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# Category genesis in Chitimacha

## A constructional approach

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The genesis of new lexical categories poses a challenge to theories of diachronic change: If there are no pre-existing words in the class to analogize to, how does the category arise? This paper shows that a constructional approach to category change successfully accounts for the genesis of a diverse class of preverbs in Chitimacha, an isolate of the U.S. Southeast linguistic area. It is shown that what enabled the creation of the preverb category was schematization across a variety of forms with similar properties, namely, a preverbal syntactic position and a directional semantics. Category genesis can therefore be viewed as simply a special case of constructionalization wherein schematization plays a crucial role.

**Keywords:** Chitimacha, category genesis, schematicity, schematization, constructionalization, preverbs

### 1. Introduction

Category genesis presents a potential problem for theories of diachronic change that rely on analogy as a key mechanism. When diachronic changes result in the creation of an entirely new word class, there are no pre-existing words on which an analogy could have been based. How then does the category arise? A construction-based theory of diachronic change offers a solution in that it recognizes the existence of *schematicity*, or abstractions across sets of constructions (Traugott & Trousdale, 2013, p. 14; Tuggy, 2007). Using data from the Chitimacha language, an isolate of the U.S. Southeast linguistic area, this paper shows that a series of micro-level *constructional changes* (i.e., changes which affect the internal features of a construction without creating a new one (Traugott & Trousdale, 2013, p. 1)), combined with an increase in schematicity across otherwise unrelated constructions, can lead to the subsequent creation of a new category in the language. It adds to the burgeoning literature on reconstruction from a constructional perspective (cf. Barðdal et al.,

2015), by applying diachronic construction grammar to the internal reconstruction of categories within a language.

Chitimacha has a small class of preverbs whose members appear to have followed different diachronic pathways and have origins in different word classes, and yet were all reanalyzed as members of the same, new category of preverbs. Since this was a new class of words, its emergence could not have been based on analogy to already-existing preverbs, at least not for its first members. Instead, as will be shown here, the genesis of this category likely arose from analogy between similar constructions that all shared certain properties. This sort of ‘light paradigmaticity’<sup>1</sup> among unrelated forms (i.e., schematicity) allowed for a parallel and mutually-reinforcing process of *constructionalization*, i.e., “the formation of new units (constructions) out of hitherto independent material” (Bergs & Diewald, 2008, p. 4), giving rise to the category of preverb. These disparate words underwent reanalysis to belong to the same, new word class on the basis of their common constructional properties. This process by which constructions are reanalyzed to conform to a newly recognized schema is what I term *schematization*.

This paper proceeds as follows: First I provide background on the language and its system of preverbs. Next, I describe each of the nine preverbs and the evidence for their diachronic origins. Finally, I sketch the process by which these preverbs of disparate origins could have converged into a single category through a process of constructionalization, and then conclude.

## 2. Background

Chitimacha is a linguistic isolate spoken along the coast of Louisiana from the time of French contact in 1699 until the last fluent speaker passed away in 1940. From 1930–1934, then-graduate student Morris Swadesh visited the Chitimacha reservation in Charenton, Louisiana, and filled 16 composition notebooks with texts and elicited sentences. Based on these materials, he prepared draft versions of a grammar, dictionary, and text collection for the language, but these were never published, and today these manuscripts are curated at the American Philosophical Society Library in Philadelphia, PA (Swadesh, 1939a). It is Swadesh’s unpublished but nearly-finished text collection (1939b) which constitute the data for the present study, provided courtesy of the Chitimacha Tribe and the American Philosophical Society Library.

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1. Thanks to Marianne Mithun for suggesting this useful term.

The resulting corpus consists of 88 texts by one speaker, Benjamin Paul (chief of the tribe from 1903 until his death in 1934), comprised mainly of traditional narratives, but also some procedural and expository texts. Texts from the second speaker, Benjamin Paul's niece Delphine Ducloux, have not yet been digitally transcribed, and so could not be included in this study. The available corpus contains 29,028 tokens of 4,467 types. The number of lemmas is currently unknown, but an estimate from Swadesh's dictionary manuscript (1939c), plus my own in-progress database, would be approximately 3,700 for the entirety of the collection.

It must be noted that, because Chitimacha is an isolate, the reconstructions of the etymologies provided here are inferred on the basis of internal evidence, most prominently morphosyntactic reconstruction. The synchronic behavior of the preverbs, on the other hand, is well documented in the corpus. While many linguists see internal reconstruction as less robust than comparative reconstruction, years of working with the Chitimacha corpus has taught me just how rich the insights from internal reconstruction can be. Thus I am inclined to agree with Givón (2000) that internal reconstruction is, properly applied, a sound and fertile method for understanding language history.

### 3. Preverbs in Chitimacha

A *preverb* is definitionally a category in flux. It is sometimes characterized as a 'separable verb prefix', sometimes as a cover term for preverbal words and preverbal prefixes (Los et al., 2012). This is because a common feature of all definitions of preverbs is variability in their syntactic freedom, where certain preverbs are more tightly bound syntactically to the verb and have more functional meaning, and other preverbs may be syntactically separated from the verb and have more lexical meaning. The ability for preverbs to separate syntactically is a phenomenon known as *tmesis* (Booij & van Kemenade, 2003, pp. 1, 88; Diessel, 1999, p. 141; Lehmann, 2015, pp. 104–111; Watkins, 1964). Matthews (2014, p. 318) notes that, "It is perhaps for this case [of tmesis] that the term [preverb] is most useful." More timetic preverbs are typically newer, while more bound preverbs are typically older and therefore exhibit a greater degree of univerbation. Individual preverbs may also exhibit divergence, so that lexical and grammatical uses of the same form coexist synchronically.

In some ways it is useful (though not wholly accurate) to think of preverb + verb constructions as the syntactic reverse of what are called phrasal verbs or particle verb constructions in English and other Germanic languages, the primary difference being the relative order of the verb and the verbal particle/preverb. Phrasal verbs also show timetic alternations and different degrees of compositionality,

follow some of the same diachronic pathways as preverbs, and contribute lexical aspect to the verb like preverbs (Los et al., 2012).

Preverbs arise historically from a variety of sources. In Indo-European, preverbs are thought to have originated as independent words, most likely adverbs (Baldi, 1979). When these proto-preverbs appeared between the direct object and the verb in transitive OV constructions, it became possible to interpret them as modifying either the verb or the object, and so they were analyzed as either adverbs or adpositions respectively (Kuryłowicz, 1964; Watkins, 1964). While this is the most common source of preverbs crosslinguistically, we will see that Chitimacha actually did not follow this pathway for its preverbs, and the sources of Chitimacha preverbs are actually quite diverse. Harris (2003) has documented a similar multiplicity of sources for preverbs in Udi as well, although the exact mechanisms are different from Chitimacha's.

Preverbs in Chitimacha are a closed class of nine monosyllabic words that form a semantic unit with the verb they precede, and convey directional and aspectual information about the verb. Preverbs constitute the sole exception to the fact that Chitimacha verbs are morphologically suffixing. The list of preverbs, their functions, and their token frequencies (out of 29,028 words in total) is presented in Table 1, along with their most canonical translational equivalent. Throughout the examples in this paper, I gloss preverbs in SMALL CAPS, even though they are more lexical than grammatical.

Each of the preverbs except *ni* come in plain and reversative pairs, where the reversative consists of the plain preverb plus a fossilized reversative suffix \*-š, e.g. *zap* 'here' and *zapš* 'back here'. The form of the reversative suffix also appears as -s due to sibilant harmony (e.g. *his* 'back to'), though some free variation occurs between the two forms. Consequently, I do not analyze any word-final /s/ as the reversative unless there is additional evidence for the morpheme boundary. Finally, though both *kap* and *ka:p*'s derive from a root \**ka:p* 'up', their relationship has been obscured somewhat by historic sound change, to be explained more fully in §§ 3.5 and 3.6 below.

