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Simultaneous VS. Sequential Compounds in LIS: A Perceptual Experiment

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BACKGROUND

Full simultaneous compounds are rare in sign language [1], but may be more frequent when one morpheme is a classifier form [3]. These forms show phonological reduction, an established test to identify compounds in sign language [2]. In Distributed Morphology some authors include root-root compounds as a parametrically governed grammatical option [5]; others allow compounding only after the category label has been assigned [4].

GOALS

i) Experimentally compare perception of simultaneous and sequential compounds in LIS; ii) Establish whether phonological reduction is a good test to identify LIS compounds; iii) Evaluate whether one or two derivations are needed to account for simultaneous and sequential compounds.

HYPOTHESIS

If simultaneous and sequential compounds are equally perceived as a single word-like unit (e.g *swordfish*), they may receive a similar morphosyntactic derivation. If there is a difference in perception, this could be potential evidence for different morphosyntactic derivations.

METHODOLOGY

Stimuli. We selected 12 sequential and 12 simultaneous LIS compounds. For each compound, we created a minimal triplet including a target sentence and two baselines. The first baseline replaced the compound with a single word; the second baseline replaced the compound with two words. Sentences varied in length (3+1-6+1 signs each) for a total of 72 stimuli. (1) provides an example triplet:

1. a. PAOLO CL-ZIP^CL-CYLINDER BLACK (target)

   b. PAOLO SHIRT BLACK (1-word baseline)

   c. PAOLO SOCKS SHOES BLACK (2-word baseline)

   'Paolo has a black pencil-case/shirt/socks and shoes.'

Design. Nineteen Deaf subjects were asked to count the number of signs in each sentence. Stimuli were randomized. 15 comprehension questions served as an attention check, and a demographic questionnaire followed the survey. Instructions were in LIS.

RESULTS

A mixed model logistic regression with subject and item as random factors revealed a significant effect of *stimulus type* (sequential, simultaneous, baseline1 or baseline2) and *stimulus length.* The plot is given in figure1. Regarding *stimulus type,* simultaneous compounds patterned with baseline-1, while sequential compounds were assigned higher counts. Longer stimuli had lower accuracy.

DISCUSSION

The length effect can be explained as a processing cost due to working-memory. We explain the stimulus-type effect by positing that simultaneous compounds are one-word signs (and thus indistinguishable from baseline1), while sequential compounds have their category labels still visible in the morphosyntax. Within Derivational Morphology, we propose to account for the contrast in the following way: simultaneous compounds are derived by syntactic merge of two roots prior to category labeling (hence they are a single morphological word, cf. 3a). Sequential compounds are derived by combining two roots after category labeling has already applied (cf. 3b).

3. a. CL-ZIP^CL-CYLINDER = $[_{nP}[_{\surd}$CL-ZIP$][_{\surd}$ CL-CYLINDER$]]$

   b. HEART^EXPLODE = $[_{nP}[_{\surd}$HEART$][_{v}[_{\surd}$EXPLODE$]][_{nP}\ t_{[v[\surd \text{EXPLODE}\ ]]}]]$

CONCLUSIONS AND EXTENSIONS

The fact that overall accuracy was high both with simultaneous and sequential compounds indicates that phonological reduction is a good test to detect compounds. Still, there is a perceptual difference between simultaneous and sequential compounds. We attribute this difference to the fact that the two kinds of compounds are derived in different ways.

SELECTED REFERENCES

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