Decomposing Path: Deprepositional Verbs in White Hmong

William Johnston

1. Introduction

This paper investigates the syntactic category of so-called "path predicates" in White Hmong (Hmong-Mien), a class of predicates which appear to have both verbal and prepositional uses (Clark 1979, Jarkey 2015, Johnston 2024). These are found in four main environments: as the main predicate of the clause, as head of the complement of a manner-of-motion verb, as head of the complement of a transfer verb (i.e., a verb of *sending*), or as the head of an outer locative or temporal adjunct. These four uses are illustrated (using the predicate *mus* 'go, to') in (1–4), respectively.

(1) kuv **mus** tajlaj *Main verb*
1SG **go** market
'I went to the market.'

(2) kuv khiav [**mus** tajlaj] *Manner-of-motion construction*
1SG run **to** market
'I ran to the market.'

(3) kuv txib Sua [**mus** tajlaj] *Caused motion construction*
1SG dispatch Shoua **to** market
'I sent Shoua to the market.'

(4) peb nyob tom [**mus** thaum peb tshaib plab] *Adjunct*
1PL stay here [**to** time 1PL be(come).hungry stomach]
'We'll stay here until we're hungry.'

The descriptive literature has characterized Hmong path predicates first and foremost as verbs—that is, the "main verb" use in (1) is taken to be the default, with the uses in (2–3) derived by verb serialization and the use in (4) derived by some unspecified synchronic derivational process (Clark 1979, Jarkey 2015).

In contrast, I argue that these predicates are underlyingly prepositional—not only in those environments like (2–4) in which there is a distinct main verb present in the derivation, but also when the path predicate serves as the main verb itself as in (1). In cases like (2–4), I claim that the path predicate simply remains *in situ* within the prepositional complement of the verb, while in cases like (1), I claim that the path predicate functions as a deprepositional verb.

This paper is organized as follows. Section 2 reviews the basic properties and distribution of Hmong path predicates. Section 3 presents two key categorial diagnostics: complex path descriptions in Hmong (i.e., those containing two or more path predicates) must obey two co-occurrence restrictions consistent with Pantcheva's (2011) decompositional analyses of the (prepositional) Path domain. (The argumentation in this section follows Johnston 2024.) Section 4 presents a syntactic analysis of this behavior, in which Hmong path predicates lexicalize a *span* that may include both verbal and prepositional heads (Svenonius

* William Johnston, McGill University, william.johnston4@mail.mcgill.ca. All uncited examples are from elicitation with native speakers of White Hmong, and all examples are presented in the Hmong Romanized Popular Alphabet (RPA) orthography (in which apparent "coda consonants" represent tones). Thank you to Ka Lee-Paine and Sy Moua for sharing their knowledge of Hmong with me, and thank you to Marie-Thérèse Jasperson, Bee Vang-Moua, and Neng Vang for discussion and additional examples. Any remaining errors are my own. Thank you as well to the anonymous reviewers and to the poster session attendees at WCCFL 42 for their questions and comments.

2016). Both the size of this span and the broader syntactic environment play a role in deriving the contrasts between (1–4). Section 5 focuses on the cross-linguistic applicability of this proposal.

2. Path predicates

As already mentioned, Hmong path predicates generally appear across the four main environments shown in (1–4). However, the distribution of particular predicates is not identical. Path predicates are a heterogeneous group, comprising several sub-classes which differ from one another in paradigmatic ways. At least four sub-types can be defined, which I label mnemonically according to the type of path they describe: Goal, Source, Route, and Transition.

Goal predicates describe motion towards a particular location. That is, when a predicate like *mus* 'go, to' in (2), reprinted below, combines with a GROUND, the GROUND is understood as the endpoint of the resulting path.

(2) kuv khiav [**mus** tajlaj]
1SG run **to** market
'I ran to the market.'

Source predicates describe motion away from a particular location. That is, a predicate like *tawm* 'leave' in (5) combines with a GROUND that describes the origin of the resulting path.

(5) kuv **tawm** tsev mus
1SG leave home away
'I left home.'

Route predicates describe motion through, along, or past a particular location. The GROUND of a Route predicate either describes the entire range the path traverses, or it describes a landmark somewhere between the two endpoints of the path, depending on the path predicate and in certain cases on the context of utterance.

(6) kuv **hla** tus choj
1SG cross CLF bridge
'I crossed the bridge.'