A canonical use of a Chitimacha preverb is shown in (1). In reading the examples, it will be helpful to keep in mind that (a) verbal person markers only distinguish first (1) and non-first (NF) person, (b) non-first person objects are not overtly marked on the verb, and (c) verbal person marking follows an agent-patient alignment system in the first person and nominative-accusative system in the non-first person (Hieber, 2016). First-person affixes are agent forms unless otherwise noted. An appendix of glossing abbreviations is included at the end of this paper.<sup>2</sup>

2. Transcriptions in the examples follow an Americanist orthography. Notable deviations from the International Phonetic Alphabet are as follows: <'> = /ʔ/, <c> = /t͡s/, <c'> = /t͡sʔ/,

**Table 1.** Chitimacha preverbs and their meanings

Preverb	Function(s)	Translation	Token frequency
<i>hi</i>	ANDATIVE	‘to’	1,298
	DISTAL	‘there’	
<i>his</i>	ADREDITIVE	‘back to’	74
	DISTAL REDITIVE	‘back there’	
	REPETITIVE	‘again’	
	RESPONSIVE	‘in response’	
<i>kap</i>	INCEPTIVE	‘beginning’	775
	INCHOATIVE	‘becoming’	
	PUNCTUAL	‘suddenly’	
	STATIVE	‘being’	
	SUPER-LATIVE	‘up’	
<i>ka:p’s</i>	SUPERREDITIVE	‘back up’	7
<i>ka</i>	TRANSLATIVE	‘across’	1
<i>kas</i>	DISLATIVE	‘apart’	279
	REVERSIVE	‘reverse’	
	TRANSREDITIVE	‘back across’	
<i>ni</i>	DETRANSITIVIZER	‘doing it’	646
	IMPERATIVE	‘do it!’	
	NOMINALIZER	‘thing’	
	SUBLATIVE	‘down’	
<i>zap</i>	PROXIMAL	‘here’	335
	VENITIVE	‘coming’	
<i>zapš</i>	CIRCUMLATIVE	‘about’	462
	PROXIMAL REDITIVE	‘back here’	
	RECIPROCAL	‘each other’	
	REFLEXIVE	‘oneself’	
	SOCIATIVE	‘together’	
	VENITIVE REDITIVE	‘coming back here’	

$\langle \check{c} \rangle = /tʃ/$ ,  $\langle \check{c}' \rangle = /tʃ'/$ ,  $\langle \check{s} \rangle = /ʃ/$ , and  $\langle y \rangle = /j/$ . Each example is cited along with its source in Swadesh’s (1939b) text collection, following his system of referencing texts, in which A refers to speaker Benjamin Paul, followed by the number of the text where the example comes from, the letter of the paragraph, and the number of the sentence following a period. Thus A13d.2 refers to the second sentence of the fourth paragraph of the thirteenth text by Benjamin Paul. All translations in this paper are Benjamin Paul’s (as transcribed by Swadesh) unless given in [square brackets], in which case they are mine. The interlinear glosses are my own.

- (1) *Panš ʔunk'u=š kunuk'u kap ni:k-iʔi.*  
 person one=TOP QUOT INCH be.sick-NF;SG  
 'They say a certain person fell sick.' (Swadesh, 1939b, A3a.1)

A given combination of preverb + verb may be semantically compositional, like the examples in (2), or may have shifted in meaning and become semantically non-compositional, like the examples in (3).

- (2) a. *hi čuw-* 'go to'  
 b. *kas čuw-* 'go back, return'  
 c. *ni čuw-* 'go down, decrease'  
 d. *ʔap čuw-* 'go here, come'  
 e. *ʔapš čuw-* 'go about, wander'
- (3) a. *kas ʔi:kšt-* 'sharpen (tr.)' < *ʔi:kšt-* 'turn over'  
 b. *ni wopma-* 'ask (tr./intr.)'

In (2b), the lexeme *kas čuw-* 'go back' can be semantically decomposed into 'go' (the meaning contributed by *čuw-*) and 'back' (the meaning contributed by *kas*). The same preverb used with *ʔi:kšt-* 'turn over', however, cannot be viewed this way, and instead the lexeme *kas ʔi:kšt-* must be analyzed as a holistic, non-compositional unit. Throughout this paper, I will refer to this latter, semantically non-compositional type of preverb + verb as a *lexicalized* form, in line with Brinton & Traugott's (2005, p. 96) definition of lexicalization as a process where the formal or semantic properties of a construction are not derivable or predictable from the constituents of that construction. For example, *ni wopma-* 'ask' in (3b) should be analyzed as a lexicalized form because its meaning is no longer recoverable from its component parts (*wop-* 'hear' + *-ma* PLACT), and the preverb *ni* appears regardless of the transitivity of the clause – the form *ni wopma-* has become an invariant lexeme meaning 'ask'. It is of course sometimes difficult to tell whether a form has lexicalized, but cases like those in (3) where the meaning is not predictable and the form is largely invariant are typically easy to discern.

Some but not all preverbs may be timetic, i.e., additional syntactic material may intervene between the preverb and the verb. This is shown in (4).

- (4) *Hus waši ki:cti=š we piyi ših =ki hi nam č'aht-ʔiš-i.*  
 3SG hand point=TOP DET cane belly =LOC AND brand hew-IPFV-NF;SG  
 'Her thumb (print) is embossed in those cane joints.'  
 (Swadesh, 1939b, A13e.2)

However, these instances of tmesis are limited to just a few specific collocations and invariable, and therefore are most likely fossilized reflexes of a time when

Chitimacha preverbs were syntactically independent from the verb. The phrase *hi nam č'ahť-* in (4) historically meant 'hew a brand into' (*nam?* synchronically means 'a design or distinctive mark', while *č'ahť-* means 'saw, hew'), but has lexicalized so that the entire construction now simply means 'emboss'. Aside from these idiosyncratic cases, Chitimacha preverbs immediately precede the verb with which they form a lexical unit.

A few preverbs also have additional, non-verbal functions, and so can precede things like nouns or adjectives, as in (5).

- (5) *We ka:yč'i ʔapš keta=nki ni no:-ma-řš-i.*  
 DET three SOC side=LOC SUBLAT lay-PLACT-IPFV-NF;SG  
 'They lay the three [down] side by side.' (Swadesh, 1939b, A73b.2)

Though the individual behaviors of Chitimacha preverbs are quite diverse, there are still a number of reasons for considering them members of a single preverb category. In fact, as will be argued below, it is precisely these commonalities that allowed for schematization across what were originally a diverse group of words. First, the preverbs share similar phonotactics, all of them monosyllabic with short vowels except for *ka:p*'s. Second, while preverbs are always part of the same intonational phrase as the verb that follows (Swadesh indicated prosodic phrasing in his texts), they have not cliticized to the verb. Morphophonological rules do not apply between the preverb and the verb as might be expected of clitics. In other contexts one sees /š#hV/ → /šV/, but one never sees this with *ʔapš* + /#h/, for example. Syntactically, the preverbs only have scope over the main verb, and not the entire verbal phrase as a clitic might. The third commonality is that all the preverbs have a directional sense as one of their core meanings, suggesting a semantic basis to the category. Fourth is that the preverbs participate in the plain/reversative alternation discussed above (except for *ni*). Fifth, the preverbs always occur in the same syntactic slot and are mutually exclusive with one another, i.e. in complementary distribution. Only one preverb can occur with any verb, even when more than one preverb would be appropriate to the meaning being conveyed. Swadesh (1939d, pp. 147–148; 1946, pp. 329–330) even describes a set of rules which he calls "preverb displacement" that determine which of two preverbs will appear when a speaker wants to use a second preverb with a lexeme that already has one. In this case the preverb that has become a lexicalized unit with the verb is omitted. For example, the lexicalized verb *his he:čť-* 'meet, join (tr.)' becomes *ʔapš he:čť-* 'meet together' rather than \**ʔapš his he:čť-*. Another shared feature of preverbs is that they frequently form "an essential part of the verbal lexeme" (Swadesh, 1939d, p. 147), by which Swadesh means that they form a lexical unit with the verb, and that many of their uses are semantically non-compositional, as described for Examples (2) and (3) above.

The final piece of evidence for a distinct preverb construction is that no other class of words would be an appropriate alternate home for these nine words, if one were inclined to separate them into different categories. One known source for preverbs crosslinguistically is preverbal adverbs (Lehmann, 2015, p. 104–105). This would be surprising for Chitimacha, however, which has no clear class of adverbs. Almost without exception, adverbial words are minimally bimorphemic, and do not occur in the same syntactic slot as preverbs. Adverbials occur only clause-initially or postverbally, and can co-occur with preverbs, often with a direct object intervening between them. One might also be inclined to treat preverbs as postpositions, since Chitimacha's SOV order always places preverbs immediately after the object noun phrase. But Example (6) exemplifies the way that preverbs may co-occur with postpositions, even when the two elements exhibit superficially similar meanings. Since the two words cannot both be postpositions, one of them (the preverb) must belong to a separate category.

