

Quasi-inflectional and inflectional compounding in Upper Necaxa Totonac

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Compounding, the combination of two potentially independent roots or stems to form a single word-level morphological unit, is generally assumed to be a morphological process restricted in its uses to the realm of word-formation (e.g., Plag 2003; Lieber 2005):

- other processes such as affixation, tonal alternation, reduplication, etc., are found used as means for both word-formation (derivation) and inflection;
- there is no logical reason why compounding should not be just as versatile;
- this represents a gap in the theoretical calculus of morphological processes and their uses which must be explained or filled.

	COMPOUNDING	AFFIXATION	NON-SEGMENTAL
WORD-FORMATION	✓	✓	✓
QUASI-INFLECTION	✓	✓	✓
INFLECTION	✗	✓	✓

Figure 1: Calculus of morphological processes and their uses

This paper purports to fill this gap: data from Upper Necaxa Totonac show that compounding is widely used for the formation of quasi-inflectional and inflectional wordforms.

1. Upper Necaxa Totonac

Upper Necaxa Totonac, a member of the Totonac-Tepehua language family, is spoken by around 3,400 people in the Necaxa River Valley in the Sierra Norte of Puebla State, Mexico.

- a polysynthetic, primarily head-marking language
- relatively free constituent order.

Of particular interest here are verbal constructions such as those shown in (1):

- (1) a. kałwán namintsá tayá tsamá: lú:wą
 kałwán-Ø na-min=tsá tayá-Ø tsamá: lú:wą
 weep-IMPF FUT-come=now take-IMPF that snake
 ‘she weeps_{IMPF}, the snake will come and take her’
- b. kałwayá:ł namintsá tayá tsamá: lú:wą
 kałwán-ya:ł na-min=tsá tayá-Ø tsamá: lú:wą
 weep-stand FUT-come=now take-IMPF that snake
 ‘she’s standing there weeping, the snake will come and take her’ (BC)
- c. kałwamá:ł namintsá tayá tsamá: lú:wą
 kałwán-ma:ł na-min=tsá tayá-Ø tsamá: lú:wą
 weep-PROG FUT-come=now take-IMPF that snake
 ‘she’s weeping, the snake will come and take her’

- the first word of the form in (1a) is the simple imperfective of the verb *kałwán* ‘cry, weep’
- the first word of (1b) is a compound based on the postural stative verb *ya:ł* ‘be standing’
- the form in (1c) is also a compound formed with another postural stative verb, *ma:ł* ‘be lying’

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Compounds of the (1b) type compounds can be formed with any dynamic verb using three of the four postural stative bases (*ya:ʔ* ‘be standing’, *wi:ʔ* ‘be sitting’, and *wakáʔ* ‘be high’),

- they are *asymmetrical multi-verb constructions* (Aikhenvald 2006), formed on a closed class of bases
- this type of compounding is productive and its results are formally and semantically predictable
- it is not word-formation, creating new lexemes that would be included systematically in a dictionary
- it is *quasi-inflection* (Mel’čuk 1993–2000, 2006), the creation of new wordforms which are lexes of the same lexeme as their base, but which do not express obligatory inflectional categories

The form in (1c) is also a compound formed with a postural stative verb, *ma:ʔ* ‘be lying’:

- in this case *ma:ʔ* is a full-fledged part of the aspectual paradigm
- this inflection is implemented through the morphological process of compounding

The use of *ma:ʔ*-compounding for progressive inflection is diachronically related to the use of the posture verbs in quasi-inflection (1b), and finds interesting but inexact parallels in other languages.

2. Upper Necaxa verbs and verbal compounds

The Upper Necaxa verb is highly inflected

- it bears overt marking for agreement with the subject and up to two objects
- three tenses (past, present, and future)
- four moods (indicative, optative, potential, and irrealis)

Verbs can be subdivided into two classes based on their potential for aspectual inflection—*dynamic verbs* (which are inflected for four aspects) and *stative verbs* (which do not take aspectual inflections).

2.1. Dynamic verbs

Dynamic verbs in Upper Necaxa are inflected for four aspects (imperfective, perfective, perfect, and progressive). These inflections are summarized in Table 1, along with their principal exponents:

	IMPERFECTIVE	PERFECTIVE	PERFECT	PROGRESSIVE
INDICATIVE				
FUTURE	na- Ø- -ya:			
PRESENT	Ø- Ø- -ya:	Ø- Ø- -lĭ	Ø- Ø- -nĭ:tán	Ø- Ø- -ma:
PAST	iš- Ø- -ya:		iš- Ø- -nĭ:tán	iš- Ø- -ma:
OPTATIVE/IMPERATIVE				
FUTURE				
PRESENT	ka- -ya:	ka- -lĭ	ka- -nĭ:tán	ka- -ma:
PAST				
POTENTIAL				
FUTURE	na- ti- -ya:			
PRESENT	ti- -ya:	ti- -lĭ	ti- -nĭ:tán	ti- -ma:
PAST	iš- ti- -ya:		iš- ti- -nĭ:tán	iš- ti- -ma:
IRREALIS				
FUTURE			ka- ti- -lĭ	
PRESENT			iš- -lĭ	
PAST			iš- ti- -lĭ	

Table 1: Upper Necaxa TAM combinations for dynamic verbs

- with a handful of exceptions, all dynamic verbs inflect for any of these 23 TAM forms
- the stative verb *ma:ʔ* ‘progressive’ is in complementary distribution with the other aspect markers

Another property of dynamic verbs is their interaction with decausative prefix *ta-*. When added to a transitive dynamic verb with an agentive subject, this prefix creates an intransitive stem in which either