Transition predicates, like Goal predicates, describe motion oriented towards a particular location—but unlike Goal predicates, these entail that the endpoint of the path is reached (that is, that the path is *bounded* in the sense of Zwarts 2005). This class is mentioned here for completeness, but will not be of primary importance in this paper.[1]

(7) kuv **txog** tom tajlaj
1SG arrive DEM market
'I got to that market.'

Although examples (1–4) all involve the Goal predicate *mus* 'go, to', path predicates of all four types are found across all four environments.[2] And importantly, a path predicate is required in order to derive the directed motion meaning. Omitting the path predicate from (2), for example, results in (8), which contains only the manner-of-motion predicate *khiav* 'run'. This example cannot be understood to describe motion to/from a location.

(8) kuv khiav tajlaj
1SG run market
'I ran about at the market.'

[1] On the boundedness entailment of Transition predicates, see Johnston forthcoming.
[2] With one exception: Route predicates are not attested in outer locative/temporal adjuncts like (4).

In the descriptive literature on Hmong, path predicates have been treated first and foremost as verbs. Simple sentences like (1) are taken (tacitly or explicitly) as evidence that path predicates are fundamentally verbal, and more complex examples like (2–3) are assumed to be serial verb constructions (Jarkey 2015). Examples like (4), which cannot easily be accommodated under this view, are claimed to be "synchronically-derived prepositions", which are "homophonous and broadly synonymous" with their corresponding verbs Clark (1979: 8).

There are reasons to doubt this treatment. First, Jarkey (2015: 200) assumes that prepositions are primarily devices for assigning thematic roles, dismissing spatial reference as an ancillary function important only in certain languages—despite the fact that in Hmong, predicates which express directed motion appear to form a natural class with distinctive syntactic properties. Second, the verbal status of path predicates in the manner-of-motion and caused motion constructions is simply assumed. No supporting evidence is provided. Third, without a clearly-defined mechanism for the synchronic derivation of prepositions from verbs, these approaches do not clearly rule out the combination of a verb and its homophonous preposition, which examples like (9) shows to be ill-formed.

(9) *kuv **mus mus** tajlaj
1SG go to market
Intended: 'I went to the market.'

3. Diagnostics for Categorial Status

In previous work (Johnston 2024), I have considered a variety of diagnostics that might plausibly give some evidence as to whether Hmong path predicates are verbal or prepositional. Inconclusive diagnostics include a variety of morphological, syntactic, and semantic properties, as well as certain aspects of the typological profile of Hmong. Ultimately, I identify two informative syntactic diagnostics, which show Hmong path predicates to be underlyingly prepositional across all environments in which they appear. Because these diagnostics are only applicable in a particular syntactic environment, and because they rely on a particular theory of the prepositional domain, some explanation is required.

However, before considering the diagnostics themselves, it is important to be clear about the two hypotheses between which we are presently adjudicating. Hmong path predicates are consistently associated with a directional interpretation, which I assume to arise from a path-denoting PP constituent of some form or other. But what is the relationship between this PP constituent and the path predicate itself? If a path predicate π is a verb, the most natural explanation is that π selects for this PP, as schematized in (10a). If, on the other hand, π is a preposition, the most natural explanation is that it is the head of this PP constituent, as in (10b).

(10) a. [V π [PP [P $\varnothing$] …]]
b. [V [PP [P π] …]]

To distinguish between these the two structures, we will consider how Hmong path predicates combine into more complex structures. I adopt the decompositional analysis of the prepositional path domain put forward by Pantcheva (2011), which divides the path domain into three phrases, Route, Source, and Goal, as schematized in (11).

(11) [Route [Source [Goal [Place […]]]]] (Pantcheva 2011)

I demonstrate that Hmong path predicates obey two co-occurrence restrictions which are consistent with Pantcheva's prepositional "spine", and which are not consistent with the behavior of verbs in Hmong. First, Section 3.1 shows that Source predicates in Hmong are obligatorily accompanied by a Goal predicate. This syntactic "Source–Goal containment" aligns with an important pattern in spatial case-marking attested in several languages surveyed by Pantcheva. Then, Section 3.2 demonstrates that Route, Source, and Goal predicates obligatorily co-occur in precisely that order—as the proposed structure in (11) predicts. On both counts, the behavior of path predicates contrasts with that of other classes of verbs in Hmong (whose categorial status is not in question).