- (6) *še:ni=nk hup hi ničw-iži*  
 pond=LOC to<sub>POST</sub> AND<sub>PREV</sub> go.to.water-NF;SG  
 'he came to the edge of a pond' (Swadesh, 1939b, A1a.2)

Finally, while preverbs often imbue aspectual-type meaning to the verb they occur with, they are not themselves inflectional markers of aspect, since they also co-occur with perfects, perfectives, imperfectives, etc. The aspectual-type semantic contribution that Chitimacha preverbs make to the verb is therefore best viewed as a type of lexical aspect (*Aktionsart*) rather than grammatical aspect. It is common for preverbs crosslinguistically to contribute this kind of lexical aspect (cf. Los et al., 2012 for preverbs in Germanic). Example (7) illustrates the aspectual contribution of the preverb *kap*, which here functions as an inchoative, while grammatical aspect is marked by the appearance of *-š* on the verb.

- (7) *kap ruč'iki-ik'-š naža*  
 STAT rot-PTCP-PERF AUX(NF;PL)  
 ['they have become rotten'] (Swadesh, 1939b, A11c.8)

In sum, if preverbs do not form a category in themselves, it is not clear what other category they would belong to.

Having given an overview of preverbs generally and in Chitimacha, let us now examine each in depth, aiming to determine their diachronic trajectories.

3.1 *ʔap* VENITIVE

The history of *ʔap* is the most straightforward of the preverbs. Synchronically *ʔap* has both a venitive function meaning ‘coming’ or ‘going here’, as in (8), and an adverbial demonstrative function meaning ‘here’, as in (9).

- (8) *Wetk hank ʔap nem-naʔa.*  
 then here VEN cross.water-NF;PL  
 ‘Then they crossed over to here.’ (Swadesh, 1939b, A2c.1)
- (9) *Weyt huk’u panš pinikank ne hank ʔap na.*  
 DEM COP Indian just here PROX COP(NF;PL)  
 ‘That is how the Indian is here.’ (Swadesh, 1939b, A2c.2)

Notably, Chitimacha has no single unanalyzable verb meaning ‘come’ that might compete semantically with *ʔap*. Instead, a construction involving *ʔap* is used:

- (10) *Wetk kun siksi=s ʔap čuy-i.*  
 then some eagle=TOP VEN go(SG)-NF;SG  
 ‘Then an eagle came.’ (Swadesh, 1939b, A2b.1)

Given that *ʔap* matches the CVC pattern characteristic of historic verb roots in Chitimacha, it seems likely that the preverb *ʔap* has its source in a lexical verb meaning ‘come’. A diachronic pathway whereby a lexical verb meaning ‘come’ becomes a venitive is well-attested crosslinguistically (Heine & Kuteva, 2002, p. 70; Harris, 2003, pp. 68–69). But what was the mechanism by which the lexical verb ‘come’ became reanalyzed as a preverb? The most likely candidate is constructions like that in (11):

- (11) *ʔaštankiš ʔiš hu:ta=s ʔap ʔa:y-ʔiš-naʔa.*  
 sometimes 1SG boat=TOP VEN borrow-IPFV-NF;PL  
 ‘Sometimes they come and borrow my boat.’ (Swadesh, 1939b, A70a.4)

Originally, this would have been a serial verb construction consisting of the uninflected verb *ʔap* ‘come’ followed the fully-inflected main verb. Indeed, it is not uncommon for *ʔap* to still be translated as ‘come and ...’ or ‘come [verb]’. Then, via analogy to and schematization with other preverbs in the making, *ʔap* would have been reanalyzed as the venitive preverb. The more strongly adverbial/directional sense of *ʔap* meaning ‘here’ or ‘to here’ like in (9) must have therefore been historically derivative from the venitive sense.

3.2 *zapš* REDITIVE

I term the preverb *zapš* a reditive (< Latin *reddere* ‘to return, send back, give back’), since its core meaning is ‘coming back’. Diachronically, *zapš* decomposes into *zap* ‘come’ (see § 3.1) + *-š* REVERSATIVE. However, its range of functions is more diverse than *zap*, and so the diachronic trajectory by which these additional senses developed must be explained as well.

The meaning of *-š* as a reversative is apparent from alternations both within the set of preverbs (compare (12a) and (12b)), and in verbs generally (compare (13a) and (13b)). Because the appearance of *-š* outside the preverbal paradigm is limited to use with verbs, this supports the hypothesis that *zap* was originally a lexical verb (cf. § 3.1 above).

- (12) a. *Pešmank=š kunu kap peš-mi-:k’ t’ut-naža.*  
ducks=TOP QUOT SUPLAT fly-PLACT-PTCP go(PL)-NF;PL  
‘The ducks have flown up and gone.’ (Swadesh, 1939b, A63a.18)
- b. *Hesik’en ka:p’s nuhčwi-čuy.*  
again SUPRED stand-IRR(SG)\NF;SG  
‘He will rise up (from his bed) again.’ (Swadesh, 1939b, A16b.5)
- (13) a. *Weykš k’asmi ba-k-te-pa ko:š-naža.*  
thus corn flat-STAT-INTR-NZR call-NF;PL  
‘They call it flattened corn.’ (Swadesh, 1939b, A74g.3)
- b. *kas ba-š-te-<sup>3</sup>*  
REV flat-REV-INTR  
‘fold’ [lit. ‘un-flatten back’] (Swadesh 1939c, p. 34)

Since we have already seen that *zap* may have both adverbial (‘here’) and venitive (‘come’) meanings, similar adverbial and venitive meanings for *zapš* can be transparently derived, thus explaining two of the functions of *zapš*. A reditive venitive use of *zapš* is shown in (14), and a reditive adverbial (‘back here’) use in (15).

- (14) *zam k’iht-k-š zapš zehy-i?*  
what want-PTCP-SBD RED arrive(SG)-NF;SG  
‘What do you want that you come back?’ (Swadesh, 1939b, A17d.3)
- (15) *Him te hesik’en zapš ču-:k’-š či-n.*  
2SG INTER again PROX.RED go(SG)-PTCP-SBD COP(NF;SG)-CONT  
‘Is that you coming back here again?’ (Swadesh, 1939b, A69c.14)

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3. This form is taken from Swadesh’s (1939c) dictionary rather than the text collection. It was elicited from Benjamin Paul as part of a word list.

From these uses, there is a plausible pathway for how the sense of ‘about, randomly’ as illustrated in (16) could have developed. Reditive venitive senses of *ɔapš* meaning ‘going and coming (back)’ may have been used ever more figuratively until it came to include meanings like ‘go about’, ‘wander’, and ‘move randomly’.

- (16) *hiɔniš ɔapš ču:-ma-iš-či.*  
 just CIRCLAT go(SG)-PLACT-IPFV-VERT:NF;SG  
 ‘he is simply wandering about’ (Swadesh, 1939b, A7a.7)

The reflexive and reciprocal meanings of *ɔapš* would have then developed from the ones above. The meanings ‘return’ and ‘come back’ are attested as a source of reflexives in Sanuma (Yanomam, Brazil), resulting from a semantic narrowing from ‘back’ to ‘back to oneself’ (Borgman, 1991, p. 43, as cited in Schladt, 2012, p. 105). The same process appears to have occurred in Chitimacha, yielding the reflexive use of *ɔapš* like that in (17).

- (17) *hus nehe ɔapš k’et-iži.*  
 3SG self REFL kill(SG)-NF;SG  
 ‘He killed himself.’ (Swadesh, 1939b, A3f.7)

Reflexives are themselves a commonly-attested diachronic source for reciprocals (Heine & Kuteva, 2002, p. 254), and this is also the case for Chitimacha. Example (18) shows one such reciprocal use of *ɔapš*.

- (18) *Wetk kunuk’u tep ɔapš ɔa:y-puy-naʔa.*  
 then QUOT fire RECIP lend-IPFV-NF;PL  
 ‘Then they lend fire to each other.’ (Swadesh, 1939b, A5d.3)

The last sense of *ɔapš* to be explained is the sociative construction meaning ‘together’ like that in (19).

- (19) *Kiš ne ɔapš ne:ž’i-mi-i:di-na: k’an hesik’en.*  
 dog even SOC talk-PLACT-IRR(PL)-NF;PL NEG again  
 ‘Dogs are not to converse together again.’ (Swadesh, 1939b, A6b.1)

While it seems plausible that the reditive adverbial ‘back here’ could have developed into the sociative (since coming back to a place often includes coming back together with something left at that place), it is actually reciprocals that are known to be polysemous with sociatives crosslinguistically (König & Gast, 2008, p. 8). Either way, a plausible pathway for the sociative use of *ɔapš* is available.

3.3 *hi* ANDATIVE

Like *zap* and most of the other preverbs, *hi* has directional (20) and adverbial (21) senses. For *hi*, however, these exhaust its range of meanings.

