

Yucatec Maya preverbs and the semantic typology of adverbs*

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1. Introduction

Cross-linguistically, we think of adverbs as a very flexible class, albeit one which has certain prototypical characteristics. It is perhaps unclear if any of these are necessary or sufficient conditions for category membership, or indeed if “adverb” is ultimately a well-defined category either within a language or across languages, but nonetheless we may associate it with a set of characteristic properties. Morphologically, they may have characteristic marking such as English *-ly* and Spanish *-mente* that derive adverbs from members of other categories, most typically adjectives. Syntactically, they are noted for their high degree of flexibility, occurring in various positions structurally and/or linearly, even in languages like English which ordinarily have fairly rigid word order. Semantically, they denote modifiers of different kinds, providing non-essential information about an extremely heterogeneous range of attributes of events, propositions, or speech acts including their manner, place and time, and the domain within which they are applicable, among many others. For example, (1) illustrates these core properties for English and Spanish respectively.

- (1) a. **(Happily,)** Floyd would **(happily)** play the tuba **(happily)**.
b. **(Cuidadosamente,)** Mario escribió **(cuidadosamente)** la carta **(cuidadosamente)**.

In Yucatec Maya (YM), we can similarly identify a class of adverbs with comparable morphological, syntactic, and semantic properties. These adverbs often have a characteristic derivational suffix, *-il*. Syntactically, they are quite flexible as seen in (2), occurring as preverbal topics, (2a), and foci, (2b), as well as in a range of postverbal positions, (2c). We

*Our heartfelt thanks to Miguel Oscar Chan Dzul and Luis Erasto Cahum Balam for extensive discussion about the data and ideas in this presentation. Thanks as well to José Enrique Can Hau, Alexis Guadalupe Cauich Batun, Leidy María Couoh Pomol, and Wendy Yadira Chan Ek for their good will and careful work as consultants. Thanks also to reviewers and audience members at SULA 12 and FAMLi 6, for helpful discussion of aspects of the data and analysis here.

return to consider their semantics in the conclusion, but broadly speaking they are flexible in familiar ways.

- (2) a. **Ju**jump'útil=e' k-u wéek-el ja'.
 bit.by.bit=TOP HAB-A3 spill-ITV.INC water
 'Bit by bit, the water spills.' **Topic**
- b. **Ju**jump'útil (k)-u wéek-el ja'.
 bit.by.bit HAB-A3 spill-ITV.INC water
 'It is bit by bit that the water spills.' **Focus**
- c. K-u wéek-el ja' **ju**jump'útil.
 HAB-A3 spill-ITV.INC water bit.by.bit
 'The water spills bit by bit.' **Postverbal**

In addition to adverbs in the above sense, however, in recent work (AnderBois et al. (2021)) we have identified in YM a class of elements which we have dubbed 'preverbs'.¹ Syntactically, we have shown that they are restricted to immediately preverbal positions and lack the characteristic *-il* suffix. This work further shows that they are syntactically distinct from compound and incorporation constructions with which they have previously been lumped together. We see several examples in (3):

- (3) a. K-a **jáan** p'o'-ik in nook'.
 HAB-A2SG fast wash-TR.INC A1SG clothes
 'You wash my clothes quickly.'
- b. Yaan in **ka'a** pak'-ik le ixi'im=o'.
 OBL A1SG again plant-TR.INC DEF corn=DIST
 'I will re-plant my corn.'
- c. Táan u **túutus** wen-el.
 PROG A3 pretend sleep-ITV.INC
 'She is play-sleeping.' (Sp. 'Está durmiendo de mentira.')

In this paper, we build on these morphosyntactic results to make two semantic arguments. First, preverbs are semantically restricted in a way adverbs in YM and other languages are not, only having "verb-related" meanings in the adverbial classification of Maienborn and Schäfer (2011). Second, the scope-taking and other properties of preverbs argue against an approach treating *all* preverbs as event modifiers, following Schäfer's (2008) work on German.

