

## One or two derivations in (bimodal) bilinguals: that's the question

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The study of bimodal bilingualism constitutes a rather new and fascinating field not only to better understand the nature of linguistic representations in bilinguals in general, but also their interface with production and comprehension systems. The amount of data and linguistic analyses of bimodal bilingual subjects is still quite limited, and Lillo-Martin, Müller de Quadros & Chen Pichler (2016) summarize one of the main threads of research in this domain, associated to the BiBiBi project developed on a database with ASL-English and Libras-Portuguese bilingual data. The other main thread is represented by Donati & Branchini (2013) and subsequent work, which relies on a corpus of LIS-Italian bilinguals. Some of the empirical generalizations drawn by the two groups of researchers are shared, but there are also some important differences, which have led to significantly differing models for the derivation and representation of (bimodal) bilingual utterances. One striking difference mentioned in Lillo-Martin et al. 2016 (section 5) is the amount of non-congruent syntax in blended structures: in their database of bimodal bilingual productions such structures are very rare. By contrast, in Donati & Branchini's work on LIS-Italian bilinguals, even if they are not as frequent as congruent blended sentences, they are not at all residual, but rather quite common. In addition, they have been submitted to comprehension tasks by bimodal bilingual subjects and they have been deemed as totally acceptable and natural. As pointed out in Lillo-Martin et al. (2016), this discrepancy is most probably the consequence of divergent basic word orders in the bilingual pairing: SVO for Italian and SOV for LIS. This is arguably a major contrast to take into account when theorizing about the grammatical competence of bimodal bilinguals, since the conclusions drawn in Lillo-Martin et al. 2016 might carry the empirical bias of having examined only congruent language pairs.

When referring to the set of facts of non-congruent blends, the authors state that “the late linearization analysis is completely compatible with the Language Synthesis Model” (p. 42, 1<sup>st</sup> paragraph). For non-congruent syntax in blended sentences Donati & Branchini's (2013: 120) proposal (from which they have departed in later work) amounts to having a single syntactic structure only encoding hierarchy, and two opposing linearizations at PF “generating the two strings [that] are represented respectively as “>” (c-command = precedence, yielding Italian) and “<” (c-command = succession, yielding LIS)”:

(1) WH>C>I>V	vs.	WH<C<I<V
chi ha telefonato		CALL DONE WHO
‘Who has called?’		

Although no data are discussed in this respect, I think reducing non-congruent blends to linearization might be too simplistic. If linearization is a “harmonic” phenomenon that yields SVO vs. SOV orders in the two languages at hand, it fails to predict that Topic constituents, which hierarchically appear above WH, are robustly part of the left periphery both in Italian and LIS. The linearization account would give the right result for Italian, but arguably not for LIS, since it would linearize the topic to the right of the WH word, which is predicted to be ungrammatical:

- \_\_\_\_\_t  
 (2) A Gianni, chi gli ha telefonato? vs. \*CALL DONE WHO GIANNI  
 ‘As for Gianni, who has called him?’

In any case, this is an empirical question that needs to be addressed.

One aspect that remains untouched in Lillo-Martin et al. (2016) is how nonmanuals and prosody in general behaves in fully and mixed blended utterances. Given the model the authors defend, it is expected that in full-blend sentences, two full-fledged prosodies should be observed: one corresponding to the spoken signal and a parallel one corresponding to the signed sequence. This would be unsurprising from the point of view of the Language Synthesis model, because phonological encoding comes in at the very end of the derivation. In only partially blended utterances, the expectation is that the prosody of the complete utterance will surface in its target form, while the prosodic properties of the incomplete sentence in the other modality will be either missing, defective or totally coupled to that of the full utterance. Again, though, the particularly interesting case to investigate is what happens with prosody in non-congruent full blendings. Since prosody crucially interfaces with syntactic structure, it seems especially relevant to determine how prosodic properties are mapped onto the fully blended utterance. If the two simultaneous but incongruent structures turn out to be produced with their respective expected prosodies, this might constitute evidence to entertain the possibility that those utterances are actually the result of two distinct derivations (Possibility 2 discarded in Lillo-Martin et al. 2016, (13b)).

An even more promising domain to explore the predictions of the competing approaches (allowing vs. excluding two parallel derivations in the competence of bimodal bilinguals, to put it simple) would be to examine the blended utterances where the signed counterpart involves prosodic features that have been argued to be determined by morphosyntax. One such case is negation, a morphosyntactic category that is tightly linked to a nonmanual marking like headshake. For ASL it has been claimed to be a syntactic feature sitting in Neg<sup>o</sup> that gets instantiated as headshake (Neidle et al. 2000: 44f), while in DGS and LSC it is taken to be a featural affix that is realized nonmanually, that is, it has a prosodic instantiation (Pfau & Quer 2002) (cf. (3)-(4)). Irrespective of the particular implementation of the analyses, what seem clear from those analyses is that morphosyntax is driving the realization of this nonmanual feature at the prosodic level.

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|---|------------|
| <p>_____hs (_____hs)<br/>         (3) JOHN NOT BUY HOUSE.<br/>         ‘John didn’t buy the house.’</p> | <p>ASL</p> |
| <p>_____hs<br/>         (4) SANTI EAT MEAT NOT.<br/>         ‘Santi doesn’t eat meat.’</p>              | <p>LSC</p> |

A test case would be provided by full-blend negative utterances from bilinguals in languages with congruent SVO orders, say ASL-English, on the one hand, next to full-blend utterances in languages with incongruent SOV and SVO orders, such as LIS-Italian or LSC-Catalan, on the other hand. In principle, for the two-derivation approach both in congruent and non-congruent pairs of languages no immediate conflict is expected to

arise, so the prediction is that the realizations of the proposition in the two modalities display target-like, full-blown prosody, including the nonmanuals instantiating negation. For the one-derivation approach, this would be a problematic result, because no single derivation could support the realization of two distinct and full-fledged prosodies.

For a one-derivation approach like the Language Synthesis model, though, the question still arises whether the morphosyntactic features associated with signed (nonmanual) negation are compatible with a single derivation for both modalities. If the prosody in one of the two modalities always looks impoverished, but meets the monolingual target in the other one, then I think we would have an additional empirical argument for the single derivation approach to this type of utterances, as advocated in the Language Synthesis model (still we would need an explanation for the non-congruent order of the vocabulary items in blends from non-congruent pairs of languages, an aspect which is not directly addressed). In the case of a negative structure in LIS or LSC in a full-blend, for instance, if headshake does not surface, we could easily conclude that we are facing a single derivation that did not include in its numeration the relevant functional feature to be realized morphologically as headshake in the signed phonology.

These considerations are obviously subject to empirical testing that is not available yet. Resolving the issue of one vs. two derivations in the grammatical representations of bimodal bilinguals is far from trivial, and it obviously requires not only deepening the analysis of the existing databases, but also confronting the results from different types of data, such as those from congruent and non-congruent pairs of languages. The questions to be answered in this area are particularly exciting for Linguistic Theory and for Psycholinguistics and the research carried out so far is already extremely promising, as Lillo-Martin et al. (2016) make evident. We cannot but hope that work in this domain will be intensified and will extend to other pairs of languages.

## References

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