

# The structure of events and arguments in associated motion\*

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**Abstract:** In Santiago Laxopa Zapotec, associated motion prefixes apply to a verbal base to introduce a preceding motion event with the verb's external argument as the mover. In this paper, I argue that the semantic composition of such complex events is best understood within a broader typology of how heads can introduce new thematic information. In particular, I advance a proposal featuring elements of event chaining akin to causative constructions, together with argument identification akin to restructuring verbs that take subject-less prejacents. In addition to explaining the features of associated motion in this language, the account offers some insight on patterns observed in the general typology of associated motion.

**Keywords:** Zapotec, associated motion, Oto-Manguan, argument structure, restructuring, control

## 1 Introduction

Natural language features a few key tools at the syntax-semantics interface for introducing thematic dependencies on top of a base lexical verb. Some also license the presence of a new argument to saturate the dependency. An applicative head, e.g. (1b),<sup>1</sup> may introduce and saturate a new thematic dependency, e.g. a beneficiary, on the existing base event. For more complex predicates, a causative head, e.g. (1c), may introduce and saturate a new thematic dependency of a new event, while broadening the clause's main event into a causal sequence of the new and base events.

- (1) a. Maria vaso-ta ham-ta-k. [Hiaki; Uto-Aztecan, Sonora & Southwestern US]  
Maria glass-ACC break-TR-PRF  
'Maria broke the glass.'
- b. Maria uusi-ta aa ham-ta- ria -k.  
Maria child-ACC it break-TR- APPL -PRF  
'Maria broke it **for the child**.'
- c. Juan Maria-ta vaso-ta ham-ta- tua -k.  
Juan Maria-ACC glass-ACC break-TR- CAUS -PRF  
'**Juan made** Maria break the glass.'
- (Harley 2017:10-12)

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<sup>1</sup> Abbreviations used in the paper: 3 = third person, ACC = accusative, AND = andative, APPL = applicative, CAUS = causative, COMPL = completive, CONC = concurrent, CONT = continuative, COP = copula, ELD = elder, HUM = human, IMPF = imperfective, INF = infinitive, MOT = motion, NEG = negative, OBJ = object, PFV = perfective, POT = potential, PRE = preceding, PRF = perfect, PRS = present, PST = past, SG = singular, TR = transitive, VEN = venitive.

	<b>Introduces event</b>	<b>Identifies event</b>
<b>Introduces argument</b>	Causatives	Applicatives
<b>Identifies argument</b>	??	Restructuring

**Table 1:** The ways natural language may relate new thematic dependencies to a verbal base.

It is also possible to introduce new thematic dependencies without new arguments, as has been proposed for multi-verbal clauses which exhibit restructuring effects, e.g. in German (2).

- (2) ...weil Hans den Traktor zu reparieren versuchte.  
tried [German]  
 since Hans the tractor to repair  
 ‘...since Hans **tried** to repair the tractor.’ (Wurmbrand 2002:105)

Wurmbrand (2002) calls the mechanism by which this can occur ‘semantic control’,<sup>2</sup> whereby multiple thematic dependencies can be composed so as to be saturated by a single nominal element. Thought of another way, the argument of the new dependency is identified with the argument of an existing dependency. For instance, in (2), Hans is both a trier and a repairer. In all familiar cases of argument identification, these thematic additions are added onto the single base event, without any further event complexity; i.e. in (2), Hans’ participation as a trier and a repairer is simultaneous.

These facts point us towards a typology with a notable gap (Table 1). We observe that natural language can add thematic dependencies which require either novel or identified arguments, and either novel or identified events. We thus predict the existence of constructions where a head may introduce a thematic dependency via introducing a new related event, as in causatives, while identifying the new expected argument of that dependency with an argument that is already expected in the base, as in restructuring.

In this paper, I argue that this is the right analysis for at least some cases of **associated motion** (AM), a crosslinguistically well-attested verbal construction where functional morphology on a base verb introduces a motion event related to the base event, in which one of the base event’s arguments is the mover (Guillaume and Koch 2021). In particular, I will advance this analysis for associated motion in Santiago Laxopa Zapotec (SLZ), a particularly canonical example of the construction. I propose that in SLZ, AM prefixes recursively compose a complex event akin to certain causatives (§3.1), but with an argument structure akin to Wurmbrand’s semantically controlling restructuring verbs, such that assignment of the mover is parasitic on the regular external argument of the base verb (§3.2). After defending this proposal and ruling out a syntactic control analysis (§4), the paper concludes by exploring how this way of understanding associated motion squares with what we know about the broader typology of the construction (§5).