The remainder of the paper is structured as follows: §2 presents background on the language and the morphosyntactic properties identified by AnderBois et al. (2021) to dis-

¹While the term 'preverb' is used in a number of different languages, we caution that there appears to be a substantial amount of heterogeneity in the items to which the term is applied. Despite these differences among 'preverbs' in different languages, this nonetheless seems the most apt existing term.

tinguish preverbs from adverbs, compounding, and incorporation; §3 argues that preverbs are semantically restricted to manner-like meanings, including case studies of apparent counterexamples; §4 explores examples with scope-taking preverbs, sketching an analysis of two different kinds of preverbs, building on Schäfer's (2008) account of English and German manner adverbs; and §5 concludes with a brief consideration of possible implications for YM adverbs.

2. Formally distinguishing preverbs

In this section, we provide background on Yucatec Maya, §2.1, and review arguments that identify preverbs as a distinct syntactic class, §2.2.

2.1 Language background and data sources

Yucatec Maya is one of 30 languages in the Mayan family, spoken by $\approx 850,000$ speakers per government statistics. While bilingualism with Spanish is quite common, the language is widely spoken as a first language throughout the Mexican states of Campeche, Quintana Roo, and especially Yucatán. The language is strongest in rural areas. Despite the large numbers of speakers relative to most indigenous languages, rates of intergenerational transmission are starting to decline in recent decades and so while not endangered in the typical sense, the long term prospects for the language's vitality across social contexts are somewhat mixed.

Data in this talk comes from a mix of corpus examples and elicitations with 4 native speakers, occasionally supplemented with introspection by the third author alphabetically. Some individual lexical items showed a decent amount of individual variation in their acceptability in preverbal position; most did not.² The overall patterns described here were nonetheless quite consistent.

2.2 Preverbs within the verbal complex

YM is a head marking language with VOS basic word order and the verbal complex schematized in (4). Arguments and most modifiers (viz. adverbs) occur outside the verbal complex, either in preverbal topic or focus positions, or in postverbal position. It has split ergative alignment conditioned by overt aspect/modal markers. Following common practice among Mayanists, we use the labels Set A \approx ERG/NOM/GEN and Set B \approx ABS/ACC to gloss these.

(4) ASP-SETA-root-suffixes-SETB

Whereas adverbs occur outside the verbal complex as we saw in (2), preverbs occupy a fixed position between Set A and the verb root:

²For example, we found corpus examples with apparent preverbs *asab*, *che'*, *óol*, that our consultants found questionable or outright bad to varying degrees.

- (5) a. Táan k **múul** páan-ik le lu'um=o'.
 PROG A1PL in a group dig-TR.INC DEF earth=DIST
 'We are digging the earth in a group.'
- b. *Táan k páan-ik **múul** le lu'um=o'.
 PROG A1PL dig-TR.INC in a group DEF earth=DIST
 Intended: 'We are digging the earth in a group.'

An interesting point of contrast to preverbs are discourse particles/clitics such as reportative *bin*, mirative *bakáan*, and additive *xan* (see (AnderBois 2022:239–241) for recent description of these particles). Although discourse particles are generally even more flexible than adverbs (6), they cannot occur in the immediately preverbal position either, (7).

- (6) Ma' (bin) t-u máan-s-aj (bin) u examen (bin) Carmen (bin)-i'.
 NEG (REP) PFV-A3 pass-CAUS-TR.CMPL (REP) A3 exam (REP) Carmen (REP)-NEG.CL
 'Carmen didn't pass the exam (they say).'
- (7) *Juan=e' t-u bin/bakáan p'at-aj je'ek'-a'an le puerta'=o'.
 Juan=TOP PFV-A3 REP/MIR leave-TR.CMPL open-ADJ DEF door=DIST
 Intended: 'Juan reportedly/surprisingly left the door open.'

Outside of preverbs, incorporation and V-V compounding are the only cases in which morphemes may intervene between Set A markers and verb roots in YM. This fact has led previous authors such as Sullivan (1984), Gutiérrez-Bravo (2002), and Petatillo-Chan (2020) to regard preverbs as instances of these processes. However, in AnderBois et al. (2021), we show in detail that preverbs are distinct from V-V compounding and incorporation based on several lines of evidence. For reasons of space, we give only a brief sense of these arguments, referring the reader to works cited above for data and detailed argumentation. First, whereas these processes interact with verb classes to trigger changes in verbal suffixes, preverbs do not. Second, preverbs can be plainly shown to be grammaticalized as such, yet related to many different lexical categories, not just verbs and nouns, the sole categories implicated in V-V compounding and incorporation respectively. One related observation that will be important below is that more than one preverb is possible within a verbal complex:

- (8) a. T-u **ka'a láaj** jaan-t-aj.
 PFV-A3 again all eat-APPL-TR.CMPL
 'S/he ate it all again.'
- b. T-in **utsil ki'ki'** meet-aj le chachaak waaj=o'.
 PFV-A1 well just.so make-TR.CMPL DEF tamale.type=DIST
 'S/he made the chachaak waajs (a kind of tamale) well.'