- a) the agent is completely suppressed, promoting the endpoint of the event to subject, or
- b) the verb takes on a reflexive or spontaneous reading

(2) <i>qʔpišči</i> ‘strangle sth with a noose’	<i>taqʔpišči</i> ‘strangle, choke’
<i>qʔsʔawí</i> ‘trick sby, cheat sby’	<i>taqʔsʔawí</i> ‘be tricked’
<i>či</i> ‘tie sth, tie sby up’	<i>tači</i> ‘tie oneself up, get tied up’
<i>ʔtipí</i> ‘muddy sth (water)’	<i>taʔtipí</i> ‘get muddy (water)’
<i>šʔqʔá</i> ‘rub sth, scratch sth’	<i>tašʔqʔá</i> ‘scratch oneself’
<i>šʔa</i> ‘split sth apart, crack sth’	<i>tašʔá</i> ‘split, part’

- the effect of *ta-* with transitive verbs is reminiscent of English “get”-passives and middle expressions with *se* in Spanish and *-sja* in Russian
- such forms are derivational: their meanings are often idiosyncratic or not strictly compositional

With intransitive verbs, the decausative prefix forms a new stem with an inceptive meaning, denoting coming into the state or state of activity expressed by the verb:

(3) <i>ču:yá:</i> ‘be crazy, act crazy’	<i>taču:yá:</i> ‘go crazy’
<i>kiʔpa:štimí:</i> ‘be straight-edged’	<i>takiʔpa:štimí:</i> ‘become straight-edged’
<i>tanʔolumín</i> ‘be rolling hither’	<i>tatanʔolumín</i> ‘come rolling along’
<i>toxó:</i> ‘be immersed’	<i>tatoxó:</i> ‘get immersed, immerse oneself’
<i>makatanán</i> ‘be clouded over’	<i>tamakatanán</i> ‘get foggy’

- the inceptive sense may be related to the lack of strong causation in the basic meaning of these stems
- ‘without agency’ is extended to ‘spontaneously’ when used with activities and states
- the last verb, *makatanán* ‘be clouded over’, belongs to the class of impersonals, expressing natural phenomena (wind, thunder), atmospheric effects (fog, light, odours), and the fruiting of crops

The effects of the decausative prefix will be set aside until the following section.

2.2. Stative verbs

In opposition to dynamic verbs, Upper Necaxa has a much smaller, restricted class of stative verbs

- they express states, postures, and physical configurations
- they have inherently imperfective (that is, temporally unbounded) meanings
- stative verbs inflect only for tense and mood

Within the statives, a distinction can be made between *ordinary stative* and *postural stative* verbs.

Ordinary stative verbs bear suffixes associated with the imperfective aspect, and form dynamic verb stems with the decausative *ta-* (giving an inchoative reading to the derivative) and the causative *ma:-*:

(4) <i>ʔeʔštú</i> ‘be unfastened’	<i>taʔeʔštú</i> ‘come unfastened’	<i>ma:ʔeʔštú</i> ‘unfasten sth’
<i>lakí:</i> ‘be open’	<i>talakí:</i> ‘come open’	<i>ma:lakí:</i> ‘open sth’
<i>lqʔnú:</i> ‘be stuck’	<i>talqʔnú:</i> ‘get stuck’	<i>ma:lqʔnú:</i> ‘get sth stuck’
<i>mqʔaštóʔ-</i> ‘be married’	<i>tamqʔaštóʔ-</i> ‘get married’	<i>ma:mqʔaštóʔ-</i> ‘marry sby off’

There are a few dozen of these, as well as a many forms derived with prefixes referring to bodyparts.

The **postural stative verbs** are *wi:t* ‘be sitting’, *ya:t* ‘be standing’, *ma:t* ‘be lying’, and *waká:t* ‘be high’:

- the first three are used for the postures of humans and animals and configurations of objects that can be metaphorically related to human posture
- *waká:t* ‘be high’ is used for anything above one’s eye-level or an implicit point of reference
- all four are also used as existential predicates (equivalent to the English *there is/are*)
- certain types of objects have preferred choices (*ya:t* for people and trees, *waká:t* for fruit, etc.)
- the default or neutral choice is *wi:t*, which can be used as an existential predicate for any object

Postural stative verbs have the morphology of verbs in the perfective aspect:

	‘be sitting’	‘be standing’	‘be lying’	‘be high’
1SG	<i>ikwí:t</i>	<i>ikyá:t</i>	<i>ikmá:t</i>	<i>ikwaká:t</i>
2SG	<i>wilq</i>	<i>yq:</i>	<i>pq:</i>	<i>wáqg</i>
3SG	<i>wi:t</i>	<i>ya:t</i>	<i>ma:t</i>	<i>waká:t</i>
1PL _{exc}	<i>ikwila:nám</i>	<i>ikya:nám</i>	<i>ikmq:nám</i>	<i>ikwakqaná:m</i>
1PL _{inc}	<i>wila:nám</i>	<i>ya:nám</i>	<i>mq:nám</i>	<i>wakqaná:m</i>
2PL	<i>wila:nantít</i>	<i>ya:nantít</i>	<i>pq:nantít</i>	<i>wakqnantít</i>
3PL	<i>tawila:nát</i>	<i>taya:nát</i>	<i>tamq:nát</i>	<i>tawakqaná:t</i>

Table 2: Postural stative verbs

- note that the plural-subject forms of these verbs take a special stative plural suffix, *-nan*

Like ordinary statives, postural stative verbs form inchoatives with the decausative prefix *ta-*; however, they remain stative in terms of aspectual inflection and have separate dynamic forms, as in Table 3:

STATIVE	INCHOATIVE	DYNAMIC
<i>wi:t</i> ‘3 is sitting’	<i>tawí:t</i> ‘3 sits down’	<i>tawilá</i> ‘3 sits’
<i>ya:t</i> ‘3 is standing’	<i>tayá:t</i> ‘3 stands up’	<i>taryá</i> ‘3 stands’
<i>ma:t</i> ‘3 is lying’	<i>tamá:t</i> ‘3 lies down’	<i>tamá:</i> ‘3 lies’
<i>waká:t</i> ‘3 is high’	<i>tawaká:t</i> ‘3 goes up’	<i>tawaká</i> ‘3 is high’

Table 3: Stative, inchoative, and dynamic forms of posture verbs

- the stative and dynamic roots appear to be near-synonyms
- the dynamic forms have the full range of aspectual inflections

Each form in Table 3 can be a base for derivation, often taking bodypart prefixes like *?e-* ‘back’:

STATIVE	INCHOATIVE	DYNAMIC
<i>?e:wí:t</i>	<i>?e:tawí:t</i>	<i>?e:tawilá</i>
‘3 is sitting on sth’s back’	‘3 sits down on sth’s back’	‘3 sits on sth’s back’
<i>?e:ya:t</i>	<i>?e:tayá:t</i>	<i>?e:taryá</i>
‘3 is standing on sth’s back’	‘3 stands up on sth’s back’	‘3 stands on sth’s back’
<i>?e:ma:t</i>	<i>?e:tamá:t</i>	<i>?e:tamá:</i>
‘3 is lying on sth’s back’	‘3 lies down on sth’s back’	‘3 lies on sth’s back’
<i>?e:waká:t</i>	<i>?e:tawaká:t</i>	<i>?e:tawaká</i>
‘3 is high on sth’s back’	‘3 goes up on sth’s back’	‘3 is high on sth’s back’

Table 4: Stative, inchoative, and dynamic forms of verbs based on postural statives

- adding bodypart prefixes to postural stative bases creates transitive forms
- usually, the direct object of the verb is the possessor of the bodypart (5a-i) and (5b-i)
- the direct object can also be located on a bodypart belonging to the subject (5a-ii) and (5b-ii)

- (5) a. *kimpeʔštuwáką*
kin-peʔštu-wáką
1OBJ-shoulder-be:high:2SG.SJ
(i) ‘I am on your shoulders’
(ii) ‘you are on my shoulders’
- b. *ikpeʔštuwakán*
ik-peʔštu-wakán-n
1SG.SJ-shoulder-be:high-2OBJ
(i) ‘I am on your shoulders’
(ii) ‘you are on my shoulders’

- choice of the verb form in such cases is generally governed by discourse saliency
- transitive stative verbs (and their derivatives) take regular object-agreement morphology.

Any of the forms in Table 4 can form an inceptive with the decausative prefix *ta-*:

STATIVE	INCHOATIVE	DYNAMIC
<i>taʔe:wirł</i>	<i>taʔe:tawirł</i>	<i>taʔe:tawilá</i>
‘3 comes to be sitting on sth’s back’	‘3 comes to sit on sth’s back’	‘3 comes to sit on sth’s back’
<i>taʔe:yarł</i>	<i>taʔe:tayárł</i>	<i>taʔe:taryá</i>
‘3 comes to be standing on sth’s back’	‘3 comes to stand on sth’s back’	‘3 comes to stand on sth’s back’
<i>taʔe:marł</i>	<i>taʔe:tamá:ł</i>	<i>taʔe:tamá:</i>
‘3 comes to be lying on sth’s back’	‘3 comes to lie on sth’s back’	‘3 comes to lie on sth’s back’
<i>taʔe:wakáł</i>	<i>taʔe:tawakáł</i>	<i>taʔe:tawaká</i>
‘3 comes to be high on sth’s back’	‘3 comes to go up on sth’s back’	‘3 comes to be up on sth’s back’

Table 5: Stative, inchoative and dynamic forms of verbs based on postural statives

This gives six possible forms for a verb based on any one of the postural statives:

- (6) a. *taʔe:wakánáł spu:nín nakčik*
ta-ʔe:-waká-nan-ł spu:n-nin nak=čik
3PL.SJ-back-be.high-ST.PL-PFV bird-PL LOC=house
‘the birds are up on the house’¹
- b. *tataʔe:wakánáł spu:nín nakčik*
ta-ta-ʔe:-waká-nan-ł spu:n-nin nak=čik
3PL.SJ-DECAUS-back-be.high-ST.PL-PFV bird-PL LOC=house
‘the birds come to be up on the house’
- c. *taʔe:tawakáł spu:nín nakčik*
ta-ʔe:-ta-waká-ł spu:n-nin nak=čik
3PL.SJ-back-DECAUS-be.high-PFV bird-PL LOC=house
‘the birds alight on the house’
- d. *tataʔe:tawakáł spu:nín nakčik*
ta-ta-ʔe:-ta-waká-ł spu:n-nin nak=čik
3PL.SJ-DECAUS-back-DECAUS-be.high-PFV bird-PL LOC=house
‘the birds come to alight on the house’

¹ Although the verbs in (6) are transitive, consultants gave these forms with the locative clitic *nak=* introducing what might otherwise have been the direct object. This is a function of animacy, as similar examples with animates (e.g., *ʔe:waká:ł kawa:yúj* ‘it is on the horse’s back’, *kinʔe:waká:ł* ‘it is on my back’) express the possessors of the bodyparts as direct objects.

e. taʔe:tawaká spu:nín nakčik
 ta-ʔe:-tawaká-∅ spu:n-nin nak=čik
 3PL.SJ-back-be.high-IMPF bird-PL LOC=house
 ‘the birds are up on the house’

f. tataʔe:tawaká spu:nín nakčik
 ta-ta-ʔe:-tawaká-∅ spu:n-nin nak=čik
 3PL.SJ-DECAUS-back-be.high-IMPF bird-PL LOC=house
 ‘the birds come to be up on the house’