3.1. Syntactic Source–Goal containment

Source predicates in Hmong display a somewhat surprising pattern of behavior: they do not, in fact, have an inherently Source-oriented meaning. When a predicate like *tawm* 'leave, from' occurs as the sole path predicate in the clause, as in (12), it obligatorily contributes a Goal interpretation instead.

(12) kuv **tawm** tsev
1SG leave home
#'I left (from) home.'
'I left for home.'

To derive a Source interpretation, they must be followed by an overt Goal predicate, as in (13). Source interpretations of path predicates are not inherent, but configurational.

(13) kuv **tawm** tsev **mus** tajlaj
1SG leave home go market
'I left (from) home for the market.'
#'I left for home and went to the market.'

Put another way, the path predicate itself is ambiguous as to whether it introduces the Source or the Goal, but the syntactic structure in which the path predicate is merged *does* in some way specify this. This pattern of behavior is quite unusual. In a survey of Goal and Source marking across 117 languages, Wälchli & Zúñiga (2006) find only one language to show this same pattern: Hmong.[3]

However, this behavior does not seem quite so startling if we consider that in more agglutinating and/or fusional languages, Source markers often morphologically incorporate Goal markers, in a way that is clearly compositional (Pantcheva 2011). In fact, this "Source–Goal containment" is one of the primary pieces of evidence in favor of the decomposition seen in (11) above, attested in eight of the 81 languages surveyed. (These are given in (14) below.) The reverse pattern, a Goal marker that contains a Source marker, is unattested (Pantcheva 2011: p. 49).

(14) Containment of Goal within Source (Pantcheva 2011, Table 4.2)

Language	Location	Goal	Source	Reference
Bulgarian	pri	kəm	ot-kəm	Pashov (1999)
Dime	-se	-bow	-bow-de	Mulugeta (2008)
Chamalal	-i	-u	-u-r	Magomedbekova (1967b)
Ingush	-ğ	-ga	-ga-ra	Nichols (1994)
Jingulu	-mpili	-Nka	-Nka-mi	Blake (1977)
Mansi	-t	-n	-n-əl	Keresztes (1998)
Quechua	-pi	-man	-man-da	Jake (1985), Cole (1985)
Uchumataqu	-tá	-ki	-ki-stani	Vellard (1967)

Since this pattern in spatial case-marking is argued to arise directly from the underlying syntax, it is relatively unsurprising that it should also be found in prepositions (in at least some languages).

If Hmong path predicates are verbs, however, this restriction is quite surprising, for two reasons. First, if *tawm* is a verb capable of selecting a Source path in (13), then why can it not also select a Source path in (12)? We are forced to conclude that the type of complement a verb selects can be determined solely by the subsequent adjunction or conjunction of a second verb. Second, this behavior appears to be specific to path predicates. At least one other class of verbs in Hmong, the class of verbs of *obtaining*, can assign a Source role without the requirement that a Goal-oriented predicate also be present. In (15), for example, *ntawm kuv tes* is obligatorily understood as the Source from which the money was transferred, despite the fact that there is no additional path or transfer predicate to describe a Goal.

[3] Wälchli & Zúñiga cite Bisang (1991) on Mong Njua (*Moob Ntsuab*), or Blue Mong, a closely-related and mutually-intelligible Laotian Hmong variety.

(15) tus tub.sab txeeb [kuv cov nyiaj] [ntawm kuv tes] (Jarkey 2015)
1SG robber snatch 1SG CLF.PL money DEM 1SG hand
'The robber snatched my money from my hand.'

3.2. Route > Source > Goal ordering

A further prediction relates to the ordering of the sub-parts of complex predicates. In many decompositional analyses of the verbal domain, complex predicates can be formed from multiple heads within the verb phrase. These heads generally compose with one another in a broadly temporal order, often with explicitly causative semantics. For example, Ramchand (2008) proposes the decomposition in (16a), in which an *init(iation)* state causes a dynamic *proc(ess)* event, which itself causes a *res(ult)* state. Contrast this with the decomposition proposed by Pantcheva (2011) for the prepositional path domain, repeated here as (16b), which is expressly *not* temporal. The precedence of Route over Source and Goal shows this; in a purely temporal or iconic ordering, we should instead expect to find Source > Route > Goal ordering.

(16) a. [*init* [*proc* [*res* [P/A/D […]]]]] (Ramchand 2008)
b. [Route [Source [Goal [Place […]]]]] (Pantcheva 2011)

When complex path includes Route, Source, and Goal predicates, as in (17), we see that they obligatorily appear in precisely that order (Jarkey 2015).[4] This ordering restriction can be neatly explained by the structure in (16b), but not a structure like (16a).