To summarize, YM preverbs represent a distinct lexical category with different morphosyntactic properties than adverbs and other superficially similar phenomena within the language.

3. Semantic constraints on preverbs

In this section, we show that this distinct morphosyntactic category has semantic restrictions compared to adverbs, first by surveying a range of preverbs, §3.1, and then by considering several case studies of potential counterexamples, §3.2.

3.1 The semantic typology of adverbs

While previous literature has noted the existence of preverbs, outside of our related work (AnderBois et al. 2021), the size and breadth of the category has gone underappreciated. While there is inter-speaker variation on a few items, we have identified a list of at least 40 confirmed preverbs.³ Informally, these can be described as belonging to the semantic categories in (9–10). The precise inventory of categories and the membership of different preverbs in these categories are not definitive, but aim to give a general sense of the range of attested meanings.

(9) Manner

- a. **Compulsive** – with sudden starts and/or without apparent control: *jan* ‘suddenly’, *séeb* ‘quickly’, *téek* ‘abruptly’, *chich* ‘strongly/quickly’, *k’anaj* ‘in a hurry’
- b. **Distributive** – distributed over the object(s) (cf. Ernst 2004): *lájaj* ‘completely’, *túul* ‘entirely’
- c. **Integrative** – including various individuals in a configuration: *múul* ‘together’, *múuch* ‘in a group’, *túul* ‘completely’, *much* ‘reciprocally’, *jóol* ‘totally’, *pak-lam* ‘in a group’
- d. **Pure manner** – in a particular way or with a particular mindset (cf. Ernst (2007)): *ki* ‘rich/tasty’, *k’as* ‘half’, *tuutus* ‘pretend, fake’, *k’anaj* ‘in a hurry’, *noj* ‘big/important’, *baj* ‘just so’, *pach* ‘hesitantly’, *ma’alob* ‘well’, *nonoj* ‘jokingly’, *chéen* ‘simply, just’, *yáax* ‘pre-’