<sup>2</sup> Drawing a contrast with ‘syntactic’ control (e.g. Landau 2000), where the multiple thematic dependencies are actually saturated by two distinct nominal elements, though one is implicit under strict binding requirements.



completive are incompatible with any denial of conclusion (5a). When associated motion constructions are marked with *COMPL*, we observe the same culmination entailment for the entire sequence (5b). So long as we assume aspect is always applying to a single event, its contribution here thus appears to locate the event that corresponds to the entire sequence.

- (5) a. U-do Bedw'nh xwe. # Bitu b-iyuhll u-do =ba'. [SLZ]  
 COMPL-eat Pedro lunch NEG COMPL-finish COMPL-eat =3HUM  
 'Pedro ate lunch. He didn't finish eating.' (Contr.) (SLZ5047-019)
- b. B-de-do Bedw'nh xwe. # Bitu b-iyuhll u-do =ba'.  
 COMPL-VEN-eat Pedro lunch NEG COMPL-finish COMPL-eat =3HUM  
 'Pedro came and ate lunch. He didn't finish eating.' (Contr.) (SLZ5047-040)

## 2.2 Associated motion has a fixed argument structure

The Motion and Goal events are further mandatorily related by virtue of argument identification: the construction is only possible if the Motion event's mover also realizes the canonical external argument of the preadjacent Goal predicate. The nominal element which contributes these arguments, which I'll call the AM subject, prototypically surfaces in the usual subject position following the composite verb, as demonstrated above.

Note that the correct generalization is that the AM subject serves as the external argument of the preadjacent, rather the grammatical subject. AM can apply to a wide variety of transitive (6a-6b) and intransitive preadjacents (6c), and even the locational copula (6d), but never unaccusatives (7).<sup>5</sup>

- (6) a. Sh-de-wia Xwanha' Bedw'nh. c. De-ya'a B.  
 CONT-VEN-see Juana Pedro POT.VEN-dance P.  
 'Juana comes and sees Pedro.' 'Pedro will come and dance.'  
 (SLZ5061-031) (SLZ5061-036)
- b. B-de-s-banh X. B. d. Bitu ja-zua B. lenh xaba'nh.  
 COMPL-VEN-CAUS-awake J. P. NEG AND-COP P. with his dad  
 'Juana came and woke up Pedro.' 'Pedro didn't go and live with his dad.'  
 (SLZ5051-023) (SLZ5066-002)
- (7) a. \*Ja-banh Bedw'nh. b. \*Ja-bill Bedw'nh. [SLZ]  
 COMPL.AND-awake Pedro COMPL.AND-dry Pedro  
 Int: 'Pedro went and woke up.' Int: 'Pedro went and dried off.'  
 (SLZ6043)

<sup>5</sup> Unaccusativity can be demonstrated a few ways in SLZ. Most simply, of SLZ's intransitive verbs, only unaccusatives can be causativized. The lack of 1SG tonal suppletion observed for 'non-agentive' verbs by Uchihara and Gutiérrez (2020) in Teotitlán Zapotec (Central Zapotec) seems to diagnose the same class. Note that intentionality is not the conditioning factor (6d): see Duff (2021) for more evidence that AM can apply to predicates which don't require intentional subjects.

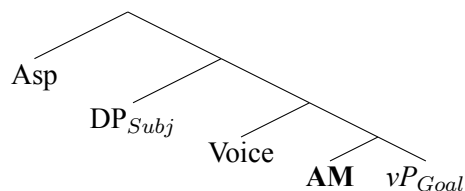
### 3 Proposal

In the last section, I put forward two generalizations: (i) SLZ associated motion describes a complex event that includes a new Motion event and the Goal event contributed by the verbal base; and (ii) the clause’s grammatical subject must serve as both the mover in the added Motion event and the external argument of the base verb. In Duff (2021), I propose a semantics for this entire complex event description that can capture these generalizations, among others, demonstrated in simplified form in (8).<sup>6</sup> However, given the rich literature on event and argument structure at the syntax-semantics interface, deriving a suitable composition for such a denotation is not trivial.

$$(8) \quad \llbracket \text{VEN-dance Juana} \rrbracket \rightsquigarrow \lambda e_s. \exists e_1, e_2 \sqsubset e [\text{ENABLE}(e_1, e_2) \wedge \text{come}'(e_1, \text{JUANA}) \wedge \text{dance}'(e_2, \text{JUANA})]$$

In this section, I demonstrate that extant proposals for event composition and argument identification can indeed generate a suitable composition, using the structure schematized in (9).