- (20) *we še:ni waza=nk hi peš-izi.*  
 DET pond other=LOC AND fly-NF;SG  
 ‘he flew him toward the opposite side of the pond’ (Swadesh, 1939b, A1c.1)
- (21) *wetk hi zuy-nař-š*  
 then DIST arrive(PL)-NF;PL-TEMP  
 ‘when we got there’ (Swadesh, 1939b, A65b.9)

The preverb *hi* does not follow the CVC structure expected for verb roots, and there are no synchronic reflexes in the language to suggest a verbal origin for *hi* as there are for some of the other preverbs. Though hardly conclusive, these two points make a verbal origin for *hi* less likely. However, the construction in (20) is suggestive as to its source. Forgács (2004) documents a diachronic pathway for Hungarian where some preverbs arose from postpositions that were reanalyzed as belonging with the following verb rather than the preceding noun. Chitimacha *hi* shows evidence of following a similar trajectory. In (20) and many other examples like it, *hi* is indistinguishable from a postposition, of which Chitimacha has many (but remember that Example (6) above showed this resemblance to be superficial, because *hi* itself can co-occur with other postpositions). *Hi* contributes a semantic goal to the meaning of the verb, which thus often licenses (but does not require) the presence of an overt object functioning as that goal. A history where *hi* originated as a postposition explains this behavior, since *hi* would have retained some of its previous constructional properties (namely, the ability to license an argument). Moreover, just as postpositions typically occur with indirect objects such as goals, recipients, or beneficiaries, Examples (22) and (23) show a case where the presence of *hi* imparts a recipient semantics to the NP (22), but in the absence of *hi* the NP is interpreted as a patient or perhaps theme (23).

- (22) *wetk ni ti:kmiš hi koř-naka.*  
 then Governor AND call-1PL  
 ‘we called the Governor.’ (Swadesh, 1939b, A3.31)
- (23) *zakšuš heč’in koř-š-nařa.*  
 cypress holy call-IPFV-NF;PL  
 ‘They call [i.e. name] them holy cypresses.’ (Swadesh, 1939b, A9f.2)

It therefore seems that a sequence of [NP PostP] V was reanalyzed as NP [PREV V], with the result that *hi*, the preverb in this case, retained some of its earlier properties, such as the ability to license an overt noun phrase or imply a semantic one.

3.4 *his* ADREDITIVE

The preverb *his* is another member of a plain – reversative pair, decomposable into the andative *hi* (see § 3.3) + reversative *-š* (realized as /s/ here due to sibilant harmony). Some of the senses of *his*, like *ʔapš*, can thus be straightforwardly derived from its non-reversative counterpart. An andative reditive (ADREDITIVE) meaning is illustrated in (24), and an adverbial reditive (DISTAL REDITIVE) meaning in (25).

- (24) *ʔunk'u=š ni ti:kmiš his kow-i*  
 other=TOP Governor ADRED call-NF;SG  
 ‘Another responded to the Governor’ (lit. ‘called back to’)  
 (Swadesh, 1939b, A4g.7)

- (25) *hesik'en his t'ut-k*  
 again DIST.RED go(PL)-PTCP  
 ‘when they went back (there) again’  
 (Swadesh, 1939b, A5b.1)

In addition to the adreditive function, *his* has a repetitive meaning, ‘doing again’, illustrated in (26). In this example, *his* appears only with the second, repeated instance of *kihci-* ‘pound’.

- (26) *k'asmi k'apt-k, [...] kihci:k', [...] hesik'en his kihci:k'*  
 corn take-PTCP pound-PTCP again REPET pound-PTCP  
 ‘They took the corn, [...] pounded it, [...] pounded it again,’  
 (Swadesh, 1939b, A74e.2)

It is known that morphemes meaning ‘go back (to)’ can develop into iteratives (Heine & Kuteva, 2002, p. 259), suggesting a pathway from the adreditive to the repetitive meanings of *his*. Though not quite a canonical iterative (iterativity in Chitimacha is typically accomplished through the pluractional marker *-ma*), this seems a likely diachronic pathway for the repetitive meaning of *his* as well.

Swadesh also describes another meaning for *his*: ‘doing in response’, specifically with verbs of communication (Swadesh, 1939d, p. 152a). It is not clear how this sense is to be distinguished from reciprocals however. Indeed, the vast majority of instances of *his* in the corpus occur with either the verbs of communication ‘answer’ and ‘say’, as in (27), or with the reciprocal-type verbs ‘meet’, and ‘wait for’, as in (28).

- (27) *we haksik'am =hiš siksi his muyt-iži*  
 DET young\_man =ERG eagle RESP call-NF;SG  
 ‘the young man answered the eagle’  
 (Swadesh, 1939b, A2b.5)

- (28) *Wetkš siksink his he:čt-iži.*  
 then eagle RESP carry-NF;SG  
 ‘Then an eagle met him.’  
 (Swadesh, 1939b, A1b.1)

It may be that the semantic distinction between *his* reciprocals and *zapš* reciprocals is a matter of affectedness. In the case of ‘meet’ and ‘wait for’, both participants are themes rather than patients. There is at least one other documented case of a ‘response-reciprocal’ (Camargo, 2007), which supports the potential distinction between *his* reciprocals and *zapš* reciprocals, but this merits further investigation. Of importance here are the diachronic origins of these different senses. These response-reciprocals can reasonably be assumed to derive from the andative use of *his*, likely by a semantic extension of ‘back to’ to mean ‘in response to’, though I know of no other studies demonstrating a diachronic pathway from reditives or andatives > responsives.

### 3.5 *kap* SUPER-LATIVE

The core directional meaning of *kap* is ‘up’, glossed here as SUPER-LATIVE, and exemplified in (29). It also occurs in more figurative uses, as in (30).

- (29) *pokta=nk kap peš-k*  
 sky=LOC SUPLAT fly-PTCP  
 ‘I flew up to the sky’ (lit. ‘flying up to the sky’) (Swadesh, 1939b, A10j.4)
- (30) *we šuš kap c’i-t’i-naʔa-nk’š*  
 DET tree SUPLAT warm-IRR(PL)-NF;PL-DEB  
 ‘they must burn up the tree’ (Swadesh, 1939b, A9e.2)

We can infer the origins of *kap* through converging evidence from a number of synchronic stems. The reversative counterpart of *kap* is *ka:p*’s ‘back up’ (where the final *-s* is the reversative; see § 3.6), suggesting that the original form of *kap* may have been *\*ka:p*. In support of this hypothesis is the fact that the verb *ka:pte-* ‘to sprout, stem’ also appears to derive from a historic root *\*ka:p* meaning ‘up’, plus the intransitive verbal suffix *-te*. The glottalized consonant /p’/ in *ka:p*’s arose from the reanalysis of a postvocalic glottal as glottalization on the following consonant, triggering compensatory vowel lengthening in the vowel preceding. While this glottal was lost in *ka:pte-*, and also triggered compensatory lengthening, the historic glottalization of consonants never occurs before the suffix *-te*, explaining the presence of a glottalized /p’/ in *ka:p*’s- and its absence in *ka:pte-*. However, for reasons not yet fully understood, compensatory lengthening of vowels was not retained in all cases. Consider the form *kapi* ‘seed’: this undoubtedly derives from *\*ka:p* ‘up/to sprout’ plus the nominalizer *-i*. So it is not surprising that *kap* might have lost its vowel length as well, even if the exact reasons are not fully understood.

It seems then that ‘up’ was one of the earliest meanings of *kap*. This adverbial directional function for *kap* would have set the stage for its reanalysis as a preverb.

But *kap* underwent numerous other changes as well. A first development was probably the extension to punctual changes of state, illustrated in (31) and (32), and seen most frequently with verbs like ‘die’ and ‘stop’. These uses would have been an extension of the figurative use of ‘up’ seen above.