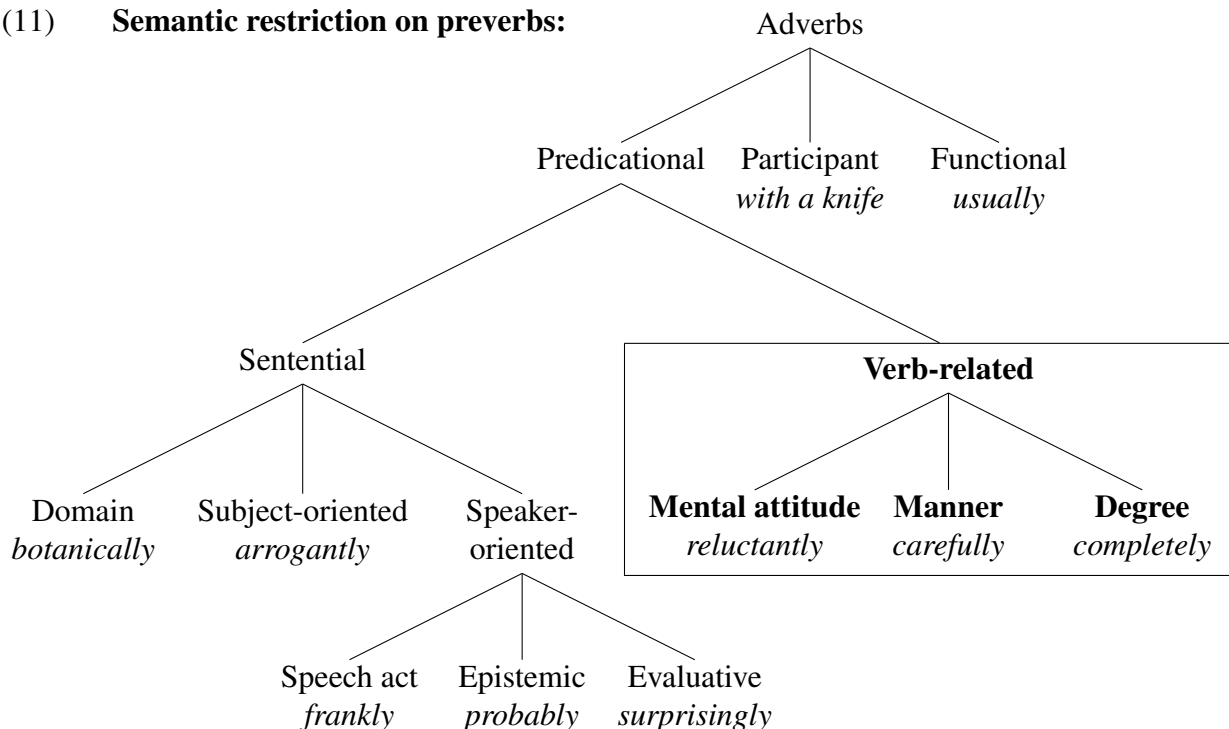
³In some cases, this variation is in whether the morpheme is used at all (e.g., *asab* ‘more’). In others, it’s whether it can be used specifically between Set A and the verb, as opposed to as an adverb or non-verbal predicate (e.g., *téek* ‘quickly’). In yet others, there is variation in the precise preverb form (e.g., reduplicated vs. simplex). Finally, in other cases, there is variation in whether the preverb in fact patterns differently from compounding and incorporation per the morphological diagnostics of AnderBois et al. (2021) (e.g., *chich* ‘strongly’). This latter fact highlights the presumed diachronic source of these preverbs and the recent/ongoing nature of their grammaticalization.

(10) **Degree**

- a. **Intensity** – extent or intensity with which the action is realized (cf. Maienborn and Schäfer (2011)): *k'a'am* ‘strongly’, *k'anaj* ‘hurriedly’, *sen* ‘much’, *senkech* ‘much’, *jach* ‘suddenly’
- b. **Iterative** – degree/kind of repetition of the action: *papa* ‘over and over’, *babaj* ‘over and over’, *xanxan* ‘over a long period’, *ka'a* ‘again’
- c. **Durative** – duration or amount of the event: *chaambel* ‘slowly’, *chan* ‘a little bit’, *xaan* ‘slowly, delayedly’, *chéen* ‘just’, *jets* ‘careful’...

Conversely, many kinds of adverbial meanings found in other languages are not attested for preverbs. These include adverbs in the categories of domain, *botanically*; speech act, *frankly*; epistemic, *probably*; evaluative, *surprisingly*; participant, *with a knife*; and spatiotemporal, *yesterday*. Drawing on Maienborn and Schäfer’s (2011) categorization of adverbs, we therefore propose that YM preverbs are limited to the category of adverbs that they describe as ‘verb-related’:

(11) **Semantic restriction on preverbs:**



This categorization relies on several subtle distinctions that we unpack via the case studies in §3.2 momentarily. For now, we simply note that this generalization is in a certain sense not so surprising. Cross-linguistically, the literature on adverbs has long noted a connection between syntactic position and the interpretation of adverbs. Since preverbs occur only in a position quite close to the verb, the semantic restriction here is presumed to be a principled one. We also find some precedents in other unrelated languages. One especially close parallel is Slavin (2012), who shows in detail that Ojicree (Algonquian) preverbs in-

Category distinctions like those made by Maienborn and Schäfer (2011) are often subtle, so we present a few case studies of apparent counterexamples to support and clarify the generalization. This is also important since as noted above, preverbs are overwhelmingly grammaticalized from lexical elements of other categories (i.e., outside the verbal complex) that in some cases clearly have meanings which are not ‘verb-related’ in those positions.

Among the most frequent preverbs in YM is *chéén*. In addition to the preverb *chéén*, there is also a (historically related) morpheme *chéén* used outside the verbal complex, immediately prior to the preverbal focus slot. Here, it functions as a focus-sensitive operator with a meaning similar to English ‘just’ or ‘only’, as in (12).