(9) The basic proposal for AM



As previewed at the beginning of this paper, though, this composition cannot be borrowed wholesale from any one known verbal construction, because it features a collection of properties of other constructions that are not usually seen together. Ultimately, the proposal brings together (i) a template for recursive event-composing heads inspired by proposals for bi-eventive causatives and (ii) a mechanism for argument identification inspired by restructuring verbs which take subject-less complements (Wurmbrand 2002). These pieces, as schematized in (9), will all come together within a split-*vP* syntax.

#### 3.1 Composing a complex event

The simplest possible composition we could imagine for associated motion would be one where the relevant morphological and semantic pieces come into the syntax precombined, or else indistinguishable from a single unit. Theories have sometimes entertained the possibility of complex verbal constructions which are built up this way, as has been suggested for a subset of irregular Japanese *-sase* causatives dubbed “lexical causatives” (Harley 2008; Manning, Sag, and Iida 2000). We might take the productivity and systematic meaning of associated motion in SLZ as first evidence against such a “lexical associated motion” proposal: lexical causatives are cross-linguistically of limited productivity and correspond to ideosyncratic meanings (Svenonius 2005).

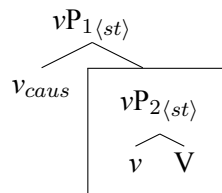
We can more conclusively rule out precompiled associated motion constructions by observing that adverbial modifiers in SLZ have readings modifying the Goal event (10).

<sup>6</sup> I assume a metalanguage predicate *ENABLE* with weak causal semantics, cf. Truswell (2011).

- (10) a. Context: Juana traveled to Laxopa on Thursday and danced on Friday.  
Llah biern b-de-ya'a Xwanha' Laxup. [SLZ]  
Friday COMPL-VEN-dance Juana Laxopa  
 'Juana came and [danced in Laxopa **on Friday**].' (SLZ5063-016)
- b. Context: Juana had a difficult trip to Laxopa but on arrival she danced very well.  
Wenh guhle b-de-ya'a Xwanha' Laxup.  
well very COMPL-VEN-dance Juana Laxopa  
 'Juana came and [danced in Laxopa **very well**].' (SLZ5063-021)

In the causative literature, the availability of these kind of embedded readings for adverbials has been taken to diagnose the presence of a well-formed predicate of eventualities<sup>7</sup> corresponding to the relevant event at an early stage of the derivation. Thus, productive causatives like Hindi-Urdu *-vaa* (Bhatia 2016; Bhatt and Embick [2003] 2017; Butt 2003; Ramchand 2008) and the productive *-sase* in Japanese (Harley 2008; Manning et al. 2000; Pylkkänen 2008) receive analyses like (11), where  $vP_2$  corresponds to the embedded host of modification.

- (11) A bi-eventive syntax for productive causatives:



Following this same argument, the only way the embedded readings in (10) could be generated would be if the derivation of the full associated motion predicate includes a predicate of eventualities corresponding only to the Goal event. No combination prior to syntactic structure would permit availability of the Goal to modification without requiring a substantially different set of assumptions (e.g. Manning et al. 2000).

With this in mind, I propose that the event properties of associated motion compose in much the same way as productive causatives.<sup>8</sup> Following, for instance, Ramchand (2008), I take such affixes to be event modifiers which compose with the preadjacent event predicate and return a more complex event predicate.<sup>9</sup> This semantics is illustrated in (12) for an affix  $\alpha$  and preadjacent  $\pi$ .