- (31) *Wetk we zašinč’at’a=š kap nu:p-iži.*  
 then DET old\_man=TOP PUNC die(SG)-NF;SG  
 ‘Then the old man died.’ (Swadesh, 1939b, A16c.4)
- (32) *Tutk kunuk’u hunks ni k’uštīš kap čip-iži.*  
 then QUOT 3PL food PUNC finish-NF;SG  
 ‘Their food ran out.’ (Swadesh, 1939b, A3b.2)

Detges (2004) describes how movement, including verbs meaning ‘jump’ or ‘leap’, can be a robust source for inchoatives with examples from Indo-European: “If an agent moves to some place with the intention of carrying out some action there, then she is visibly making a gesture which will take her to the beginning of this action” (Detges, 2004, pp. 213ff.). The act of getting up is likewise an indication that an action is about to take place, and so we see that the ‘up’ meaning of *kap* developed into inchoative and inceptive senses, in line with Detges’ cognitive perspective:

- (33) *ka:kwa-ki zašt zuči :k’š panš ne kap nacpik-mi-naʔa*  
 know 1SG;P NEG how do-PTCP person even INCEP begin-PLACT-NF;PL  
 ‘I do not know how people started up’ (Swadesh, 1939b, A1d.4)
- (34) *kap pa:kine-ki-čur-š*  
INCH be\_tired-1SG;P-IRR(SG)-COND  
 ‘if I get tired’ (Swadesh, 1939b, A2b.8)

Note that all instances of the inceptive use of *kap* in the corpus (i.e. those translated with ‘begin’) co-occur with the lexical verb *nacpik-* ‘begin’, so it is not clear that this should even be considered a discrete function for *kap*. Inchoative uses, however, occur with a variety of verbs.

In opposition to its punctual, change of state use, *kap* may also be used with nouns and deverbal adjectives to impart a durative stative reading, as in (35). This was probably an extension of the inchoative meaning, so that ‘became happy’ took on a perfect reading, where the change of state is viewed as still relevant to the present. In fact, these stative readings are most common in perfect aspect constructions, as in (35). In this passage, an event occurred in the prior clause which made the people happy, and so (35) conveys a change of state (becoming happy) that then endured for some time.

- (35) *Wetk we panšk kap šeški:k'-š na-zuy-naqa.*  
 then DET people STAT be\_happy-PTCP-PERF AUX(PL)-IPFV-NF;PL  
 'The people were happy.' (Swadesh, 1939b, A11c.14)

Without *kap*, the change of state meaning in this construction is lost, leaving just a durative meaning.

### 3.6 *ka:p's* SUPERREDITIVE

The preverb *ka:p's* occurs only 7 times in the corpus, each time translated as 'rise up' or 'get up' in a situation where the sense of 'back up' is strong:

- (36) *ka:p's kay-mi:t'i-nan.*  
SUPRED rise-PLACT-IRR(PL)-NF;PL  
 'they will rise up [from the dead]' (Swadesh, 1939b, A11c.10)

*ka:p's* derives from *\*ka:p' + -s* REVERSATIVE, and is related historically to its non-reversative counterpart *kap* through their common root *\*ka:p* 'up', as was detailed in § 3.5. *ka:p's* has no other documented functions besides the superreditive 'returning up/back up'.

### 3.7 *ka* TRANSLATIVE

The preverb *ka* is a *hapax legomenon* appearing only once in the corpus, and was not noted by Swadesh in any of his writings on the language. However, its meaning in (37) is exactly what would be expected if *ka* were the non-reversative counterpart of *kas* (see § 3.8 for the meanings and functions of *kas*).

- (37) *we kimuš ney=up ka nenšt-k*  
 DET branch land=to TRANSLAT take.across.water-PTCP  
 '[they] brought the limb to land' (lit. 'taking across water')  
 (Swadesh, 1939b, A9c.8)

It is clear from the broader discourse context of this example that the limb is being brought *across* the water, the expected meaning for *ka*, since the characters are crossing a lake, and because the verb root *nen-* literally means 'on/over water'.

There is also independent evidence for a historic root meaning 'across', which not only confirms the analysis of *ka*, but explains its diachronic trajectory: the verb *ka:kte-* 'extend across' decomposes into the historic root *\*ka:k + -te* INTR, and *\*-ka:k* very likely derives from *\*kaʔ + \*k* STATIVE, where both the stative *\*-k* and the pattern of loss of a glottal accompanied by compensatory lengthening before

the addition of a historic stem suffix are well-attested (see also the change from *ka:p* → *kap* above). In short, \**kaʔ* was very likely a historic root meaning ‘across’ or ‘go across’, which served as the diachronic source of the preverb *ka*. This pathway also nicely parallels that for *ni* (cf. § 3.9 below), where a historic /CVʔ/ root with a directional meaning (\**niʔ* ‘(go) down’) developed a preverbal function.

### 3.8 *kas* TRANSREDITIVE

The core directional meaning of *kas* is a translative reditive or *transreditive*, meaning roughly ‘(going) back across’. Of the reditive preverbs, *kas* seems to be the unmarked form for expressing ‘back’ or ‘returning’, and very frequently gets translated with these two English verbs, more so than the other reditives:

- (38) *ʔašt kas tʔu:t-ʔš-naʔa*  
 how TRANSRED go(PL)-IPFV-NF;PL  
 ‘How are you going back?’ (Swadesh, 1939b, A3f.1)

*kas* derives from the preverb *ka* TRANSLATIVE + -s REVERSATIVE. The dislative (‘(going) apart’) sense of *kas* is analogous to the adverbial uses of other preverbs, where the semantics of the preverb shifts from the type of movement to the result of the movement. In this case, the resulting position is ‘apart’. This sense is illustrated in (39).

- (39) *we tep kas he:čt-k*  
 DET fire DISLAT carry-PTCP  
 ‘[they] raked the fire apart’ (lit. ‘carrying the fire apart’) (Swadesh, 1939b, A74p. 4)

There was also a semantic extension whereby the act of going back to a place was construed more generally as an act of reversing a process, and so *kas* also came to have a general reversive meaning. Example (40) is an instance of this.

- (40) *we paňš pinikank ʔašinčʔatʔa=š paňš kas tey-i-nki*  
 DET Indian old.man=TOP person REV become(SG)-NF;SG-TEMP  
 ‘after the old Indian turned back into a person’ (Swadesh, 1939b, A28d.3)

### 3.9 *ni* DETRANSITIVIZER

Of the preverbs, the functions of *ni* are the most difficult to reconcile with one another. *Ni* occurs with non-verbal elements more frequently than any other preverb by far, appearing in numerous deverbal nominalizations (41) and noun-noun compounds (42).

- (41) *ni t'ap-k'i*  
NZR be.dark-AZR  
 'dark/darkness' (Swadesh, 1939b, A5f.3)
- (42) a. *ša:pniš ni poʔ*  
 rattlesnake NZR plant  
 'rattlesnake medicine' (Swadesh, 1939b, A75g.4)
- b. *hi č'i:pampa ni č'ah*  
 pet NZR bird  
 'pet bird' (Swadesh, 1939b, A12a.6)
- c. *ni šaʔ*  
NZR mouth  
 'voice/language' (Swadesh, 1939b, A50a.7)

The most canonical function of *ni* when used with verbs is as a detransitivizer. This function is evidenced by the many pairs of examples like those in (43).

- (43) a. *ʔiš ʔiš nu:p k'as-ka-nki-š*  
 1SG 1SG potato plant-PL-TEMP-SBD  
 'when I planted my potatoes' (Swadesh, 1939b, A59b.1)
- b. *hesik'en ni k'as-mi-naʔa*  
 again DTRZR plant-PLACT-NF;PL  
 'again they planted' (Swadesh, 1939b, A3b.6)

There are however very many exceptions to this pattern. Transitivity in Chitimacha, like all languages (Hopper & Thompson, 1980), is not at all binary, and instead depends on a variety of factors such as the lexical aspect of preverbs, valency effects from preverbs, the presence of certain transitivity or detransitivizing verb suffixes, grammatical aspect on the verb, the presence of an overt noun phrase, nominal case marking, the presence of the verbal pluractional suffix, and the choice of agent versus patient prefixes. Each of these features is in turn motivated by discourse (Hopper & Thompson, 1980) and the event construal of speakers (see especially Martin, 2000 for a discussion of event perspective as it relates to valency). As such, even when the preverb *ni* is present, the clause may be highly transitive in other ways. This can be seen in (44b), where the presence of an overt direct object noun phrase does not prohibit the appearance of *ni* ((44a) is included for comparison).

