expressions more economical for the speaker (e.g., Contemori & Dussias, 2016). However, the difference in referential use between bilinguals and monolinguals was similar in common and privileged ground, inconsistent with the Interface Hypothesis. In a currently on-going experiment, we put the Interface Hypothesis to another test, in a picture-description task under verbal and non-verbal cognitive load. A greater

difference in referential use between bilinguals and monolinguals under load would support the Interface Hypothesis.

Figure 1. Example of the production task material (from Vogels, Krahmer & Maes, 2014)



Figure 2. noun phrases produced by the three groups of participants in the common ground and privileged ground condition (out of the number of noun phrases and pronouns produced).



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