- (12) A schematic semantics for an event-composing head  $\alpha$
- $\llbracket \alpha \rrbracket \rightsquigarrow \lambda P_{(st)} \lambda e_s . \exists e_1, e_2 \sqsubset e [\text{ENABLE}(e_1, e_2) \wedge P(e_2)]$
  - $\llbracket \pi \rrbracket \rightsquigarrow \lambda e_s . \text{verb}'(e)$
  - $\llbracket \alpha \rrbracket (\llbracket \pi \rrbracket) \rightsquigarrow \lambda e_s . \exists e_1, e_2 \sqsubset e [\text{ENABLE}(e_1, e_2) \wedge \text{verb}'(e_2)]$

<sup>7</sup> These arguments rest on the assumption that adverbial modification of an event happens via neo-Davidsonian event identification (Kratzer 1996), and so is possible only if there is a node available with that event as an unsaturated argument (of eventuality type,  $s$ ) which can syntactically host the modifier.

<sup>8</sup> This generates some predictions for similarity between causatives and associated motion in terms of event structure. As it happens, SLZ has a causative prefix *s-* that indeed demonstrates the same basic generalizations laid out for associated motion in §2.1.

<sup>9</sup> The alternative is to posit a syncategorematic compositional rule similar to event identification, by which two event descriptions can compose into a meta-event description with its preadjacents as sub-events (Anderson 2019; Bhatt and Embick [2003] 2017). This would have some trouble with data discussed in §5.1.

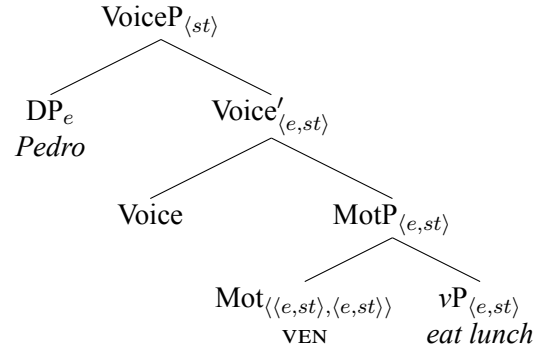
### 3.2 Identifying arguments

Recall that in order to deal with argument structure, we will have to turn to another construction, because while causatives add expect a novel argument for their new event, associated motion can only fill its new thematic dependency with the base event’s external argument. I propose that associated motion achieves this argument identification by composing with its prejacet to build an event sequence before the prejacet has composed with its external argument. This is what Wurmbrand (2002) calls semantic control: event descriptions combine as properties of an individual, preserving a shared compositional slot for their subject which is later filled.<sup>10</sup> The semantics for a semantically-controlling predicate follow the schema in (13).

- (13)  $\llbracket \text{versuchen} \rrbracket \rightsquigarrow \lambda P_{\langle e,t \rangle} \lambda x_e . \text{try}'(x) \wedge \Box_x P(x)$   
 (where  $\Box_x$  is restricted to worlds where  $x$  succeeds)

I assert that the AM prefixes are much like restructuring verbs which semantically control their infinitives: they combine with nodes with unsaturated individual arguments and carry semantics which specify the relation of their own unsaturated individual argument to their prejacet. To encode this structurally, we need a syntax which introduces thematic information compositionally prior to the merging of an external argument. To achieve this, I’ll adopt the split-*v*P approach detailed in Pylkkänen (2008) and Harley (2017), which separates the semantic introduction of external thematic roles and syntactic licensing of an internal argument, in *v*, from the syntactic selection of an external argument, in Voice.<sup>11</sup> AM prefixes would instantiate a head between *v* and Voice,<sup>12</sup> where an external argument has been projected but not yet merged.

- (14) A proposed composition for (5b)
- $\llbracket \text{VEN-} \rrbracket \rightsquigarrow \lambda P_{\langle e,st \rangle} \lambda x_e \lambda e_s . \exists e_1, e_2 \sqsubset e$   
 $\llbracket \text{ENABLE}(e_1, e_2) \wedge \text{come}'(e_1, x) \wedge P(e_2, x) \rrbracket$
  - $\llbracket \text{eat lunch} \rrbracket \rightsquigarrow \lambda x_e \lambda e_s . \text{eat}'(e, \text{LUNCH}, x)$
  - $\llbracket \text{VEN-eat lunch} \rrbracket \rightsquigarrow \lambda x_e \lambda e_s . \exists e_1, e_2 \sqsubset e$   
 $\llbracket \text{ENABLE}(e_1, e_2) \wedge \text{come}'(e_1, x) \wedge \text{eat}'(e_2, \text{LUNCH}, x) \rrbracket$
  - $\llbracket \text{Pd. VEN-eat lunch} \rrbracket \rightsquigarrow \lambda e_s . \exists e_1, e_2 \sqsubset e$   
 $\llbracket \text{ENABLE}(e_1, e_2) \wedge \text{come}'(e_1, \text{PEDRO}) \wedge \text{eat}'(e_2, \text{LUNCH}, \text{PEDRO}) \rrbracket$