- (6a) shows a plain stative verb, ʔe:wakáʔ ‘3 is up on sth’s back’, with a 3 plural subject
 - plural subjects of stative verbs in all persons require the stative plural suffix *-nan*
- (6b) shows the inceptive form of the same verb
 - this also requires *-nan* with plural subjects
- (6c) and (6d) show the inchoative and the inceptive-inchoative forms of the verb
 - neither inchoative requires the stative plural suffix with plural subjects
- (6e) and (6f) show the dynamic and the inceptive-dynamic forms

(6a) and (6b) seem to be nearly synonymous with (6e) and (6f), respectively; the latter, however, can be inflected for aspect—the imperfective [(6e) and (6f) above], the perfective [(7a) and (7b)], the progressive[(7c) and (7d)], and the perfect [(7e) and (7f)]:

(7) a. taʔe:tawakáʔ spu:nín nakčik
 ta-ʔe:-tawaká-ʔ spu:n-nin nak=čik
 3PL.SJ-back-be.high-PFV bird-PL LOC=house
 ‘the birds are_{PFV} up on the house’

b. tataʔe:tawaká spu:nín nakčik
 ta-ta-ʔe:-tawaká-ʔ spu:n-nin nak=čik
 3PL.SJ-DECAUS-back-be.high-PFV bird-PL LOC=house
 ‘the birds come_{PFV} to be up on the house’

c. taʔe:tawakamaḡ:náʔ spu:nín nakčik
 ta-ʔe:-tawaká-maḡ:-nan-ʔ spu:n-nin nak=čik
 3PL.SJ-back-be.high-PROG-ST.PL-PFV bird-PL LOC=house
 ‘the birds are being up on the house’

d. tataʔe:tawakamaḡ:náʔ spu:nín nakčik
 ta-ta-ʔe:-tawaká-maḡ:-nan-ʔ spu:n-nin nak=čik
 3PL.SJ-DECAUS-back-be.high-PROG-ST.PL-PFV bird-PL LOC=house
 ‘the birds are coming to be up on the house’

e. taʔe:tawakaní: spu:nín nakčik
 ta-ʔe:-tawaká-ní: spu:n-nin nak=čik
 3PL.SJ-back-be.high-PF bird-PL LOC=house
 ‘the birds have been up on the house’

f. tataʔe:tawakaní: spu:nín nakčik
 ta-ta-ʔe:-tawaká-ní: spu:n-nin nak=čik
 3PL.SJ-DECAUS-back-be.high-PF bird-PL LOC=house
 ‘the birds have come to be up on the house’

- aspectual inflection takes scope over the entire complex
- all of the forms built from three of the four postural stative verbs are used regularly and productively as the bases of compound verbs like (1b) which themselves have decausative forms
- this results in a complex system of quasi-inflectional compounds, discussed in Section 2.3

The fourth postural stative, *ma:t* ‘be lying’, also forms quasi-inflectional compounds, but has further grammaticized and has become the regular exponent of the progressive aspect; discussion of *ma:t* inflectional and quasi-inflectional compounds will be deferred until Section 2.4.

2.3. Quasi-inflectional compounds

Three of the postural stative verbs—*wi:t*, *ya:t*, and *waká:t*—are used regularly and productively as the bases for *quasi-inflectional compounds*, asymmetrical compounds whose left hand member is a dynamic verb and whose base is a postural stative verb.

- these compounds describe events in which the action expressed by the dynamic verb is being performed in the posture designated by the postural-stative base
- compounds formed on these bases are completely productive and semantically transparent
- they seem best treated not as new lexemes but as quasi-inflectional stems belonging to the same lexeme as the dynamic member of the compound

Through combination with posture verbs, any dynamic verb has three additional quasi-inflectional forms:

- (8) a. *s'ólú* ‘urinate’
s'ólúwi:t ‘be sitting urinating’
s'óluyá:t ‘be standing urinating’
s'ólúwaká:t ‘be up high urinating’
- b. *á?pupú* ‘bubble, boil’
á?pupuwi:t ‘be sitting boiling (squat container)’
á?pupuyá:t ‘be standing boiling (tall container)’
á?pupuwaká:t ‘be up high boiling’
- c. *čaš-* ‘cradle sth in arms’
čašwi:t ‘be sitting cradling sth in one’s arms’
čašyá:t ‘be standing cradling sth in one’s arms’
čašwaká:t ‘be up high cradling sth in one’s arms’
- d. *wa* ‘eat sth’
wawí:t ‘be sitting eating sth’
wayá:t ‘be standing eating sth’
wawaká:t ‘be up high eating sth’

The choice of postural stative base in most cases depends on the configuration of the subject.