- (44) a. *we č'a:šaʔa=š tuč-iʔi*  
 DET rice=TOP cook-NF;SG  
 'he cooked the rice' (Swadesh, 1939b, A15e.5)
- b. *ʔušk č'a:šaʔa ni tuč-mi-naka-š*  
 1PL rice DTRZR cook-PLACT-1PL-SBD  
 'when we cooked rice' (Swadesh, 1939b, A74a.6)

Because of this seeming inconsistency, Swadesh himself states that “the force of the usage [of *ni*] is completely unclear” (Swadesh 1939d, p. 154). John R. Swanton, however, working with the same speaker two decades prior to Swadesh, suggested that *ni* actually meant ‘something’, and treats it as the direct object of the verbs it occurs with (Swanton, 1920, p. 10). While analyzing *ni* as a direct object is problematic because *ni* can co-occur with a full direct object noun phrase (as in (43b)), an analysis of *ni* as a synchronic reflex of a historic pronoun meaning ‘thing’ provides a neat account of the data. It explains why *ni* occurs in nominalizations like (41) and (42), while also having a detransitivizing effect in cases like (43). In the detransitivizing cases, *ni* probably originally served as the direct object, and later was reanalyzed as a detransitivizing preverb. Because the direct object slot was already being filled by *ni* at the point in time when *ni* was reanalyzed as a preverb, transitive constructions like *ni k’as-*, which would have originally been parsed as ‘to plant something’ (transitive verb + direct object), were reanalyzed as a single lexical unit meaning ‘to plant’ (intransitive, with the semantic implication, provided by the preverb, that there is some specific thing being planted).<sup>4</sup> This process whereby preverbal nominals are incorporated into the verb and in doing so affect the verb’s transitivity is most well documented in cases of historical noun incorporation (Mithun, 1984).

A final extension from the ‘thing’-related senses of *ni* is to an imperative marker. *ni* is often redundant in these cases, since the verbs it occurs with are also marked by the imperative suffix *-(ʔ)a* or a special imperative stem, as in (45) and (46) respectively. In addition, imperative *ni* often co-occurs with another imperative particle *huš*, also seen in (46), whose meaning is unknown. However, in cases like (47), *ni* is the only formal marking of the imperative.

(45) *kahpi ni ka:čt-ʔa*  
 coffee IMP drink-IMP  
 ‘drink some coffee!’ (Swadesh, 1939b, A29c.1)

(46) *Pušinkank huš ni pe.*  
 quiet IMP IMP COP(IMP)  
 ‘Remain still!’ (Swadesh, 1939b, A17g.10)

4. One reviewer wonders whether the nominalizing and detransitivizing functions of *ni* could be considered part of the same development, since deverbal nominalizations usually involve a reduction in valency. This does not seem to be the case for Chitimacha. Verbs used with *ni* do not exhibit any other nominal-like behaviors. They may be used as main or subordinate clauses, and may be finite or non-finite, independent of the presence of *ni*. Plausibly, frequent enough use of *ni* with nouns could, via analogy, cause the reanalysis of *ni* + verb constructions as nominals, but I have yet to find any evidence to this effect.

- (47) *Ni way-ma sa ša:hken.*  
 IMP weave-PLACT DEM basket  
 ‘Weave that basket!’ (Swadesh, 1939b, A13a.4)

This imperative function could have plausibly developed from a reanalysis of phrases like (47), which would have originally meant ‘weave it, that basket’, to a more general imperative marked by *ni*. Eventually *ni* could have extended its distribution beyond transitive verbs to contexts like (46).

The only other major sense of *ni* is, to the best of my knowledge, unrelated to the senses above. This is the sense of ‘down’, as seen in (48)–(50).

- (48) *ku: ni čuw-a=nki*  
 water SUBLAT go-NF;SG=TEMP  
 ‘When the water went down’ (Swadesh, 1939b, A10e.1)

- (49) *Tewe we ku:k ni čuy-i.*  
 but DET water SUBLAT go-NF;SG  
 ‘At any rate the water went down.’ (Swadesh, 1939b, A62b.5)

- (50) *Wetk we šuš ni tey-p-iži.*  
 then DET tree SUBLAT sit(PL)-CAUS-NF;SG  
 ‘He put the tree down.’ (Swadesh, 1939b, A12b.3)

There is good synchronic evidence that the ‘down’ meaning of *ni* is quite old, so that it is unlikely that the ‘down’ meaning developed from the ‘thing’ meaning. Two forms in particular suggest that ‘down’ as a meaning of *ni* is significantly old, since it is buried behind another fossilized suffix, *\*-h*, within the verb root. The historical internal morphology of these two forms is shown below.

- (51) *ni:hkup*  
 \*niʔ- \*-h -k hup  
 go.down in PTCP to<sub>POST</sub>  
 ‘down’
- (52) *nehčwa-*  
 \*ne/ni \*-h -čwa  
 down in move.vertically  
 ‘walk down’ (also numerous other verbs with an element *\*neh-*)

These historic morphemes can be reconstructed from other forms as well. Since I am not aware of any documented pathway whereby an element meaning ‘thing’ came to mean ‘down’, it seems the best explanation for the use of *ni* as both a nominalizer/detransitivizer and a directional meaning ‘down’ is a diachronic merger between what were originally two near-homophonous forms: *\*ni* ‘thing’ and *\*ni(ʔ)* ‘down’.

#### 4. The constructionalization of Chitimacha preverbs

Having examined the probable diachronic pathways by which the various senses of Chitimacha preverbs may have developed, we are now in a position to determine how the preverb category could have emerged from a set of forms with such disparate histories. The key, I argue here, is that each proto-preverb independently underwent a series of micro-changes (constructional changes) that happened to converge on a shared set of properties. Speakers, recognizing these shared properties, abstracted away from the various constructions to recognize the existence of a new schema. Then began a process of reanalysis whereby the morphosyntactic properties of each of the proto-preverbs was brought in line with their newly perceived function. I term this process *schematization*, a mechanism whereby constructions undergo reanalysis as a result of the recognition of a new cross-constructional schema by speakers.

The development of Chitimacha preverbs is, conceptually speaking, similar to a much-discussed case in the grammaticalization literature: the development of English auxiliaries (Heine, 1993; Hopper & Traugott, 2003, pp. 55–58; De Smet, 2009, p. 1751; Roberts & Roussou, 2003, pp. 36–48). I take both to be cases of category genesis. Indeed, De Smet (2009, p. 1751) poses the same question that I have posed here:

English at some point introduced auxiliaries, so conceivably there must have been a first auxiliary, but how could the first English auxiliary be analysed as an auxiliary without drastic reanalysis, given that analogically-based categorial incursion is impossible in the absence of other auxiliaries? *So how could auxiliaries ever emerge without a first auxiliary?* (De Smet, 2009, p. 1751, emphasis added)

De Smet's answer is to appeal to analogy, in line with his broader endeavor to show that reanalysis may be reduced to more fundamental mechanisms, analogy being foremost among them. In answer to his question, he states,

The answer, I believe, is that, paradoxically, the first English auxiliary could not be analysed as an auxiliary until there was a second one. Before that time, the 'auxiliary' would have been an under-analysed and grammatically isolated chunk of language that had undergone both gradual category-internal change and automation. Only when another such chunk developed, language users could perceive a similarity between the two. At that point a category 'auxiliary' arises, which, however, entails no more than a perceived similarity. (De Smet, 2009, p. 1751)

Certain aspects of De Smet's analysis are intuitively appealing, in particular the idea that a perceived similarity between forms may arise that serves as the motivation for the new category. However, I find De Smet's 'paradoxical' explanation too

conceptually circular to be satisfying. The main problem is that his treatment of analogy is unidirectional: it only allows for form A to become more like form B, or form B more like form A. What is needed is a process that makes both form A and form B into a third form C, without form C existing prior to the change.

A more robust definition of analogy is adopted by Traugott & Trousdale (2013). First, they distinguish between *analogical thinking*, which is the recognition of patterns of similarities between meanings and forms, and *analogization*, “a mechanism or process of change bringing about matches of meaning and form that did not exist before” (Traugott & Trousdale, 2013, p. 38; see also Traugott & Trousdale, 2010, p. 38). Analogical thinking and pattern matching may or may not lead to analogization. Defined this way, analogization simply brings forms in line with their meanings, where those meanings have changed as the outcome of analogical thinking. Analogization is always realized through reanalysis, and in cases of analogization that reanalysis is motivated by analogical thinking (Traugott & Trousdale, 2010, p. 38); other kinds reanalysis are driven by other motivations. Under this understanding, form A and form B may *both* undergo reanalysis to better align with their newly perceived meaning, creating a new form C.

In the case of Chitimacha preverbs and category genesis generally, that perceived similarity is necessarily abstract and therefore schematic, since it holds across disparate constructions. While all schemas necessarily cut across different constructions, schemas that arise in the process of category genesis are especially *cross-constructional* because they link together constructions that were not previously recognized to have much, if anything, in common (as was the case with the proto-preverbs in Chitimacha). More typical cases of analogization involve the extension of a preexisting schema to forms that are already quite similar and share many properties in common. Put another way, the schemas involved in classic analogization are abstractions over constructions that are already part of a tightly connected constructional network. The schemas that arise in the process of category genesis, however, link together nodes in the constructional network that were previously only weakly connected. Thus prototypical analogization is more about the *extension* or *change* of preexisting schemas to encompass additional forms, while prototypical category genesis involves the *creation* of new schemas that hold between previously unconnected forms.