Note that this deep structure of course does not correspond to surface word order. For our purposes we can derive surface VSO order by assuming traditional roll-up head movement to Asp, or we could follow Adler et al. (2018) and assume phrasal movement of AspP after arguments vacate.

<sup>10</sup> Wurmbrand takes the idea of some infinitives as properties from Chierchia (1984), who inherited it from Montague (1973), where verbs like *try* pass down external arguments to a prejacet property.

<sup>11</sup> We can take this split-*v*P as a specific implementation of a general interface hypothesis which has been called “delayed satisfaction/gratification”, the idea that a given head may introduce arguments to the compositional semantics which are not locally merged in the syntax (Kastner 2020; Myler 2016; Wood 2015).

<sup>12</sup> It is strictly possible that associated motion prefixes are actually a recursive instantiation of *v*, or a Voice head. The former would need to take care to rule out the merging of  $v_{\text{caus}}$  above  $v_{\text{mot}}$ . The latter, associated motion as Voice, is not adopted simply because I have no evidence to postulate identity, but it seems plausible.

Recent and key evidence motivating the particular explosion of  $vP$  used here comes from Hiaki, which has distinct and co-occurring transitivity and passivizing morphology (Harley 2013, 2017). With the assumption that those morphemes correspond to terminal nodes in the syntax, the licensing of an object and the introduction of an external argument must be split into two terminal nodes. Furthermore, the language’s high applicative depends on agentive semantics, but the arguments it introduces are c-commanded by external arguments. These facts underlie the particular split proposed, where the external argument is syntactically introduced by a head distinct from, and above, the head which licenses internal arguments and introduces the semantics of the external argument.

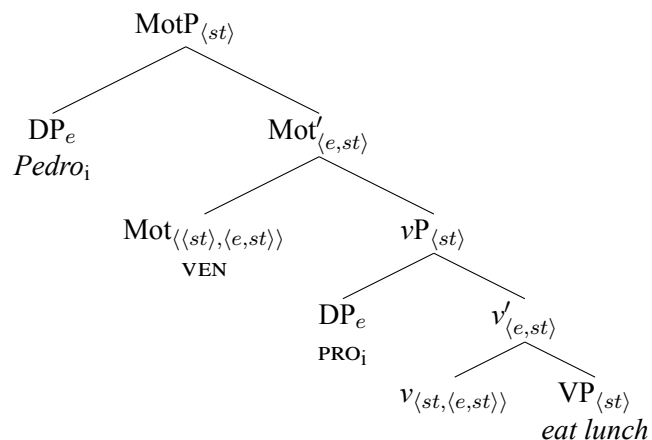
The semantics already previewed above for the motion heads ( $VEN$ ,  $AND$ ) themselves is a combination of the event sequencing demonstrated in (12) and the argument parasitism demonstrated in (13). Composing event sequences between  $vP$  and Voice thus allows a head like  $VEN$  to add an event to an event sequence while identifying arguments of that event with the external argument of its prejacet, our two critical goals in this section. Note that the ungrammaticality of AM derivation of unaccusatives comes for free, by virtue of type mismatch: unaccusative  $vPs$  merge subjects internally, and so are of type  $st$  and unable to furnish the  $\langle e, st \rangle$  argument needed for functional application with AM.

#### 4 Ruling out an alternative: Associated motion does not feature syntactic control

The proposal above uses semantic control to derive the argument identification of associated motion, in the process requiring a few additional assumptions about the roles of various heads in selecting an external argument. Of course, semantic control should be seen in contrast to a more familiar configuration, syntactic control, where two argument positions exist, but are identified by anaphora, or a similar dependency (see Landau 2000). In particular, to apply a simple syntactic control analysis to associated motion would mean to posit an unpronounced  $PRO$  subject in the external argument position of the Goal, related in some manner to the explicit external argument of Motion.