- Crucially, in (12), we see that *chéen* has the meaning of a functional/quantificational adverb, not one from the verb-related class. Similar to English *just* or *only*, *chéen* in this use quantifies over the focus alternatives to the stated one, here *soopa* ‘soup’, asserting that it holds and that its alternatives do not. However, looking at *chéen* in preverb position, we find a meaning more like ‘casually’ or ‘simply’:⁴

- That is to say, in its preverb use, *chéen* indicates the manner of eating, perhaps carelessly or at least without deliberation, rather than a meaning quantifying over events of eating. One illustration of this is the following contrast in exhaustivity entailments:

- ⁴N.B. the adverb *just* in English shows a similar sort of polyfunctionality. Another complication we set aside here is that *chéén*—apparently like *just*, but unlike *only*—is only optionally focus-sensitive. As case studies, we leave it to future work to provide a more detailed investigation of each individual morpheme.

- b. Beto=e' soopa k-u **chéen** jan-t-ik. Bey-xan taako.
 Beto=TOP soup HAB-A3 simply eat-APPL-TR.INC like.that-ALSO taco
 'Beto simply eats soup. And also tacos.'

To summarize, we find that although there is a homophonous element with non-verb-related uses outside the verbal complex, *chéen* in preverb position is a manner adverb.

3.2.2 Case study 2: *múul*, *múuch* 'in a group, together'

Apart from their use as preverbs, the roots *múul* and *múuch* have uses across a diverse range of syntactic categories with related meanings: 'hill', 'group', 'pile up', 'agglomerate', 'join' etc. In their use as a preverb, both morphemes indicate an action realized in a group:

- (15) J **múul** kuuch-n-aj-en (t-a wéet-el).
 PFV gather carry-ANTIP-ITV.CMPL-B1SG (PREP-A2SG companion-REL)
 'I carried in a group.' AnderBois and Armstrong (2016)

At first blush from the translation, these uses appear to be participant modifiers and therefore not verb-related. Maienborn and Schäfer (2011) describe participant adverbs as introducing "a new participant that takes part in the eventuality described by the verb... linked to the verb's eventuality argument through a thematic role just like standard agent or patient arguments." However, AnderBois and Armstrong (2016) show that the inclusion of *múul* does not in fact affect argument structure, as seen in (16). First, it doesn't change the subject for the purposes of control (control in YM is complete, not partial). Second, it doesn't saturate a comitative argument, as evidenced by the felicity with an optional comitative PP.

- (16) In k'áat **múul** kuuch-Ø (t-a wéet-el).
 A1sg want gather carry-ITV.INCMPL (PREP-A2sg companion-REL)
 'I wanted to carry in a group (with you).' AnderBois and Armstrong (2016)

To summarize, *múul* and *múuch* express that the event happened in a group or team manner (cf. English *gang* as in *the offensive line gang-tackled the running back*), but without affecting thematic structure. We therefore conclude it has a verb-related meaning, rather than a participant one.

3.2.3 Case study 3: *ts'úik* 'bravely, aggressively'

Another preverb whose gloss suggests it to potentially not be 'verb-related' is *ts'úik* 'bravely, aggressively'. In particular, from these translations, it appears to potentially be subject-oriented. A closer look, however, shows this to instead belong to the 'mental attitude' category of verb-related adverb meanings. The distinction is a subtle one, especially given the polyfunctionality of English adverbs. Maienborn and Schäfer (2011) characterize men-

tal attitude adverbs as descriptions of “the attitude of the agent with regard to the activity described by the verbal predicate”. Subject-oriented adverbs, on the other hand, “assign a specific property to the agent, based on the action as described by the proposition expressed by the sentential base.” However, we see that in preverb position, in (17a), the interpretation concerns the manner rather than an overall assessment of the subject’s bravery or aggressiveness. The unmarked way to express the latter meaning, in (17b), is to use the homophonous non-verbal predicate *ts’iik* ‘brave, aggressive’. In this case, the non-verbal predicate precedes the AM marker, *úuch*, taking the whole rest of sentence as its argument.

- (17) a. ***Ts’iik* as preverb**
 Úuch u **ts’iik** náats’-al.
 REM.PAST A3 bravely approach-ITV.INCMPL
 ‘He approached bravely/aggressively (the manner was brave/aggressive).’
- b. ***Ts’iik* as non-verbal predicate**
Ts’iik úuch u náats’-al.
 bravely REM.PAST A3 approach-ITV.INCMPL
 ‘It was brave that he approached (the fact that he approached was brave).’

