Head movement and the interpretation of Agents in Motion Predicates in ASL

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This work is **about** the underlying structures that generate the two interpretations available for *push*-type verbs in (1):

(1) *Jean pushed the lawn mower into the garage*

a. Jean did an initial push with her hands and the lawn mower went into the garage by itself

b. Jean was moving along her lawn mower while pushing it into the garage.

In both cases, *Jean* is the agent. In the a.-case the contact between the agent and the theme is only initial and the theme undergoes displacement by itself, while in the b.-case, contact between the agent and the theme is continuous and both theme and agent engage in the displacement. Whereas in English there is no apparent morphosyntactic evidence for a different underlying structure in (1a./b.) and the interpretational contrast could be attributed to the pragmatics of the situation, there are languages where we can observe morphosyntactic evidence for a syntactic encoding of the respective interpretations.

Here we examine the behavior of ASL with respect to this contrast. ASL expresses this type of predicates (motion predicates) using serial verb constructions (SVCs) reflecting subeventive decomposition, with at least one verbal element associated with the agent and another one associated with the displacement. The verbal elements used in these SVCs are referred to as *classifier predicates* and are morphological complexes formed of a *handshape* (the classifier itself) and a *movement/kinetic* element (the eventive element, whether lexical or gestural). Consider (2):

(2) a. MAN.a $B]_{BP}$.a+PUSH.b BOY.b $V]_{WE}$.b+GO-SLIDE-DOWN.π [0704-ASLsn]

'the man pushes the boy (to go) down the slide'

b. GIRL.a TRAIN.b …TUNNEL.z B_{BP}.a+-GO.π.z ---------- (H1) [0906-ASLsn]

$Cdwn_{we}$.z+BE-AT $3_{w/e}$.b +GO.π.z---- (H2)

'the girl pushes the (toy) train into the tunnel'

In (2a.) the handshape classifier B]+_, of type BodyPart-BP, is associated with the agent (MAN.a) whereas V]+_, of type WholeEntity-WE, is referentially associated with the theme (BOY.b). The kinetic +GO, denoting the eventive displacement vector π, or trajectory, is only associated with the undergoer, V]+_, and the interpretation is that of *initial contact* only (only the thematic BOY undergoes displacement). In (2b), on the other hand, both the agent-related B_{BP}.a+_ and the thematic $3_{w/e}$.b+_ are associated with +GO and the interpretation is that both agent and theme undergo displacement along vector π, with *continuous contact*. Moreover, B_{BP}.a+_ and $3_{w/e}$.b+_ are coarticulated, one on the dominant hand (H1) and the other on the non-dominant hand (H2).

We propose a **hypothesis** by which head movement of the lower trajectory verb (+GO) to the higher verb (V-*v**, PUSH) introducing the agent, generates the continuous contact b.-type interpretation (effectively raising the displacement vector to the agent); the morphological output of this operation is the articulation of the agent subeventive classifier (B_{BP}.a+_ in 2b) along the articulation of the displacement vector π. Lack of head movement yields the initial only interpretation, where only the theme undergoes displacement, as in 2a, where the agent subeventive classifier ($B]_{BP}$.a+_ in 2b) is not articulated along the displacement vector π.

We follow Benedicto and Brentari (2004) analysis of classifiers as functional features bundled into functional heads and the Larson-based event decomposition structures for SVCs. The structures thus generated will look like (3). In (3a) an agentive *v** is bundled with the $B]_{BP}$.a+_ classifier (assignment of theta-role and of classifier features to external DP happens at this stage), whereas a lower (*process*-related) thematic *v* head is bundled with the $V]_{w/e}$.b+_ classifier (assignment of

theta-role and of classifier features to internal DP happens at this stage). The displacement vector _+GOπ head-moves to the immediately dominating head *v*, where both the classifier and the kinetic components produce a viable morphological unit. In (3b), the complex head resulting out of the syntactic head movement of _+GOπ to $_{3+}v$ further moves to $_{B]+}v$*. This further head movement is, we claim by hypothesis, the one that is responsible for the interpretation of the agent as participating of the displacement vector π and, thus, the *continuous contact* interpretation.

(3) a. [$_{TP}$ DP_{ag} T^0 [$_{v*P}$ ~~DP_{ag}~~ $B]+v$* [$_{vP}$ DP_{th} $V]+v$ [πP _+GOπ

b. [$_{TP}$ DP_{ag} T^0 [$_{v*P}$ ~~DP_{ag}~~ $B]+v$* [$_{vP}$ DP_{th} $_{3+}v$ [πP _+GOπ

Two conditions have been discussed in the past with relation to the contrast in (1) in the Sign Language literature and what may drive it (Benedicto 2022). One concerns morphological conditions as the culprit for head movement (to obtain a morphologically viable head); the second one establishes that *handling* classifiers trigger *continuous* interpretations while *body part* classifiers trigger *initial*-only interpretations. Let's consider them here. The morphological integrity condition (that is, being able to generate a morphologically viable unit) is useful to generate structures like (4), where there is no CLS bundled with *v* and _+GO needs to raise to the next head (with the handling classifier C_{dwn}.a bundled in) to be morphologically viable:

(4) GIRL.a TRAIN.b … $Cdwn_{HDL}$.a+GRAB-GO.π.z 'the girl takes the train to-z' [0905-ASLem]

However, the case of (2b) questions the necessity of this condition, since the second head movement is 'unnecessary' with _+GO already bundled with the 3+ classifier in *v*. It has also been suggested that *handling* classifiers trigger continuous contact interpretations while BodyPart classifiers, both bundled with *v**, trigger initial-only interpretations. While this is, in terms of numbers, a solid generalization, examples like that of (2b) again contradict the necessity of it: in (2b), a BP-classifier participates in a derivation that generates a continuous contact interpretation. The key to both cases is head movement of displacement vector denoting _+GOπ all the way to the *v** agentive head. This leaves us with the question of what triggers head movement at all in these cases, given the availability of the two derivations in (2-3). We hypothesize here that the (eventive/+V) feature in the upper *v** remains active throughout in an SVC derivation (perhaps this being the property that allows SVCs in some but not all languages). If so, in an initial-only derivation, there must be something that blocks that feature from looking further down the structure. Preliminary evidence comes from spoken languages with SVC, such as Akan, where the grammaticalized element *a-ma* blocks the eventive +V feature in *a-to*, yielding an *initial* reading:

(5) O-baa no a-to a-nomaa no ***a-ma*** a-nomaa no a-ko-si fence no so
SG-girl DEF PRF-throw sg-bird DEF PRF-make sg-bird DEF PRF-go-stand fence DEF top
'the girl has thrown the bird (all the way) to the top of the fence' (Opoku 2024)

If this Hypothesis is in the right direction, then it and the contrast in (2) contribute to the discussion about (i) the status of head movement as a syntactic operation or an after *Spell Out* operation (Chomsky 2000), and (ii) the potential interpretational consequences of head-movement (cf. Larson 1988, Koopman 1984, Vikner 1990, Bobaljik 1995, Thráinsson 2000, Benedicto 1998, Harley 2005, Matushansky 2006, among others). The Hypothesis proposed here contributes to support the idea that verb (head) movement does indeed happen in the syntax and does have interpretational import.