(17) cov Hmoob (khiav) [**hla** dej Na.Koom **dim** hauv Nplog-teb **mus** Thai-teb]
CLF.PL Hmong run across water Mekong from inside Laos to Thailand
'The Hmong fled [across the Mekong River from Laos to Thailand].'

Importantly, this contrasts with the behavior of other (clearly verbal) complex predicates in Hmong, whose sub-parts show either a causal relationship, as in (18a), or at minimum a temporal ordering, as in (18b) below. This is just as predicted by the structure in (16a).

(18) a. kuv **nrhiav pom** lub pob
1SG find see CLF ball
'I found the ball.'
b. lawv **hlais** cov txiv **faib** **noj**
3PL slice CLF fruit divide eat
'They sliced, divided, and ate the fruits.'

3.3. Summary

When Hmong path predicates form complex path descriptions, they display two co-occurrence restrictions consistent with the assumption that they spell out heads within the prepositional domain: syntactic "Source–Goal containment" and obligatory Route > Source > Goal ordering. Importantly, neither restriction is observed for predicates which are indisputably verbal in Hmong.

Though space does not permit me to provide the full range of examples here, note that these two effects are generally observed across all four of the syntactic environments highlighted in Section 1, with one exception: Route predicates do not appear in adjuncts, so Route > Source > Goal ordering is not an applicable diagnostic in those cases. However, as path predicates in adjuncts do show show Source–Goal containment, for example in (19), I maintain that all four environments identified in Section 1 feature a prepositional constituent.

(19) [**txij** lub zos peb nyob **rau** yav.pem.toj] mas, ua tau teb pob.kws… (Fuller 1985)
from CLF village 1PL live up.to mountain TOP make can field corn…
'From the village we lived in up to the mountains, (we) could grow corn…'

[4] The ordering observed in (17) flies in the face of a common assumption about prepositional phrases—that they adjoin to *v*P in a recursive and freely-reorderable manner. Although it is clear that Hmong does not allow this sort of multiple-adjunct structure, I have no explanation at present for precisely *why* it does not allow this.

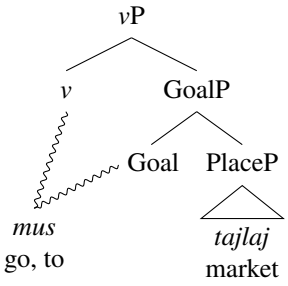
4. Analysis

In this section, I outline an analysis of the mixed verbal and prepositional properties of Hmong path predicates across the four environments illustrated in Section 1: as a main verb, in the manner-of-motion construction, in the caused motion construction, and as an adjunct. As the first three environments all convey a similar directed motion reading, I assume that these share the same basic underlying syntax, roughly sketched in (20a), in which *v* takes a prepositional complement. The fourth environment involves a prepositional constituent of similar internal complexity merged as an adjunct, as in (20b).

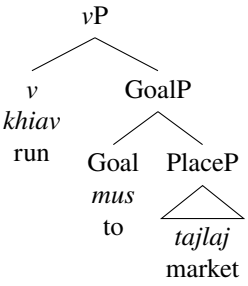
(20) a. Directed motion: $[_{vP}\ [\ v\ ][_{\text{Route/Source/GoalP}}\ \cdots\ ]]$
b. Outer locative: $[_{vP}\ [\ v\ ]][_{\text{Route/Source/GoalP}}\ \cdots\ ]$

The three directed motion cases are differentiated primarily by the choice of verb. First, the Path predicate may lexicalize a span (e.g. Svenonius 2016) including both *v* and the highest path head in its complement—which in the case of (21) is Goal.