In this approach, we need not split the functions of  $vP$  among multiple heads: we can assume an embedded  $v$  that both introduces a thematic role and syntactically selects for one.<sup>13</sup>

(15) AM as syntactic control



<sup>13</sup> Although note that this wouldn’t constitute any claim against a split- $vP$ : a main component of split- $vP$  proposals is that in many languages, the  $vP$  is not split, but “bundled”. This syntactic control hypothesis could assume SLZ bundles its  $vP$  and VoiceP.



This approach does bring with it a set of syntactic predictions, however. Because of the embedded implicit subject, the explicit subject would no longer be local to the arguments of the Goal. In this section I will show that this consequence is not straightforwardly compatible with so-called ‘backwards binding’ phenomena in SLZ, leading us to reject a syntactic control account.

In the Zapotec ‘backwards binding’ construction, named by Black (1996) and perhaps first noted by Butler (1976), subjects may be left unpronounced when they are co-referent with the possessor of some following argument. When subject and possessor are not identical, it is infelicitous to omit the subject. Butler gives the following example, here given mostly in SLZ orthography.

- (16) Chinə  $\left[ \begin{array}{c} \emptyset \\ \text{POT.comb} \end{array} \right]$  yichj =a'. [Yatzachi Zapotec]  
 head =my  
 ‘I will comb my hair.’ (Butler 1976)

It appears that there is some structural restriction of locality which governs the acceptability of an unpronounced subject in these constructions. Just as Foreman (2006) notes for Macuiltian-guis Zapotec, something blocks the possibility of backwards binding into the highest subject in a motion-plus-infinitive construction from within the infinitival object (17). The matrix subject must be pronounced.

- (17) B-ide  $\left[ \begin{array}{c} *(=ba') \\ \text{COMPL-COME} \\ =3\text{HUM} \end{array} \right]$  we-chib yiche'e lege =ba'nh. [SLZ]  
 INF-CAUS.bare hair =his  
 ‘He<sub>i</sub> came to cut his<sub>i</sub> hair.’ (SLZ5069-039)

But all complex verb constructions do not behave the same in this regard. We see that simple causative subjects are perfectly fine to be omitted under the conditions which allow backwards binding, as are subjects of associated motion.

- (18) a. B-chib  $\left[ \begin{array}{c} (=ba') \\ \text{COMPL-CAUS.bare} \\ =3\text{HUM} \end{array} \right]$  yiche'e lege =ba'nh. [SLZ]  
 hair =his  
 ‘He<sub>i</sub> cut his<sub>i</sub> hair.’ (SLZ5069-035)
- b. B-de-xhube  $\left[ \begin{array}{c} (=ba') \\ \text{COMPL-VEN-pull} \\ =3\text{HUM} \end{array} \right]$  bene' tse =ba'nh.  
 person of =her  
 ‘She<sub>i</sub> came and pulled her<sub>i</sub> husband home.’ (SLZ5069-041)
- c. B-de-chib  $\left[ \begin{array}{c} (=ba') \\ \text{COMPL-VEN-CAUS.bare} \\ =3\text{HUM} \end{array} \right]$  yiche'e lege =ba'nh.  
 hair =his  
 ‘He<sub>i</sub> came and cut his<sub>i</sub> hair.’ (SLZ5069-037)

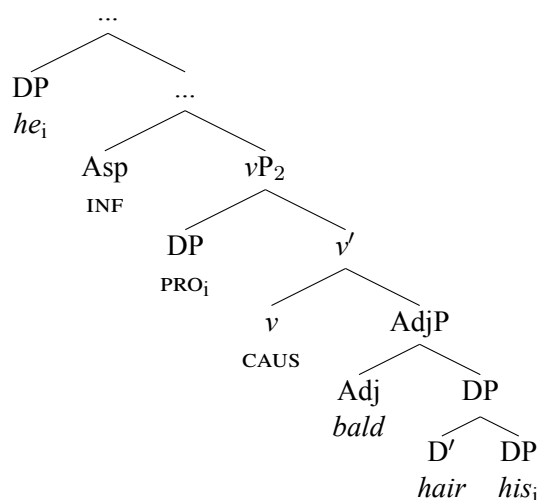
It is apparent that there is some difference in locality between the subject and the object of these two classes of complex verbal expressions, the motion-plus-infinitive on one side, and the associated motion and causative (and their combination) on the other. The particular difference that must hold depends on a complete analysis of backwards binding, which is outside of the scope of this investigation. Nevertheless, I'll show here that for two approaches that we might sketch, a movement analysis and a binding analysis, it would be sufficient to assume that the relevant difference is the existence of an intervening embedded subject position only for the motion-plus-infinitive.