To summarize, although the gloss appears potentially subject-oriented, we have argued that as a preverb, *ts’iik* has a semantics relating of manner/mental attitude and therefore is also in the verb-related class.

4. Two kinds of manner modifiers

A common approach to adverb semantics dating to Davidson’s (1967) work on English treats many of them as event modifiers. Such an approach is motivated in part by diamond entailment patterns as in (18), from Morzycki (2016):

- (18) a.
$$\left[\left[\text{Jones buttered the toast in the bathroom with the knife at midnight.} \right] \right]$$

$$= \exists e \left[\text{buttered}(\text{the-toast})(\text{Jones})(e) \wedge \right.$$

$$\left. \text{in}(\text{the-bathroom})(e) \wedge \text{with}(\text{the-knife})(e) \wedge \text{at-midnight}(e) \right]$$
- b.

Such an approach therefore makes a strong prediction: examples with multiple manner adverbs ought to always have conjunctive truth-conditions. We turn now to examine such sentences in §4.1, showing that while they often do so, there are cases where they take scope with respect to one another.

4.1 Clauses with multiple preverbs

Despite the appealing uniformity of the Davidsonian approach, Schäfer (2008) and references therein argue that data from English (and German) suggest that things are not so simple. Of particular note are examples with two manner adverbs in which one scopes over the other:

- (19) a. Hans skillfully answered the questions stupidly. (Frey 2003)
 (*skillfully* > *stupidly*)
 b. John painstakingly wrote illegibly. (Parsons 1990)
 (*painstakingly* > *illegibly*)

Rather than conjunctive truth conditions, the first of the two adverbs takes scope over the second. (19a) suggests a scenario in which Hans perpetrated a ruse in which it took great skill to answer in a stupid manner. (19b) similarly suggests a scenario in which John labored over the task of writing illegibly, for example, in order to forge the signature of someone with messy handwriting. We can of course also note that the acceptability of such sentences in the first place is unexpected on a conjunctive semantics, given the seemingly contradictory meanings of the two. For YM preverbs, we can find similar pairs in which the first of the two preverbs, here, *ts'íik* 'aggressively' scopes over the second, *tuutuus* 'pretend, play-'.

- (20) a. T-u ts'íik tuutuus jan-t-aj.
 PFV-A3 aggressive fake eat-APPL-TR.CMPL
 'He aggressively play-ate it.' (ts'íik > tuutuus)
 b. T-u tuutuus ts'íik jan-t-aj.
 PFV-A3 fake aggressive eat-APPL-TR.CMPL
 'He pretended to eat it in an aggressive manner.' (ts'íik > tuutuus)

Similar to arguments by Schäfer (2008) and others, we claim that such data argue against treating both preverbs as event modifiers. Beyond scope, there are at least two other pieces of data suggesting that we need to distinguish two types of preverbs. First, while some sequences of preverbs appear to exhibit flexible ordering relative to one another, some combinations require a particular order to be grammatical:

- (21) a. Táan u chan papa' lox-ik.
 PROG A3 a.bit over.and.over hit-TR.INC
 'S/he is hitting it lightly over and over (all at once).' (chan > papa')

- b. *Táan u papa' chan loxik. (*papa' > chan)

Second, some preverbs appear to exhibit interactions with the direct object. Simplifying⁵ slightly, *lájaj* 'all, completely' requires a plural internal argument:

- (22) a. **Context:** There is a door that was closed completely.
 #T-u **lájaj** k'al-aj le puerta=o'.
 PFV-A3 all close-TR.CMPL DEF door=DIST
 Intended: 'S/he closed the door completely.' **#Singular object**
- b. **Context:** There are various doors that were closed.
 T-u **lájaj** k'al-aj le puerta=o'.
 PFV-A3 all close-TR.CMPL DEF door=DIST
 'S/he closed all the doors.' **Plural object**

Moreover, this property appears to be related to the relative order of preverbs:

- (23) a. ??T-u **séeb láaj** meen-t-aj.
 PFV-A3 fast all do-APPL-TR.CMPL
 Intended: 'S/he finished them all quickly.'
- b. T-u **lájaj séeb** meen-t-aj.
 PFV-A3 all fast hacer-APPL-TR.CMPL
 'S/he finished them all quickly.'