It should be immediately noted that this distinction is impossible to uphold in principle, since all schematic changes could be considered new schemas, and new schemas are built by abstracting away from the properties of existing ones. But there does seem to be a useful sense in which the schemas involved in analogical extension and category genesis differ, if only in degree rather than kind. I agree with Traugott & Trousdale (2013, p. 58) that “no construction is entirely new.” As one

reviewer rightly notes (and I paraphrase slightly), “schemas are abstractions over sets of constructions, and can not pre-exist constructions”. Thus I do not claim that the process of category genesis creates schemas *de novo*. Quite the opposite: while category genesis appears *prima facie* to suggest the possibility of a schema arising without members, in actuality the members that constitute it are the disparate constructions across which a pattern has been recognized. This is why I emphasize the cross-constructural nature of the schemas that arise in category genesis: they cross-cut other schemas, and link previously disconnected constructions. At the same time, I do not think that reanalysis never results in a totally new structure, contra Fischer (2007, pp. 123–124) and Itkonen (2005, pp. 110–113). Category genesis seems the perfect counterexample to this claim. While the schema that arises during category genesis is grounded in the properties of existing schemas, and thus not entirely new, the structural changes that the new schema instigates may be completely new, as is the case with Chitimacha preverbs.

With these caveats in mind, I suggest that category genesis is best viewed as a process of reanalysis motivated by the recognition of a new, cross-constructural schema. It is a process similar and parallel to analogization, which is a kind of reanalysis motivated by the recognition of a new analogy between existing constructions. In the same way that Traugott & Trousdale (2010, p. 38) distinguish between analogical thinking (the motivation) and analogization (the mechanism), it seems useful to introduce the difference between *schema recognition* (the motivation), whereby speakers attend to patterns that hold across constructions, and *schematization* (the mechanism), the process whereby the various forms that participate in the pattern come to align morphosyntactically with the newly recognized schema. Like analogical thinking, schema recognition enables but does not entail schematization; and like analogization, schematization is always realized through reanalysis.

Let us now turn to the specifics of category genesis as exhibited by Chitimacha. Since constructions are pairings of form and function, and constructionalization is the creation of new form-meaning pairings (Traugott & Trousdale, 2013, p. 22), it is useful to characterize the development of Chitimacha preverbs with a constructional schema. The novel form that Chitimacha preverbs had was the preverbal syntactic position, and their novel meaning was their contribution of lexical aspect and directionality to the semantics of the verb. This is schematized in (53).

(53) [[PREV<sub>i</sub> v<sub>j</sub>] ↔ [lexical aspect/directionality<sub>i</sub> – SEM<sub>j</sub>]]

Each preverb, however, has its origins in a construction very different from this one. A simplistic representation of the original constructions for each preverb is given in Table 2.

Table 2. The proto-preverb constructions

Preverb	Original construction	
<i>ni</i>	[[NP <sub>DIRECT OBJECT</sub> V]	↔ ['thing' <sub>DIRECT OBJECT</sub> SEM <sub>V</sub> ]]
<i>zap</i>	[[V <sub>SUBORD</sub> V <sub>MAIN</sub> ]]	↔ ['come' SEM <sub>MAIN</sub> ]]
<i>zapš</i>	[[V <sub>SUBORD</sub> V <sub>MAIN</sub> ]]	↔ ['come back' SEM <sub>MAIN</sub> ]]
<i>hi</i>	[[[NP POSTP] V]	↔ [[SEM <sub>NP</sub> 'to' SEM <sub>V</sub> ]]
<i>his</i>	[[[NP POSTP] V]	↔ [[SEM <sub>NP</sub> 'back to' SEM <sub>V</sub> ]]
<i>kap</i>	[[ADV [v]]]	↔ ['up' SEM <sub>V</sub> ]]
<i>ka:p's</i>	[[ADV [v]]]	↔ ['back up' SEM <sub>V</sub> ]]
<i>ka</i>	[[ADV [v]]]	↔ ['across' SEM <sub>V</sub> ]]
<i>kas</i>	[[ADV [v]]]	↔ ['back across' SEM <sub>V</sub> ]]

Each preverb then underwent a series of micro-changes (constructional changes) in both meaning and form, which were outlined in § 3 above. Figure 1 is a semantic map summarizing the semantic changes in the preverbs over time, with older meanings positioned towards the left, and newer ones towards the right.

Of particular note is the point in time when each of the proto-preverbs had developed a directional sense as one of its meanings, represented by the large rectangular box in Figure 1. This allowed for a process of schematization across the different forms. The light paradigmaticity that existed at this point was the basis for the recognition of the new schema, setting the stage for the subsequent schematization via reanalysis that was to follow. The preverb *ni* is given two pathways in this schematic representation, indicating the apparent independence with which the two senses developed. The 'thing' sense of *ni* is excluded from the box because this sense would not have contributed to the semantic schema. The 'thing' sense of *ni* does however contribute to the syntactic component of the preverb schema, since this sense of the proto-preverb was preverbal like all the others.

The changes in meaning to the left of the box in Figure 1 brought about enough similarities across the proto-preverbs that speakers began to recognize a new semantic schema. These 'preparatory'-type changes are termed *pre-constructionalization constructional changes* by Traugott and Trousdale and are said to "enable or 'feed' constructionalization" (Traugott & Trousdale, 2013, p. 27). This is exactly what we have seen here: the pre-constructionalization constructional changes – the semantic shifts in the meanings of the proto-preverbs – are what enabled the schematization of preverbs to take place. Traugott and Trousdale hypothesize that types of pre-constructionalization changes might include expansion of pragmatics, semanticization of that pragmatics, mismatch between form and meaning, and some small distributional changes. The present study supports this view. For example, we have seen an expansion and then semanticization of pragmatics in the way that

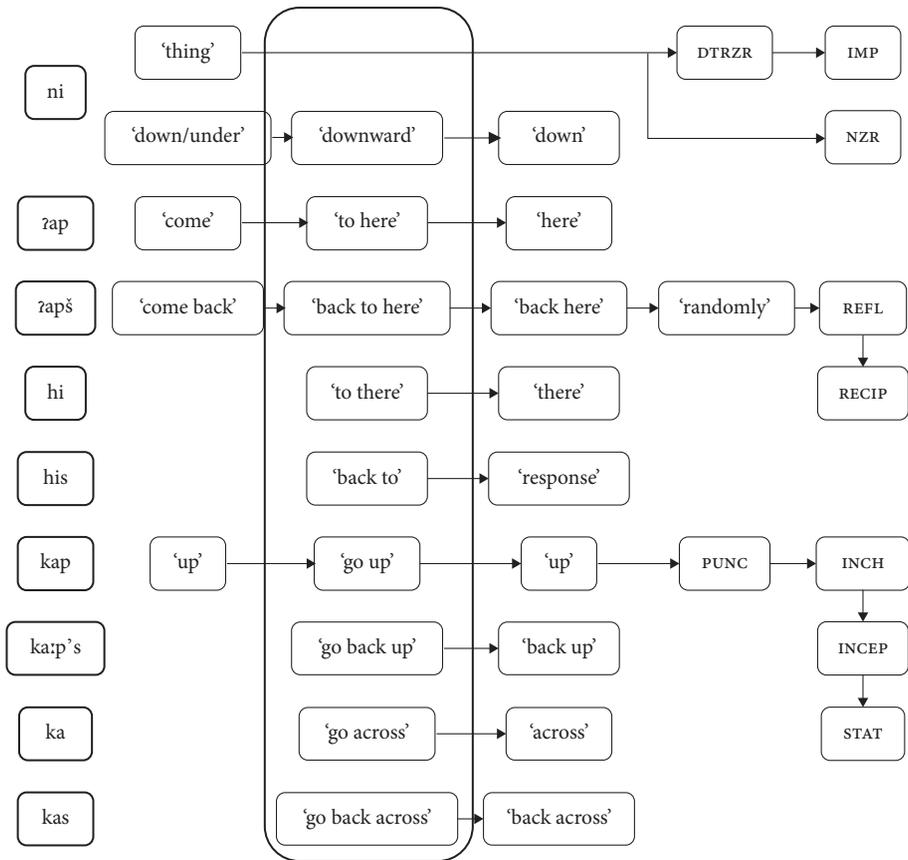


Figure 1. Semantic shifts in the history of Chitimacha preverbs

the meaning of *ʔapš* expanded from a reditive venitive to more figurative senses like ‘wander’ and ‘move randomly’. After first acquiring an implicature where ‘(go and) come back’ pragmatically implied ‘wander’ or ‘move randomly’, that pragmatic interpretation then became conventionalized until it was simply part of the meaning of the word itself.