First, consider that the motion-plus-infinitive features measurably larger components than associated motion or the causative. The embedded event is contributed by an infinitival verb associated not only with internal argument positions but also the ability to host unambiguous subject-oriented modification (19), though not negation or aspect marking.

- (19) Wi-ya'a =tsets u-yej Xwanha'. [SLZ]  
 INF-dance =forcefully COMPL-go Juana  
 'Juana went to [dance **forcefully**].'<sup>14</sup> (SLZ5068-031)

If we assume that together with its options for extra modification, this embedded projection includes a subject position, we would arrive at a syntactic control analysis, as sketched in (20).<sup>15</sup>

- (20) MPI as syntactic control



With this structure in mind, both A-movement and binding accounts of backwards binding<sup>16</sup> would derive the impossibility of an unpronounced matrix subject in (20). In an A-movement analysis, as considered by Foreman (2006), assuming that the mechanisms that drive this movement are subject to minimality, and assuming *PRO* contains feature specifications relevant to that movement dependency, *PRO* will intervene and prevent the relevant movement dependency from being established in (20). Foreman (2006) suggests another analysis by which this dependency would be blocked based on the other standard modern locality condition on movement, the Phase Impenetrability Condition, where a *vP* projection with filled subject instantiates a phase boundary which cannot be moved across (Chomsky 1999).<sup>17</sup> A binding analysis, as entertained by Black (1996), can't relate the matrix subject and embedded object if they don't share a binding domain, which seems to

<sup>14</sup> As seen here, in the motion-plus-infinitive construction, modified infinitives front (in other cases to the exclusion of their internal arguments).

<sup>15</sup> Certain non-critical assumptions are made here about the structure of the causative and possession in SLZ, for the sake of illustration.

<sup>16</sup> Any analysis has to explain the 'backwards' component of the construction. A movement analysis could stipulate a parameter to require pronunciation of the lowest copy in a movement chain. A binding analysis would similarly have to flip the typically pronounced member of a binding chain.

<sup>17</sup> Note that it's the *vP* phase which seems to be implicated in particular: infinitives cannot host negation, suggesting they don't contain a *PolP*, and therefore not a *CP* phase given that negation follows *CP* material in SLZ.



## 5.1 The many ways associated motion can compose events

In SLZ, as demonstrated above, we only see one type of event composition in associated motion constructions: akin to bi-eventive causatives, the AM marker accretes a preceding motion event onto the preadjacent event predicate to derive a second, larger event predicate. But as noted above, the world's languages can also include lexical causatives, where this composition happens so low in the structure as to create only one event predicate. If leaning on proposals for causatives is the correct approach for event composition here, we might also expect 'mono-eventive' associated motion.

And indeed, we can find examples even within the Zapotec languages. In Anderson's (2019) description of associated motion in San Lucas Quiaviní Zapotec (SLQZ), a member of the Central Zapotec family which is not mutually intelligible with SLZ, she notes that preadjacent to associated motion cannot independently host adverbial modification. While I'm not aware of where other associated motion constructions fall on this spectrum, the contrast within Zapotec would suggest that variation should be common.

In addition to the structure of the event composition, the current proposal also predicts that in the semantics of associated motion, the particular manner in which the events are related may freely vary. And again, this seems to be correct, because subsequent and concurrent motion are both relatively common. For instance, we can find them even within other Oto-Manguean languages: in fact, the andative marker in Acazolco Otomi (Oto-Pamean; Mexico State) can only mark concurrent motion (21) (Hernández-Green and Palancar 2021). As another example, in Northern Sahaptin (Sahaptian; Northwestern US), a non-deictic associated motion prefix *wɛ·ʔ*- can cover prior, concurrent, and subsequent associated motion (22) (Dryer 2021, citing Jacobs 1931). These kinds of ideosyncratic gaps and underspecification are expected when meaning is left to lexical content.