(21)



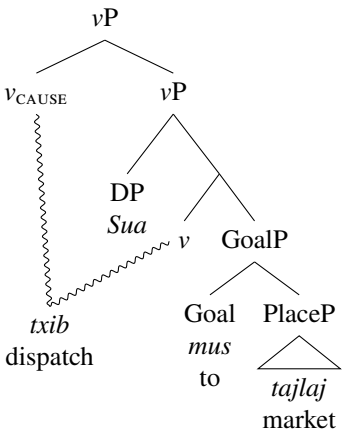
(22)



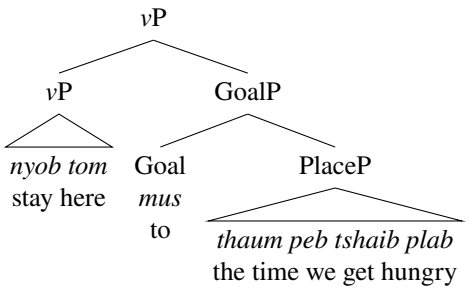
Second, *v* may be lexicalized by a distinct manner-of-motion verb, such as *khiav* 'run' in (22). In this case, the path predicate lexicalizes a trivial span comprising only a single path head (essentially, it remains *in situ* within the PP). The resulting event is one of *running* rather than one of *going*, but in all other respects, including the path traversed, the resulting meaning is the same as derived by (21) above.

Third, *v* may be lexicalized by a transfer (i.e., *send*-type) verb. This involves two additional complications. First, while manner-of-motion verbs are generally intransitive, transfer verbs are by definition transitive. This may be reflected in the structure through distinct selectional requirements, arising from the predicates themselves or in combination with different "flavors" of *v* (e.g. Folli & Harley 2005). Second, these verbs involve a more complex event structure, encoding a causal relation (see Harley 2002, Beavers & Koontz-Garboden 2020: ch. 3 on English *send*). These two facts can be naturally connected assuming a more highly articulated syntax within the *v*P—one possibility for which is illustrated in (23).

(23)



(24)



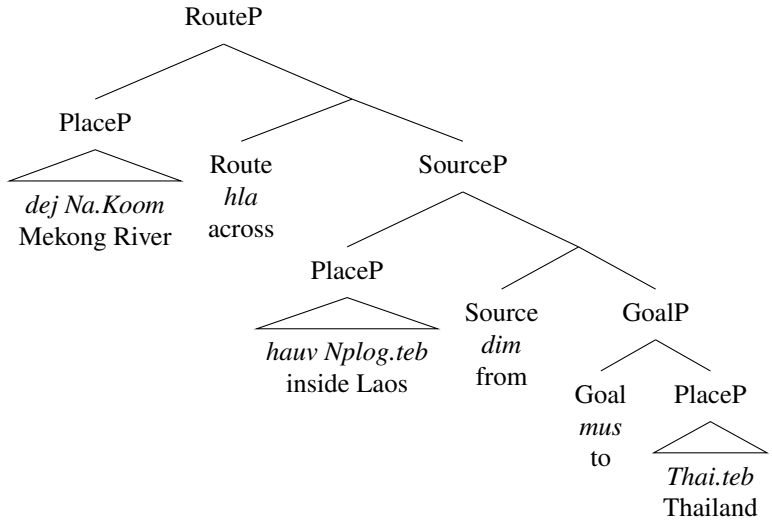
The fourth and final case, shown in (24), involves a markedly different structure. Here, the path predicate merges within a prepositional adjunct modifying the *v*P. Because spanning can only take place be-

tween elements of a continuous head–complement sequence (Svenonius 2016), there is no possibility for the path predicate to lexicalize *v* in this case.

The four structures in (21–24) represent the basic contrast between the four environments outlined in Section 1. All cases involve a similar underlying syntax for the PathP constituent. Where they differ is in (i) the attachment site of the PathP constituent, and (ii) the lexicalization of *v*. In this model, Hmong path predicates are necessarily prepositional across all environments in which they appear, and are additionally verbal in only those contexts like (1) where they also lexicalize *v*.

The more complex examples discussed in Section 3 differ from these only in the internal makeup of the PathP constituent. The prepositional constituent in (17), for example, might receive the fully-articulated structure in (25).

(25)



The structure in (25) can in principle appear in any of the environments in (1–3)—though how it interacts with these structures will be slightly different. In (2–3), this structure will simply form the complement to a manner-of-motion verb or a transfer verb. In the environment in (1), a path predicate will lexicalize *v*—though only the topmost path predicate will be able to spell out *v*. The remaining path predicates will not have the necessary head–complement relationship with *v*, will therefore be unable to lexicalize it, and will only contribute their prepositional meanings in that case.