- if the subject is human or a higher animate—(8a), (8c) and (8d)—then the base is chosen according to the subject’s physical posture (sitting or standing) or relative vertical position
- for non-humans and inanimates, as in (8b), the choice between *wi:t* and *ya:t* depends more on the physical configuration of the object

For some transitive verbs, the choice of postural stative base depends on the configuration of the object:

- (9) a. *qʔttamá:* ‘glue sth’
qʔttama:wí:ʔ ‘glue sth so that it is in a pile’ (i.e., “sitting”)
qʔttama:yá:ʔ ‘glue sth so that it is perpendicular to point of attachment’
qʔttama:wakáʔ ‘glue sth so that it is up high’
- b. *lqʔštqʔó* ‘nail sth’
lqʔštqʔowí:ʔ ‘nail sth so that it is fixed horizontally’
lqʔštqʔoyá:ʔ ‘nail sth so that it is upright’
lqʔštqʔowakáʔ ‘nail sth so that it is up high’
- c. *štqʔá* ‘press sth out’
štqʔawí:ʔ ‘press sth out so that it sits on a horizontal surface’²
štqʔawakáʔ ‘press sth out so that it is up high (e.g., on a tabletop)’
- d. *má:ʔé:* ‘uncover sth’
má:ʔerwí:ʔ ‘leave something uncovered (squat object)’
má:ʔeryá:ʔ ‘leave something uncovered (tall object)’
má:ʔerwakáʔ ‘leave something uncovered up high’

- these are verbs high in semantic transitivity where the configuration of the object is salient

Like simplex postural stative verbs, quasi-inflectional compounds have inchoative and dynamic forms:

- | | |
|--|------------|
| (10) a. <i>qʔpupuwí:ʔ</i> ‘be sitting boiling’ | STATIVE |
| <i>qʔpuputawí:ʔ</i> ‘begin to be sitting boiling’ | INCHOATIVE |
| <i>qʔpuputawilá</i> ‘be sitting boiling’ | DYNAMIC |
| <i>qʔpupuyá:ʔ</i> ‘be standing boiling’ | STATIVE |
| <i>qʔpuputayá:ʔ</i> ‘begin to be standing boiling’ | INCHOATIVE |
| <i>qʔpuputa:yá</i> ‘be standing boiling’ | DYNAMIC |
| <i>qʔpupuwakáʔ</i> ‘be up high boiling’ | STATIVE |
| <i>qʔpuputawakáʔ</i> ‘begin to be up boiling’ | INCHOATIVE |
| <i>qʔpuputawaká</i> ‘be up high boiling’ | DYNAMIC |
| b. <i>qʔttama:wí:ʔ</i> ‘glue sth so that it is in a pile’ | STATIVE |
| <i>qʔttama:tawí:ʔ</i> ‘glue sth so that begins to be in a pile’ | INCHOATIVE |
| <i>qʔttama:tawilá</i> ‘glue sth so that it is piled’ | DYNAMIC |
| <i>qʔttama:yá:ʔ</i> ‘glue sth so it is perpendicular to point of attachment’ | STATIVE |
| <i>qʔttama:tayá:ʔ</i> ‘glue sth so it begins to be perpendicular to p.o.a.’ | INCHOATIVE |
| <i>qʔttama:ta:yá</i> ‘glue sth so it is perpendicular to p.o.a.’ | DYNAMIC |
| <i>qʔttama:wakáʔ</i> ‘glue sth so that it is up high’ | STATIVE |
| <i>qʔttama:tawakáʔ</i> ‘glue sth so that it begins to be up high’ | INCHOATIVE |
| <i>qʔttama:tawaká</i> ‘glue sth so that it is up high’ | DYNAMIC |

- the dynamic forms seem to be nearly synonymous with plain stative forms

Plain, inchoative, and dynamic forms of quasi-inflectional compounds can take the decausative prefix *ta-* on the left edge of the stem, giving each quasi-inflectional compound a total of six possible forms:

² The form *štqʔayá:ʔ* is semantically anomalous, as it doesn’t seem possible (at least to my consultants) to press something out so that it is perpendicular to its point of support or attachment.

- c. $\text{a}^? \text{p}^? \text{p}^? \text{u}^? \text{tawilá}\ddot{\text{t}} \text{ška:n}$
 $\text{a}^? \text{--} \text{p}^? \text{p}^? \text{--} \text{tawilá}\text{--} \text{l}^? \text{--}$ ška:n
 head–bubble–sit–PFV water
 ‘the water sits_{PFV} boiling’
- d. $\text{ta}^? \text{a}^? \text{p}^? \text{p}^? \text{u}^? \text{tawilá}\ddot{\text{t}} \text{ška:n}$
 $\text{ta}\text{--} \text{a}^? \text{--} \text{p}^? \text{p}^? \text{--} \text{tawilá}\text{--} \text{l}^? \text{--}$ ška:n
 DECAUS–head–bubble–sit–PFV water
 ‘the water comes_{PFV} to a boil sitting’
- e. $\text{a}^? \text{p}^? \text{p}^? \text{u}^? \text{tawilamá}\ddot{\text{t}} \text{ška:n}$
 $\text{a}^? \text{--} \text{p}^? \text{p}^? \text{--} \text{tawilá}\text{--} \text{ma}\ddot{\text{t}} \text{--}$ ška:n
 head–bubble–sit–PROG water
 ‘the water is boiling sitting’
- f. $\text{ta}^? \text{a}^? \text{p}^? \text{p}^? \text{u}^? \text{tawilamá}\ddot{\text{t}} \text{ška:n}$
 $\text{ta}\text{--} \text{a}^? \text{--} \text{p}^? \text{p}^? \text{--} \text{tawilá}\text{--} \text{ma}\ddot{\text{t}} \text{--}$ ška:n
 DECAUS–head–bubble–sit–PROG water
 ‘the water is coming to a boil sitting’
- g. $\text{a}^? \text{p}^? \text{p}^? \text{u}^? \text{tawilan}^? \text{ška:n}$
 $\text{a}^? \text{--} \text{p}^? \text{p}^? \text{--} \text{ta}\text{--} \text{wilá}\text{--} \text{n}^? \text{--}$ ška:n
 head–bubble–DECAUS–sit–PF water
 ‘the water has boiled sitting’
- h. $\text{ta}^? \text{a}^? \text{p}^? \text{p}^? \text{u}^? \text{tawilan}^? \text{ška:n}$
 $\text{ta}\text{--} \text{a}^? \text{--} \text{p}^? \text{p}^? \text{--} \text{ta}\text{--} \text{wilá}\text{--} \text{n}^? \text{--}$ ška:n
 DECAUS–head–bubble–DECAUS–sit–PF water
 ‘the water has come to a boil sitting’

The same is true of the other compounds formed from postural statives, $\text{a}^? \text{p}^? \text{p}^? \text{u}^? \text{yá}\ddot{\text{t}}$ and $\text{a}^? \text{p}^? \text{p}^? \text{u}^? \text{waká}\ddot{\text{t}}$, giving the verb $\text{a}^? \text{p}^? \text{p}^? \text{u}^?$ a total of (including its ordinary aspectual inflections) 40 quasi-inflectional forms.

