

Movement repetition in Libras signs

André Xavier & Corrine Occhino

Since the 1960's, movement has been acknowledged as a phonological prime for signed languages. Movement contrastiveness has been demonstrated, not only in terms of different movement types (path movement, arc movement, circular movement etc.), but also in terms of its (non)repetitive production, ie) the number of times the full movement of a sign is articulated. In Brazilian Sign Language (Libras) for example, the signs FATHER-IN-LAW and SINGLE, differ only in the type of movement (Fig.1) and the signs TRUE when used as an adjective is produced with one execution of movement and as the discourse marker TRUE, when produced with more than one downward movement (Fig. 2).

Battison (1978) suggested that morphologically simple signs in American Sign Language (ASL) can be articulated with one or two-beats, that is, they may require, respectively, one execution of their basic specified phonological parameters (location, handshape, orientation and movement) or minimally, two executions. In the latter case, more than two repetitions may occur without any change in the sign meaning, signalling phonological rather than morphological reduplication. Channon (2002) argued that, unlike spoken language, where partial reduplication of segments can occur within a word, morphologically simple signs exhibit only “rhythmic repetition” or full reduplication, where the entire sign is articulated with repetition of the movement. These full reduplications are not constrained by number of articulations since they consist of full repetition of the sign in its entirety and are not contrastive. Both Channon and Battison, however, formulated their claims based intuitions regarding ASL and they have not been systematically tested on production data from ASL or in other signed languages.

Here we test the generalizations made by Battison and Channon regarding movement repetition in Libras in morphologically simple signs. In a study of phonological variation in Libras, Xavier (2014) elicited sixty which were known to exhibit phonological variation in at least one parameter, from 12 Deaf Brazilian signers from Sao Paulo (six male and six female). Signs collected in this study revealed a greater frequency of variation in the movement parameter, for both movement type and reduplication, than was predicted. Using ELAN we coded the signs with variation in the movement parameter to determine the type and number of movements in the articulation of each sign. Of the 2,160 possible articulatory variations (60 signs X 12 subjects X 3 trials), 220 productions were discarded because they did not meet the criteria for morphologically simple signs, this trimming however, did not result in the discarding of any individual sign. Of the remaining articulations, 17 of the 60 elicited signs (28.3 %) were consistently articulated as one-beat signs, and 19 signs (31.7%) were consistently articulated as two-beat signs; however, 22 signs (36.7%) exhibited variable articulations between one-beat and two-beat articulations, both within and across signers.

The data analyzed here does not support Channon's proposal regarding “rhythmic repetition,” instead, formal accounts of well-formedness and contrastive features cannot account for the variable production of reduplicated articulations in Libras. While our results do support Battison's claim that two-beat signs are realized with at least two executions, this data also suggests that signers and signs vary in terms of consistency of movement repetition across usage-events. The variation observed in Libras sign production may be due to more complex social,

stylistic, and usage-based issues such as interlocutor familiarity, style-shifting, and token frequency, in addition to the interaction of movement with other phonological parameters. Because the data used for this analysis were elicited in isolation and not part of a larger discourse unit, we are unable to make claims about which of these social factors may be influencing such variation. More research on natural discourse from fluent signers is needed to better understand the intricacies of phonological variation in sign production.

Figures



Fig. 1) FATHER-IN-LAW *versus* SINGLE



Fig 2.) TRUE (adjective) *versus* TRUE (discourse marker)

References

Battison, Robbin. 1978. "Lexical borrowing in American Sign Language." Silver Spring, MD: Linstok Press.

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