An open question is to what extent the aspectual contribution of the preverbs was also part of this schema, or whether their aspectual functions developed later, only after they came to be associated more strongly with the verb. If the proto-preverbs did develop such aspectual senses before their constructionalization into preverbs, this would have been one more commonality across the different forms that would have contributed to speakers’ analogization. The fact that the proto-preverbs constructionalized as preverbs rather than as preverbal adverbs suggests

that this was in fact the case. If it was primarily the directional meanings of the proto-preverbs that schematized and not their aspectual meanings, there may have been less of a semantic connection to the verb, and less reason to reanalyze the proto-preverbs as being syntactically bound. If, as I suspect, the aspectual meanings were already part of the schema, however, the semantic connection to the verb would have been stronger, inclining speakers towards reanalyzing the proto-preverbs as syntactically-bound preverbs.

The proto-preverbs had also become schematic in another way, namely that a high frequency of their occurrences were appearing in a position immediately prior to the verb. This fact is apparent from Table 2. Looking at the left-hand side of the constructional schema for each preverb (the form portion of the form-meaning pairing), the one commonality across all the constructions is that the proto-preverb immediately precedes the main verb. In their syntactic properties, too, we have seen in the sections above that certain pre-constructionalization constructional changes took place, such as the change from *ʔap* as an independent verb to one that is more serial in nature and syntactically bound to the main verb, or the reanalysis of *hi* from modifying the object to modifying the verb.

Given the now high degree of schematicity across each of the proto-preverb constructions, it then became possible for speakers to reanalyze the proto-preverbs to bring their syntactic form in line with their schematic meaning. Since each of the proto-preverbs was viewed as belonging to a schema in which the proto-preverbs had a directional or aspectual semantics tightly tied to the verb, their syntactic status came to represent this fact, and they became tightly tied to the verb as well. Over time, the preverbs by and large lost the ability to undergo tmesis and separate syntactically from the verb.

Another change thought by Traugott and Trousdale to accompany constructionalization is a shift in the degree of compositionality of the construction, and we have seen this process at work here as well. While each of the preverbs began as compositional, it was noted in § 3 that many uses of preverbs are lexicalized and semantically non-compositional. Interestingly, this varies drastically from preverb to preverb. Hieber (2014), using the number of headwords in Swadesh's (1939c) dictionary that contain each preverb as a rough heuristic of the compositionality of that preverb, shows that the preverbs vary strongly in their compositionality, independent of their frequency. While *hi* occurs 1298 times in the corpus and *kap* 775 times (the top 2 most frequent preverbs), *hi* participates in just 30 lexicalized preverb + verb combinations, whereas *kap* participates in 183. While it would be inaccurate to say that the preverb + verb construction as a whole is always non-compositional, some of the individual preverb + verb constructions certainly are.

Finally, any additional senses in Figure 1 that developed *after* the schematization/constructionalization of the preverbs should be considered *post-constructionalization constructional changes* (Traugott & Trousdale, 2013). Likely candidates for these types of changes are the development of the reflexive and reciprocal senses of *ʔapš*.

## 5. Conclusion

This paper has addressed the question ‘How could Chitimacha preverbs have developed as a new category in the language, if there were no pre-existing preverbs on which to analogize?’. The diverse origins of the preverbs makes it challenging to analyze the creation of the preverb category as a unified process. It seems that one would need to provide a different diachronic pathway for each preverb, but this still leaves the difficulty of explaining how it is that these different pathways just happened to converge on the same set of properties.

The answer proposed in this paper is that what enabled the creation of the preverb category was the recognition of a generalization across a variety of forms that all happened to share similar properties, specifically, a preverbal syntactic position and a directional semantics. It is not that speakers had nothing on which to abstract over, but rather that the abstraction was across all the proto-preverbs. Speakers recognized a schema that included light paradigmaticity (pairs of plain and reversative forms), directional semantics, and preverbal syntax. The preverbs then underwent reanalysis and changes in form to better match the schema they were seen to be members of, thereby converging in many of their formal properties as a result, a process I term *schematization*. This is a slightly different process than analogization: each preverb was not changing to become more like any particular other preverb; rather, all the preverbs were changing to become more like the schema to which they all belonged.

One question that remains, and one that the synchronic nature of the Chitimacha corpus unfortunately does not allow us to answer with certainty, is to what extent the preverbs arose in tandem versus at different points in time. Could it be that first there were smaller subschemas that subsequently attracted other constructions until they developed into preverbs? Or did the proto-preverbs each develop their preverb-like properties independently, and then form the new preverb category all together? Most likely neither is a fully accurate characterization. To the extent that the preverbs developed via a succession of analogizations across already similar micro-constructions, we can simply call the development of preverbs a

gradual convergence of mutually-reinforcing changes. But given the rather disparate origins of certain preverbs, it seems unlikely that speakers would have formed an analogy between them without there having first been at least some similarities in place. A postposition meaning ‘to’ (the origin of *hi*) is, after all, not in many ways similar to a serial verb meaning ‘come’ (the origin of *zap*). The more similarities each of the preverbs developed independently of each other, the more motivation there would have been for the first analogies between them. To the extent that the first micro-constructions to participate in the preverb schema were dissimilar to each other, this argues for the recognition of schematization as a mechanism of constructionalization alongside analogization.

Regardless of the answer to the above questions, and the status of schematization as a distinct process, the constructional approach to category genesis provides a unified account of the development of Chitimacha preverbs. While there is no one pathway that holds for all of the preverbs, there is a single constructionalization process at work that appropriately applies to all of them. Moreover, it has been demonstrated here that, at least for Chitimacha preverbs, category genesis can be productively treated as just a special case of category change – no additional theoretical machinery is required to explain category genesis above and beyond that posited to explain category shifts more generally.

This paper also adds to the growing body of literature on reconstruction from a constructional perspective (see especially Barðdal et al., 2015), in particular those that focus on syntactic reconstruction (Barðdal & Eythórsson, 2012a, 2012b; Barðdal & Smitherman, 2013; Barðdal et al., 2013; earlier work includes Harris & Campbell, 1995; Gildea, 1992, 2000), which necessarily looks at entire constructions rather than individual morphemes and lexemes alone. In this paper it was also necessary to examine the syntactic context of the proto-preverb constructions, in order to understand what formal features were similar across all of them. It was shown that a preverbal syntax was a crucial property contributing to the schema that developed over the proto-preverbs. Moreover, because the available evidence is entirely language-internal, I hope to have shown that constructional approaches to diachrony can be fruitfully applied to the task of internal reconstruction as well.

In conclusion, diachronic construction grammar is sufficiently robust to handle what seems *prima facie* like an extreme and difficult case – the genesis of entirely new categories out of a collection of otherwise unrelated forms within a language.

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## Appendix. Abbreviations

1	first person	NZR	nominalizer
2	second person	P	patient
3	third person	PERF	perfect
A	agent	PL	plural
ADRED	adreditive	PLACT	pluractional
AND	andative	POST	postposition
AUX	auxiliary	PREV	preverb
AZR	adjectivizer	PROX	proximate
CAUS	causative	PTCP	participle
CIRCLAT	circumlative	PUNC	punctual
COND	conditional	QUOT	quotative
CONT	continuative	RECIP	reciprocal
COP	copula	RED	reditive
DEB	debitive	REFL	reflexive
DEM	demonstrative	REPET	repetitive
DET	determiner	RESP	responsive
DISLAT	dislative	REV	reversive
DIST	distal	SBD	subordinator
DTRZR	detransitivizer	SG	singular
ERG	ergative	SOC	sociative
EXIST	existential	STAT	stative
HAND	do by handling	SUBLAT	sublative
IMP	imperative	SUBORD	subordinative
INCEP	inceptive	SUPLAT	super-lative
INCH	inchoative	SUPRED	superreditive
INTER	interrogative	TEMP	temporal subordinator
INTR	intransitive	TOP	topic marker
IPFV	imperfective	TR	transitive
IRR	irrealis	TRANSLAT	translative
LOC	locative	TRANSRED	transreditive
NEC	necessitative	VEN	venitive
NEG	negation	VERT	vertical position
NF	non-first person		