

# **An experimental approach to sign language reduplication: From function to form**

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This study combines a methodological and a theoretical goal, as it (i) introduces three novel experiments to investigate reduplication in Sign Language of the Netherlands (NGT), and (ii) presents the results, providing the first comprehensive overview of reduplication in NGT.

## **1. Background**

Sign language (SL) reduplication comes in many shapes and may fulfil various morphemic functions (Wilbur 2009). This study focuses on three of these functions in NGT: nominal pluralization, aspect marking, and reciprocal marking. First, nouns are pluralized by means of reduplication in many studied SLs (e.g., Sutton-Spence & Woll 1999 for British SL; Pfau & Steinbach 2005 for German SL). Often, plural reduplication is constrained by location and movement features of the noun. Indeed, based on analysis of NGT teaching materials, Harder et al. (2003) observe that NGT nouns can be pluralized by reduplication, and that there are phonological constraints, e.g., reduplication was found to be ungrammatical for nouns with a repeated movement in their base form.

Second, aspect marking in SLs often involves reduplicating the verb and modulating the rate and rhythm of the verb's movement (e.g., Zeshan 2000 for Indo-Pakistani SL; Rathmann 2005 for American SL). According to Hoiting & Slobin (2001), the continuative and habitual are marked in NGT by reduplication and an "elliptical modulation". They also identify phonological constraints: NGT verbs that are body-anchored and/or have internal movement cannot be reduplicated. However, since the method is not discussed, it is unclear how the authors came to this analysis. Moreover, Oomen (2016), investigating the same aspect types for NGT based on one informant, does not find any phonological restrictions.

Third, several SLs were found to form the reciprocal by means of "backward reduplication" of the verb, where the verb is reduplicated, and its movement is reversed in the reduplicant (e.g., Pfau & Steinbach 2003 for German SL; Zeshan & Panda 2011 for Indo-Pakistani SL). Klomp (2021) conducted a small-scale study on NGT reciprocals, involving one participant. The results suggest that two-handed agreement verbs are marked for reciprocity by sequential backward reduplication, while one-handed agreement verbs may be marked by sequential or simultaneous backward reduplication.

## **2. Aims**

The present study investigates reduplication in NGT to mark plurality on nouns, and aspect and reciprocity on verbs, considering the factors that potentially influence NGT reduplication as suggested in previous studies. It is the first study to systematically address all three of these functions of reduplication in NGT, adopting a novel experimental approach.

## **3. Method**

All three functions of reduplication were first explored in the Corpus NGT (Crasborn et al. 2008), containing 70+ hours of videos of 92 deaf signers. In total, 297 plural nouns, 240 sentences marked for aspect, and 54 reciprocals were extracted from the corpus. I cannot go into the corpus findings here, but suffice it to say that they were taken into account when developing the three elicitation tasks, one for each specific function of reduplication. In designing the tasks, the relevant variables suggested by previous studies were also kept in mind.

*(i) Pluralization.* A gap-filling task was designed to elicit the plural form of 21 nouns with different specifications for location (body, lateral, midsagittal) and movement (simple or repeated). Five deaf signers were presented with 42 signed sentences (excl. fillers) in which the plural noun was omitted and replaced by a question mark sign; they were asked to fill in the gap, based on a picture. An example is shown in (1).

**(ii) Aspect marking.** An elicitation task was developed to elicit aspect marking on six different verbs: two body-anchored, two with internal movement, and two without these properties. For each verb, there were items targeting habitual, continuative (both imperfective), and iterative (perfective) aspect. Each of the 36 items (excl. fillers) consisted of two parts: (i) a picture showing the verb, and (ii) a question in NGT about that picture, with a context which specifies the duration or frequency of the event shown, e.g. (2), which targets the continuative. Six deaf signers were asked to answer the question in a full sentence, based on the picture presented.

**(iii) Reciprocal marking.** The third elicitation task aimed to elicit the reciprocal form of one- and two-handed plain and agreeing verbs. Seven verbs (agreement and plain; one- and two-handed) and different types of reciprocal meaning were targeted. This resulted in 11 items (excl. fillers), each consisting of a video showing two actors playing out a reciprocal situation. The situation-video was shown together with a video of a verb in its base form, see (3). Six deaf signers were asked to tell a story to describe the situation they saw in the video, using the verb they were given.



Item: ‘Last October, the ? were on strike’  
Target: ‘The farmers were on strike’



Item: ‘to give’  
Target: ‘They give each other a cup’



Item: ‘This man is at home. What has he been doing for hours?’  
Target: ‘He has been cleaning for hours’

#### 4. Results

I summarize the main findings, but cannot elaborate on all results here.

**(i) 189 nominal plurals were elicited; 61% of these are reduplicated.** I identify two main reduplication types: simple (repetition of the noun’s movement) and sideward (repetition with an added sideward movement), the choice of which depends on the phonological properties of the base noun.

**(ii-a) 71 continuative and habitual (imperfective) sentences were elicited, of which only 23% involves reduplication,** where the movement of the verb is repeated. The low percentage is due to phonological constraints: predicates with the location feature [trunk] or a handshape change are not reduplicated.

**(ii-b) 52 iterative (perfective) sentences were elicited, of which 71% involves reduplication of the verb;** pauses are added in between reduplication cycles, and this reduplication type is unconstrained.

**(iii) 62 reciprocals were elicited; 45% involves simultaneous or sequential backward reduplication of the verb.** Two-handed verbs are never reduplicated. For one-handed agreeing verbs, reduplication type depends on the semantics: for simultaneous

reciprocal meaning, signers choose simultaneous reduplication, while for sequential reciprocal meaning, signers choose sequential reduplication or zero marking. For one-handed plain verbs, simultaneous backward reduplication marks simultaneous reciprocals, while sequential reciprocals are zero-marked.

(iv) For all three morphological functions, reduplication is optional, even for unconstrained base signs.

## 5. Conclusion

All three tasks successfully elicited the targeted constructions. The results show that NGT patterns with other investigated SLs, as phonological, morphosyntactic, and semantic factors influence reduplication. They also reveal some unexpected patterns, e.g., the across-the-board optionality. The three investigated functions differ from each other in terms of what types of reduplication occur, and which factors play a role. These insights complement findings from previous studies on NGT, due to the novel methodology. Using similar elicitation tasks in research on other SLs would provide more insight into cross-linguistic patterns and variation.

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