Taken together, the apparent correlations in scope, linear order, and interactions with the direct object argue for a division between two subclasses of preverbs based on their formal and semantic properties.⁶

⁵In addition to a plural object, *lájaj* also accepts a singular direct object with a plurality of parts:

- (i) T-u **lájaj** sel-aankil a wíinkil-il bey=a'.
 PROG-A3 all peel-AFF A2 body-REL like.that=PROX
 'His whole body is peeling like that (from sunburn).' **Object with parts**
<https://yucatecmaya.github.io/LingView/#/story/21047806-1864-420f-9d68-538acfd2055c?82324>

We leave it to future work to conduct a detailed analysis of such cases. The important thing here is the interaction with the direct object.

⁶One apparent preverb of interest according to the morphosyntactic diagnostics in §3 is pluractional reduplication of the verb root. Semantically, Yu (2021) argues that this morpheme contributes event-internal pluractionality (in contrast to the suffix *-laj*). It can only occur adjacent to the verb and so appears to be Type 2. However, event-internal pluractionality is often still modeled as an event modifier (e.g., by Henderson 2012). At the same time, this may not be a necessary step (e.g., Henderson argues that event-internal pluractionals combine directly with verbal roots) and there may also simply be phonological reasons for its linear order given its reduplicative form.

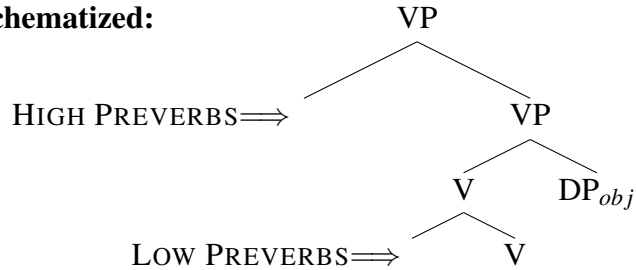
- (24) **High preverbs:** *láj* ‘all’, *chan* ‘a bit’, *ts’ík* ‘aggressively’, *tuutus* ‘fake’...
- Take wide scope relative to low preverbs
 - Precede low preverbs in linear order
 - May interact with direct object (but need not)
- (25) **Low preverbs:** *papa* ‘many times all at once’, *ts’ík* ‘aggressively’, *tuutus* ‘fake, pretend’, *chaambel* ‘slowly’...
- Take narrow scope relative to high preverbs
 - Closer to the verb than high preverbs
 - Cannot interact with direct object

While some preverbs may seemingly only occur in one of the two uses (e.g., *láj* ‘all’ above is only high), many can be used in either way, such as *tuutus* ‘fake, pretend’ and *ts’ík* ‘aggressively’ above, similar to what has been claimed for English and German.

4.2 Towards a formal analysis

Thus far, we have argued for the need for two subtypes of preverbs, high and low. One way to capture this distinction (and scope-taking uses with it) is by assuming that the two types modify different constituents, with correspondingly distinct semantics (broadly following McConnell-Ginet 1982 and especially Schäfer 2008). Specifically, we suggest the picture schematized in (26). High preverbs are predicates of *events*, modifying VPs, while low preverbs are predicates of *manners*, modifying the manner argument of the V itself.

- (26) **Two types of preverbs schematized:**



A bit more formally, we treat high preverbs as event modifiers in the familiar (neo-)Davidsonian mold:

- (27) **Lexical entry for a High Preverb:**
tuutus $\rightsquigarrow \lambda P \lambda e. [P(e) \wedge play(e)]$

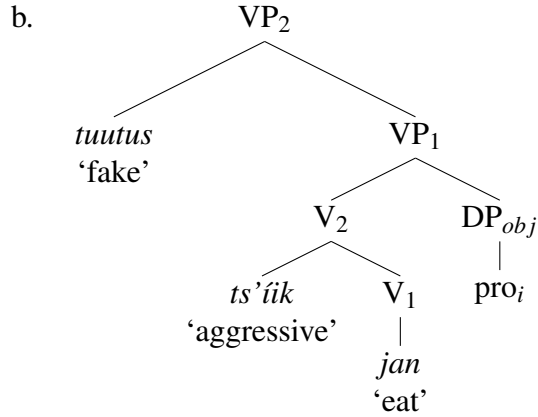
For low preverbs, we follow Schäfer 2008, Alexeyenko 2012, and references therein in taking manners to be an ontological primitive. Under such a view, low preverbs can then be thought of as predicates of manners (most closely following Schäfer 2008) as sketched in (28). We abstract over compositional details here such as how arguments are incorporated, aspect, etc. See the aforementioned works on German and English for further details.

