Iconic variables and null subjects in German Sign Language (DGS)

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Background. Almost all sign languages (SLs) we know of distinguish between verbs that display person agreement properties (*agreement verbs*) and verbs that do not (*plain verbs*), which appears to be a modality-specific peculiarity (Padden 1988; Meir et al. 2007). Moreover, SLs generally allow null arguments to occur with both verb types (see e.g. Lillo-Martin 1991 for American SL (ASL); Bos 1993 for SL of the Netherlands (NGT); Glück & Pfau 1998 for German SL (DGS)).

Lillo-Martin (1986, 1991) argues that the null arguments that occur with agreement verbs and with plain verbs in ASL are not of the same kind. She proposes that the former type of verb licenses the empty category *pro*, while the latter type licenses nonpronominal empty topics. The analysis is supported by examples such as (1) (Adapted from Lillo-Martin 1991; 't' = non-manual topicalization marker). (1a) includes an agreement verb (LOOK-OVER), and does not require a resumptive pronoun for the left dislocated subject, while (1b) with a plain verb (TEETH-BRUSH) does. Bos (1993) and Glück & Pfau (1998) back Lillo-Martin's analysis, describing comparable patterns for NGT and DGS, respectively.

(1) a. t
BROTHER$_a$ JULIE$_b$ THINK (INDEX$_a$) $_a$LOOK-OVER$_c$ CAR$_c$ FINISH
'My brother$_i$, Julie thinks he already looked over the car.'

b. t
BROTHER$_a$ JULIE$_b$ THINK *(INDEX$_a$) BRUSH-TEETH FINISH
'My brother, Julie thinks he already brushed his teeth.'

Objective. This study reassesses the licensing conditions for null subjects in clauses with plain verbs in DGS. I show that it is necessary to distinguish plain verbs that are articulated on or near the body (*body-anchored verbs*, e.g. FEAR, EAT, THINK) from plain verbs that are articulated in neutral space in front of the signer (*neutral verbs*, e.g. BUILD, PLAY, SING) – a distinction not made in previous studies. I argue that iconic properties of body-anchored verbs affect the licensing conditions for null subjects.

The data. 794 examples were extracted from 8.5 hours of annotated naturalistic corpus data (DGS Corpus: www.sign-lang.uni-hamburg.de/dgs-korpus), involving 40 body-anchored (594 tokens) and 25 neutral verbs (200). The verbs represent verb meanings from the 'ValPaL' list, which has been used in the study of argument structure in spoken languages (www.valpal.info).

Results. Analysis of the data reveals that non-overt subject arguments are commonly found in both clauses with neutral verbs and body-anchored verbs. However, only for the latter verb type, we observe a restriction related to grammatical person: only 7% of the sentences with a body-anchored verb and a *non-first person* referent include a null subject (these exceptions will be discussed in the presentation). In contrast, 36% of the clauses with a body-anchored verb and a first person referent contain a null subject, and in clauses with neutral verbs, a null subject occurs in 43% and 25% of the examples with a first person and non-first person referent, respectively.

Analysis. Signers of DGS thus appear to disfavor a non-overt, non-first person subject in sentences with a body-anchored verb. Given that (a) body-anchored verbs typically iconically refer to a mental or physical location in or on the body through their articulation on the body (Meir et al. 2007), and (b) the signer's body is also the locus for first person pronouns, I suggest

that the articulation of a body-anchored verb automatically leads to a default first person interpretation of a null subject.

Formally, I propose that body-anchored verbs introduce a variable *x*, which enters into a co-indexing relation with the subject. The variable is situated in a locative adjunct that is introduced when a body-anchored verb is articulated; the adjunct conveys where in the body the event denoted by the verb takes place or which part(s) of the body it involves. WORRY takes place in the head, for instance, while EAT involves the mouth.

The variable *x* receives either one or two featural specifications. The feature *'b'* is always present and indicates iconic body-anchoring. The second feature is a first person feature *'1'*. Depending on other elements in the numeration, either x_b or x_{b+1} is selected. That is, x_b is selected when there is a lexical element in the numeration with a non-first person feature (2a), but x_{b+1} is selected in case of a first person element (2b), or when there is no item with person features (2c). Note that the assumption that elements can be affected by other elements in the numeration is in line with Chomsky (1995:294). The first person feature specification on *x* leads to a non-overt subject being interpreted as first person, thus ruling out non-first person interpretations.

(2) a. N = { INDEX$_{2/3}$ x_b AFRAID … }
b. N = { INDEX$_1$ x_{b+1} AFRAID … }
c. N = { x_{b+1} AFRAID … }

Discussion and conclusions. Analysis of the corpus data reveals that, at least in DGS, a more fine-grained distinction between verb types is necessary in order to account for the observed subject drop patterns. In contrast to previous studies, we find that subject drop is generally not allowed in clauses with body-anchored verbs and non-first person referents, but it is permitted in clauses with body-anchored verbs and first person referents, and in clauses with neutral verbs – independent of person. The contrast between body-anchored verbs and neutral verbs is not adequately explained by an empty topic analysis alone (Lillo-Martin 1986, 1991), since there is no a priori reason to assume that non-first person subjects are less likely to be topics (and therefore less likely to be dropped) in clauses with body-anchored verbs than in clauses with neutral verbs.

I have argued that iconic aspects of body-anchored verbs explain why non-first person drop is disfavored: the iconically motivated place of articulation of body-anchored verbs coincides with that of first person, leading to a default first person interpretation of a null subject. Formally, this is represented with a variable with a first person feature coindexed with the subject, which licenses subject drop in case of a first person referent. With this analysis, I align myself with recent efforts to reconcile formalist and iconic views on sign language structure (e.g. Schlenker et al. 2013; Wilbur 2003). Still, an empty topic approach is not precluded; future research should further investigate the interaction between topichood and grammatical person of the subject, iconic aspects of verbs, and verb types to arrive at a more comprehensive picture of the licensing conditions for null subjects that are at play in DGS and other sign languages.

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