- (21) 

Ardi
IMPF.AND

*xah-a'ɔ̃.* [Acazolco Otomi]  
 pray-they  
 'They are praying **as they go**.' (Hernández-Green and Palancar 2021:543-544)

- (22) a. I- 

wɛ·ʔ
MOT

 -wi-cabni-ya.  
 3SG- 

wɛ·ʔ
MOT

 -many-ask-PST  
 'He **went and** asked many people.'
- b. I- 

wɛ·ʔ
MOT

 -wina'-utp-a. [N. Sahaptin]  
 3SG- 

wɛ·ʔ
MOT

 -hurriedly-dress-PST  
 'He dressed hurriedly **and went**.'  
 (Jacobs 1931:149)

Ultimately, all of the cross-linguistic flexibility in the sphere of event composition suggests that leaving its specifics to the lexical domain is appropriate. Note that the typology is ultimately not without some systematicity, but it is systematicity that can be explained by independent pressures on lexicalization. For instance, we might lean on cognitive biases to explain why associated motion so regularly marks preceding motion (Guillaume 2016; Ross 2021). A small literature in developmental psychology, exemplified by the work of Lakusta (e.g. Lakusta and Landau 2005, 2012) has shown a general tendency for agentive motion events to be encoded in memory together with their (spatial) goals. It seems as if preceding motion, where the preadjacent takes place at the goal of motion, would be harmonic with this tendency, which may explain the preference for the former.

## 5.2 The few ways associated motion can relate arguments

Unlike the merely lexical approach to event composition, the current proposal derives the argument structure of associated motion sentences in SLZ from a specific structural configuration between the external argument of a clause and a functional projection which can host associated motion. As a result, the typological predictions the account makes in this domain are far more constrained than those discussed above.

And indeed, the typology reveals much less freedom for languages to vary. In the languages with AM profiled by Ross (2021), 80% resemble SLZ: only external arguments may be movers. Among languages where objects may be movers, there is some variation. In several cases, like *MOT* in Northern Sahaptin, the mover’s identity may not be fixed by the grammar at all, merely inferred.

However, there are a small number of languages where object movers are explicitly selected by the use of a particular AM marker, among them Nez Perce (Sahaptian, Northwestern US) (23a) (Ross 2021, citing Aoki 1970) and Tacana (Tacanan, Bolivia) (23b) (Guillaume 2016). Perhaps these languages can merge an AM head such that it intervenes between the verb and an object.<sup>20</sup>

- (23) a. hi-weh- etk -sik [Nez Perce]  
 3-bark- MOT.OBJ.CONC -PRS  
 ‘[The dogs] barked **as we passed by**.’ (Aoki 1970:95)
- b. Miwa- tsu -ta-iti-a mesa kupari. [Tacana]  
 feed- VEN.PRE.OBJ -3-PFV-PST he compadre  
 ‘He fed his compadre<sub>i</sub> **after he<sub>i</sub> arrived**.’ (Guillaume 2016:165)

Nevertheless, I know of no cases where a single AM marker can unambiguously select arguments in different sentences that are not in the same structural configuration. Such constraints appear to be in line with a proposal where argument-structural composition is configurationally, rather than lexically determined.

## 5.3 Summary

In this paper, I have provided an account for the compositional semantics of associated motion in SLZ. The composition of a meta-event from two sub-events and argument identification without multiple clauses are captured using structural configurations which have been deployed for more familiar constructions in natural language to achieve event composition and argument identification. If this approach proves correct, it helps fill in the gap in Table 1, and we are saved from the puzzling conclusion that event-composing morphology is incompatible with argument identification.

But puzzles remain. For instance, if the tools of semantic composition considered here permit us to compose chains of events in which the same individual participates, why do we see this pattern with associated motion alone? The answer likely lies in better understanding event and argument composition, and I hope that by situating associated motion among the existing work on these topics, this paper will enable progress in this direction. Our understanding of events and arguments has been heavily influenced by a only a subset of what language can do. By looking elsewhere for insight, we can significantly enrich our theories.

<sup>20</sup> Alternately, it may be that these are not lexical internal arguments, as they do seem to regularly be experiencers and beneficiaries (Ross 2021). Perhaps AM cannot intervene between a verb and its true internal arguments, but only those objects which are introduced by (implicit) applicative structures.

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