When added to transitive quasi-inflectional compounds such as $\text{a}^? \text{t}^? \text{a}^? \text{mawaká}\ddot{\text{t}}$ ‘glue sth so that it is up high’, the decausative detransitivizes the compound, suppressing the agent:

- (13) a. $\text{a}^? \text{t}^? \text{a}^? \text{mawaká}\ddot{\text{t}} \text{iščík}$
 $\text{a}^? \text{t}^? \text{a}^? \text{má}\text{--} \text{waká}\ddot{\text{t}}$ iščík
 glue–be.high 3PO–house
 ‘it glues its house (nest) so it is up high’
- b. $\text{ta}^? \text{a}^? \text{t}^? \text{a}^? \text{mawaká}\ddot{\text{t}} \text{iščík}$
 $\text{ta}\text{--} \text{a}^? \text{t}^? \text{a}^? \text{má}\text{--} \text{waká}\ddot{\text{t}}$ iščík
 DECAUS–glue–be.high 3PO–house
 ‘its house gets glued so it is up high’
- c. $\text{a}^? \text{t}^? \text{a}^? \text{matawaká}\ddot{\text{t}} \text{iščík}$
 $\text{a}^? \text{t}^? \text{a}^? \text{má}\text{--} \text{ta}\text{--} \text{waká}\ddot{\text{t}}$ iščík
 glue–DECAUS–be.high 3PO–house
 ‘it glues its house so it comes to be high’

- d. taʔtamawakáʔ iščík
 ta-aʔtamá-ta-wakáʔ iš-čík
 DECAUS–glue–DECAUS–be.high 3PO–house
 ‘its house gets glued so it comes to be high’
- e. aʔtamatawaká iščík
 aʔtamá-tawaká-∅ iš-čík
 glue–be.high–IMPF 3PO–house
 ‘it glues its house so it is up high’
- f. taʔtamatawaká iščík
 ta-aʔtamá-tawaká-∅ iš-čík
 DECAUS–glue–be.high–IMPF 3PO–house
 ‘its house gets glued so it is up high’

And, of course, the forms in (13e) and (13f) have all four aspectual forms:

- (14) a. aʔtamatawaká iščík
 aʔtamá-tawaká-∅ iš-čík
 glue–be.high–IMPF 3PO–house
 ‘it glues its house so it is up high’
- b. taʔtamatawaká iščík
 ta-aʔtamá-tawaká-∅ iš-čík
 DECAUS–glue–be.high–IMPF 3PO–house
 ‘its house gets glued so it is up high’
- c. aʔtamatawakáʔ iščík
 aʔtamá-tawaká-lj iš-čík
 glue–be.high–PFV 3PO–house
 ‘it glued its house so it is up high’
- d. taʔtamatawakáʔ iščík
 ta-aʔtamá-tawaká-lj iš-čík
 DECAUS–glue–be.high–PFV 3PO–house
 ‘its house got glued so it is up high’
- e. aʔtamatawakamáʔ iščík
 aʔtamá-tawaká-maʔ iš-čík
 glue–be.high–PROG 3PO–house
 ‘it’s glueing its house so it is up high’
- f. taʔtamatawakamáʔ iščík
 ta-aʔtamá-tawaká-maʔ iš-čík
 DECAUS–glue–be.high–PROG 3PO–house
 ‘its house is getting glued so it is up high’
- g. aʔtamatawakanj: iščík
 aʔtamá-tawaká-nj: iš-čík
 glue–be.high–PF 3PO–house
 ‘it has glued its house so it is up high’

- h. taqʔtamatawakaní: iščik
 ta-aʔtamá-tawaká-nj: iš-čik
 DECAUS-glue-be.high-PF 3PO-house
 ‘its house has gotten glued so it is up high’

As with the dynamic forms of posture verbs, aspectual inflection takes scope over the entire compound.

2.4. Inflectional compounds

The postural stative verb *marʔ* has been co-opted into the aspectual system as the marker of the progressive, so that what were once quasi-inflectional compounds are now best analyzed as inflections.

- all dynamic verbs take *marʔ*, which is in complementary distribution with other aspect markers
- unlike quasi-inflectional compounds, the progressive forms of verbs do not specify that the subject or object of the verb is in a particular posture or configuration
- the dynamic forms of all the postural stative verbs, which are never left-hand members of quasi-inflectional compounds, have progressive forms with *marʔ*:

- (15) a. iktawakamá:ʔ nakmą:ʔsti:čawá: čik
 ik-tawaká-marʔ na-ik-mą:ʔsti:čawá: čik
 1SG.SJ-be.high-PROG FUT-1SG.SJ-put.roof.on house
 ‘I’m up here, I’m going to roof the house’ (LB)
- b. šʔe:tawilamá:ʔ kawaryúx ma:mąʔawási:ʔ
 iš-ʔe:-tawilá-marʔ kawaryúx ma:-mąʔawás-i:-lǐ
 PAST-back-sit-PROG horse CS-fall-CS-PFV
 ‘he was sitting on the horse’s back and it threw him’ (LB)
- c. tata:yamą:nampalaʔo:ná:ʔ
 ta-ta:yá-mą:-nan-pala-ʔo:-nan-lǐ
 3PL.SJ-stand-PROG-ST.PL-RPT-TOT-ST.PL-PFV
 ‘they are all standing up again’ (MM)³