This structure falls short in one important respect, however: it does not correctly capture the word order for Route and Source predicates, which should precede rather than follow their GROUNDS. One possible means of deriving the correct word order is by positing additional functional layers above Source and Route; by lexicalizing these additional heads, Source and Route could be linearized before the material in their specifiers. Another possibility is to derive the correct ordering from Local Dislocation (Embick & Noyer 2007, Levin 2015) or some similar process of complex head formation. As both of these possibilities may have far-reaching (and potentially undesirable) consequences for other aspects of Hmong grammar, I remain somewhat agnostic for the present as to precisely how the correct word order should be derived within complex path descriptions in Hmong.

5. Discussion: Deprepositional verbs cross-linguistically

I have put forward an analysis of Hmong path predicates that treats them as cross-categorial: in certain cases, they act only as prepositions, while in others they also lexicalize *v* and function as the main verb of the clause. While at first blush this may sound somewhat unusual, it closely resembles existing treatments of deadjectival and denominal verbs, which arise when the verb is spelled out by the head of its adjectival or nominal complement. These syntactic configurations, given in (26a–b) below (from Hale & Keyser 1993), are essentially the same as the present proposal for Hmong path predicates, schematized in (27).

(26) a. $[_{\text{VP}}\ [[\text{N}_i]\ \text{V}]\ [_{\text{NP}}\ t_i]]$

b. $[_{VP}\ [[A_i]\ V]\ [_{AP}\ t_i]]$

(27) $[_{vP}\ [[Goal]\ v]\ [_{GoalP}$ <Goal>$]]$

Effectively, we might characterize Hmong path predicates as prepositions which give rise to a corresponding class of "deprepositional" verbs. That is, we have simply added "preposition" to the set of lexical categories that can be used as a base from which to derive a verb. Viewed in this way, we might be more surprised at the fact that we have not found deprepositional verbs to be widespread across the world's languages. Why do languages like English lack verbs like *I to-ed the market* or *I in-ned the living room*?

On further reflection, however, there are a variety of existing analyses similar in their broad strokes to the present proposal. Although these employ different formal mechanisms and draw slightly different conclusions about the precise structure of the directional PP, they have the same core syntactic proposal: through some mechanism, an element functions both as a head within the prepositional domain and as the main verb of the clause. In most cases, this is taken to be obligatory. Inagaki (2002) proposes that motion verbs in Japanese originate within the prepositional phrase (with supporting data from Spanish and Russian). Son & Svenonius (2008) account for cross-linguistic contrasts in the exponence of directed motion by making similar claims for languages like Malayalam and Korean. Troberg & Leung (2021) argue that French directional verbs lexicalize a bundled *v*+Path head. (Hu 2022) claims that Mandarin directional verbs are prepositions which obligatorily incorporate into V.

The current proposal for Hmong places it, in a sense, on par with these previous proposals. The path predicate lexicalizes *v* and Path (as well as any functional heads assumed to intervene between them). However, none of these proposals include multiple path heads, and none, so far as I am aware, allow for the variable lexicalization patterns found in Hmong (i.e., that a given preposition will lexicalize *v* in certain cases but not in others).

At present, I am only aware of one proposal that expressly allows for this sort of variable lexicalization pattern: Leung (2023) argues that in Cantonese, just as in the present proposal for Hmong, the preposition lexicalizes *v* only when *v* is not spelled out by a manner predicate (or some other verb), and otherwise the preposition remains *in situ*. Despite this, there are differences between the two languages. First, it is unclear whether Cantonese shows any evidence in favor of the decomposition of Path into Route, Source, and Goal, which is an important point in the present analysis of Hmong. Second, while Hmong allows multiple GROUNDS within a single complex path description, path descriptions in Cantonese (even when complex) are limited to a single GROUND.

Reconciling the specific details of these approaches is left for future work. However, this small but growing body of literature suggests that in at least some languages, the boundary between the verbal and prepositional domains is much "fuzzier" than in languages like English. And in English, this boundary may already be somewhat fuzzy. Although English, Dutch, and other Germanic languages lack deprepositional verbs, prepositions are often held to raise into the verbal domain in order to derive verb–particle constructions (e.g. Baker 1988, Johnson 1991, Neeleman 1994, Ramchand 2008) or for licensing reasons (e.g. Koopman 2010, den Dikken 2010). Such languages are already most of the way to deriving the Hmong-type pattern: if a prepositional element can lexicalize Res or incorporate into *v*, then it is only a small step to say that in other languages, they might serve as verbs in their own right. The absence of deprepositional verbs in English, then, may not reflect a cross-linguistic impossibility, but rather reflect the position of English on a cross-linguistic spectrum, of which Hmong (and languages like it) may represent the farthest point.

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