(28) **Lexical entry for Low Preverb:**

$ts'íik \rightsquigarrow \lambda P.\lambda e[P(e) \wedge \exists m[\text{MANNER}(m, e) \wedge \text{aggressive}(m)]]$

Finally, we follow Schäfer (2008) in adopting Eckardt's (1998) "Big event" approach by assuming a VP/V'-level operator relates a big event to smaller component sub-events. Putting these together, we arrive at the following derivation for (29a):

- (29) a. T-u tuutus ts'íik jan-t-aj.
 PFV-A3 fake aggressive eat-APPL-TR.CMPL
 'He fake aggressively ate it.'



- c. $\exists e*[\text{AGENT}(x, e*) \wedge \exists e[\text{PART_OF}(e, e*) \wedge \text{eat}(e, y) \wedge \exists m[\text{MANNER}(m, e) \wedge \text{aggressive}(m)] \wedge \text{play}(e*)]]$

Returning to our above observations, this formula captures the scope facts in the same way as Schäfer (2008), differing in that we see it reflected more directly here in linear order/syntax, given the more rigid properties of YM preverbs. The height of attachment of the high preverbs ensures that only they have access to the direct object. We leave it to future work to flesh out this approach more fully across different individual preverbs, including the extension to degree ones, which while generally thought to pattern with manner adverbs, of course also have important differences.

5. Conclusions

In this paper, we have argued that the independently syntactically distinct class of preverbs identified by AnderBois et al. (2021) is semantically restricted to 'verb-related' adverbial meanings. We have further argued that two subtypes of preverbs can be distinguished—though many lexical items can be used in either way—and have sketched a direction for their formal analyses. Having seen a class of adverb-like elements limited to occur adjacent to the verb, we might well wonder if this has implications for other sorts of adverbs in YM. One potential such case concerns subject-oriented and speaker-oriented adverbs. It has long been observed (cf. Morzycki 2016 and references therein) that these categories of

adverbs are typically lexically or morphologically related to manner adverbs. In English, for example, syntactic position distinguishes manner and other uses of many adverbs:

- (30) a. Stupidly, Fatima left. **Subject-oriented**
 ≈ ‘The fact Fatima left was stupid (compared with other things she might have done).’
 b. Fatima left stupidly. **Manner**
 ≈ ‘The way that Fatima left was stupid (compared with other ways she might have left)’
- (31) a. Frankly, she spoke to him already. **Speaker-oriented**
 ≈ ‘I am telling you in a frank manner that she spoke to him already.’
 b. She already spoke frankly to him. **Manner**
 ≈ ‘The manner in which she already spoke to him was frank.’

In YM, however, as far as we can tell, we do not see such polyfunctionality. There do not seem to be any subject-oriented or speaker-oriented adverbs. Instead we find the use of complex phrasal adverbial expressions, multiclausal expressions with adverbs modifying the embedding verb, and in place of subject-oriented adverbs, non-verbal predicates with a propositional argument, as in (17b), repeated as (32). To speculate a bit, if these higher adverbial uses in English are derived from movement of manner adverbs to higher positions, one can imagine that the restriction of preverbs low inside the verbal complex prevents this.

- (32) Ts’íik úuch u náats’-al.
 bravely REM.PAST A3 approach-ITV.INCMPL
 ‘It was brave that he approached. (the fact that he approached was brave)’

Setting aside potential implications for the typology of adverbs themselves, we have seen that classifications of adverbs devised on the basis of Indo-European languages have found confirmation in an unrelated language, Yucatec Maya. While the category of ‘adverb’ broadly poses analytical challenges due to its syntactic and semantic flexibility, we have seen that a corner of this space – preverbs in Yucatec Maya – appears more orderly, being limited to verb-related meanings.

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