The inchoative form of *marʔ*, *tamá:ʔ*, is also found as the base of compound verbs which are neutral as to the posture of their subjects or objects:

- (16) a. kiwaníką mat kaikątsi:tamá:ʔ
 kin-wan-ní-ką mat ka-ik-ątsí:-ta-marʔ
 1OBJ-say-BEN-IDF:PFV QTV OPT-1SG.SJ-know-DECAUS-lie
 ‘they told me so that I would know’ (PS)
- b. kakątsi:tapá: urtsá kli:wanimá:n
 ka-ątsí:-ta-pa: urtsá ik-li:-wan-ní-ma:-n
 OPT-know-DECAUS-lie:2SG.SJ:PFV that 1SG.SJ-INST-say-BEN-PROG-2OBJ
 ‘I am telling you that so you will know it’ (RM)

- (16b) uses the 2 form of *tamá:ʔ* which, like *marʔ*, is suppletive with respect to the 1 and 3 forms

The fact that (16a) and (16b) do not specify a posture for their subjects suggests that *tamá:ʔ* may also form inflectional compounds—and that Upper Necaxa may have a fifth aspect, the inchoative progressive.

³ The iteration of the stative plural suffix is optional and has to do with the presence of the totalitative suffix in combination with the perfective marker (Beck 2008).

Posture-neutral compounds based on the dynamic form of *ma:t*, *tamá:t*, seem not to be attested; however,

- the perfective and the inchoative form of *ma:t* are homophonous (*tamá:t*)
- it is not always clear whether forms like those in (16) are inchoative compounds based on *tamá:t* or dynamic compounds based on the perfective form of *tamá:*

Judging by its gloss, (17) seems to have the meaning we would expect from an inchoative compound rather than a compound based on the dynamic stem:

- (17) *ka:lqʔʔa:wa:ntaqʔčqʔo:tamá:t*
ka-lqʔʔa:wá:n-taqʔčqʔó:-ta-ma:t
 OPT-wander-stroll-DECAUS-be.lying
 ‘let him go be strolling aimlessly around over there!’ (RM)
 (i.e., ‘let him begin to be strolling aimlessly around over there!’)

(18) is also glossed as we might expect an inceptive-inchoative compound to be glossed:

- (18) *nakmaqʔštéʔa kireloj, nakimáški: tumín makstínáx, paʔ xa:tsák min laʔma:štú*
katamaʔštéʔnitamán
na-ik-maqʔštéʔ-a kin-reloj na-kin-máški: tumín
 FUT-1SG.SJ-leave-IMPF 1PO-watch FUT-1OBJ-give:2SG.SJ:PFV money
makstínáx paʔ xa:=tsá ik-min laʔma:štú
 a.bit if NEG=now 1SG.SJ-come get.out.of.hock
ka-ta-maqʔštéʔ-ní-tamá:t-n
 OPT-DECAUS-leave-BEN-lie.down-2OBJ

‘I’ll leave my watch, and then you give me a bit of money, (and) if I don’t come to get it out of hock, let it stay with you!’ (i.e., ‘let it begin to be with you [= be yours]’) (LB)

- glosses aren’t particularly reliable evidence for such subtleties of meaning
- these glosses are an English translation of a Spanish translation of an Upper Necaxa sentence, Spanish being the native language of neither the linguist who translated into English nor the consultant who translated into Spanish

However, the absence in the corpus and elicitation of putative forms based on *tamá:* in aspects other than the perfective in which the meaning of ‘lie’ is not present supports the idea that compounds based on the dynamic verb in a purely aspectual role are non-existent.

In addition to purely aspectual uses of *ma:t*, there are also cases in which a *ma:t* compound functions in exactly the same way as other quasi-inflectional compounds based on postural stative verbs do.

- in these forms the action expressed by the left hand member of the compound is performed while in the posture described by the base

- (19) *naktaqʔʔapatamá:t naktámaq*
na-ik-ta-qʔ-ʔapá-ta-ma:t nak=támaq
 FUT-1SG.SJ-DECAUS-head-cover-DECAUS-be.lying LOC=bed
 ‘I’m going to cover up my head and lie down in the bed’ (RM)

- it is clear that this is the inchoative stem, because the verb is in the future tense, where the only possible aspectual inflection for a dynamic base would be the imperfective (see Table 1 above)
- if the compound were based on the dynamic stem, the correct form would be *naktaqʔʔapatamá:*
- the inchoative stem, *tamá:t*, on the other hand, is not actively inflected for aspect
- its future form (and the future of its compounds) is created by simply adding the future prefix *na-*

There are also numerous examples of quasi-inflectional compounds that are based on the dynamic stem *tamá:*, inflected for various aspects:

- (20) a. kama:s'ólúnj: lí:kwa xa: nas'ólutamá: naktáma
 ka-ma:-s'ólú-nj: lí:kwa xa: na-s'ólú-tamá:-Ø nak=táma
 OPT-CS-urinate-2SG.SJ:PFV or.else NEG FUT-urinate-lie-IMPF LOC=bed
 'make him pee or else he'll wet the bed!' (PS)
- b. nalakmastamá:
 na-lak-mas-tamá:-Ø
 FUT-INTNS-rot-lie-IMPF
 'it will be lying there rotten' (LB)
- c. a?puntama:má:† tsamá: kíwǐ
 a?pún-tamá:-ma:† tsamá: kíwǐ
 bud-lie-PROG that tree
 'the (fallen) tree is lying there budding' (RM)
- d. akmastama:nǐ: tsamá: šamásni kíwǐ
 ak-mas-tamá:-nǐ: tsamá: ša-mas-nǐ kíwǐ
 head-rot-bud-lie-PF that DTV-rot-NML tree
 'that rotten wood has decomposed lying around in piles' (LB)

- the lexical meaning of the verb 'be lying' is part of the intended meaning of the expression
- these are exactly parallel to compounds based on the other three postural stative verbs and different from the posture neutral uses of *ma:†* in the progressive aspect and in (16)–(18)

This means that it is necessary to distinguish two different, homophonous (and, of course, cognate) roots

- one meaning 'be lying' which behaves in a manner exactly parallel to the other three postural stative bases and which has all three stem-forms (stative, inchoative, and dynamic)⁴ and
- another which means only 'progressive' and has only two forms (stative and inchoative)

Such a situation, in which a "normal" lexical item has a homophonous and cognate form used to signify an abstract grammatical meaning as part of inflection is, of course, a familiar one

- this the case of auxiliaries in many languages (e.g., Eng. *have* 'possess' vs. *have* 'perfect aspect')⁵

What is distinctive about Upper Necaxa is that, rather than free auxiliaries, the language uses a strategy of compounding for the expression of the progressive aspect, while at the same time preserving the quasi-inflectional compounding processes that gave rise to this novel aspect of the inflectional system.

3. Conclusions

The productivity of the postural stative bases in forming quasi-inflectional compounds, combined with the equally-productive use of *ta-*, creates for each root a large set of quasi-inflectional stems:

- a quasi-inflectional stem formed on each of the four postural stative bases,
- a decausative formed on the root itself

⁴ It is possible, of course, that this form of the root does not have a plain stative form when used in quasi-inflectional compounds, as this would be homophonous with the progressive form of the same lexeme. To be sure, we would need to find contextualized examples of a dynamic root plus *ma:†* in which there is an unequivocal sense of 'doing while lying down' which can not be attributed to the meaning of the dynamic verb or strong contextual coercion.

⁵ I am indebted to Igor Mel'čuk for this observation.

- a decausative form of each of the quasi-inflectional compounds
- all of the quasi-inflectional compounds also have three forms (stative, inchoative, and dynamic)
- all of the stems formed in this way, as well as the root itself, are then inflected for a variety of categories—including that of aspect
- one of the aspects is marked through an inflectional compounding process based on a grammaticized form of one of the posture verbs, *ma:t*

This grammaticized form has been reanalyzed as a progressive marker, although it retains the morphological properties of the independent postural stative verb, including

- (semantically empty) perfective morphology
- the use of the plural stative suffix, and
- an additional inchoative form

The fact that the compound base for the progressive inflection also has an inchoative form suggests that Upper Necaxa aspectual paradigms might require a fifth category, inchoative-progressive.

The absence of progressive compounds based on dynamic forms of *ma:t* may follow from the fact that a compound based on the dynamic form of a verb would require that the base itself be marked for aspect. This would result in the verb either:

- bearing two values of a single inflectional category (both *ma:t* in its dynamic form marking ‘progressive’ and, say, an imperfective inflection of *ma:t*), or
- the aspectual inflection of the dynamic form of *ma:t* might cancel out the meaning ‘progressive’ and take scope over the entire compound, putting this form into “competition” with a synonymous and formally simpler marking of the same value of the category (the aspectual suffix itself)

Upper Necaxa represents an unusual case of a morphological process, compounding, usually associated with word-formation, being pressed into service as a strategy for creating inflected wordforms. While this might seem surprising at first, there is actually nothing in principle that rules it out

- the use of lexemes derived from autonomous lexical items to carry out inflection is well-known from many languages which use auxiliaries descended from independent words for this purpose

What is especially interesting in Upper Necaxa case is that the intermediate stages in the process leading up to this situation are still present in the language, including the immediate precursors of the system (the quasi-inflectional compounds). There are similar-looking cases in other languages:

- Epps (2008) reports that in Hup, a Maku language of the Northwestern Amazon, grammaticized verbal compounds productively encode Aktionsart and other quasi-grammatical meanings
 - in Hup the compounding process still falls short of being part of the inflectional system
- Guillaume (2008) notes that many but not all of the Aktionsart suffixes in Cavineña, a Tacanan language of Bolivia, have counterparts that are independent verbs
 - in Cavineña these suffixes do not appear to be part of the inflectional system
 - as in Upper Necaxa, the same form-class of morphemes contains both fully bound elements (affixes) and elements that are (or were recently) compounded or serialized verbs

Another observation of typological interest is that the Upper Necaxa quasi-inflectional compounds are clear examples of the “single-word asymmetrical verb series” (de Reuse 2006; Aikhenvald 2010), but

- this constitutes a counter-example to de Reuse’s observation that highly polysynthetic languages should not make use of such constructions, opting instead for affixation

The Upper Necaxa pattern has yet to be extensively documented for other polysynthetic families:

- this may indicate that it is an unstable situation, and therefore less likely to be observed at any given point in time, or
- it may simply be that the situation exists, but we have just missed it (see, e.g., Park 1994; Kansakar 1994; Zavala 2006; Coupe 2008; Epps 2008; and Guillaume 2008)

As research progresses and investigators pay more attention to issues of compounding and the grammaticization of verbal roots, the list of potential counter-examples to de Reuse's observation seems to be growing. The final answer awaits further reconstruction of the history of polysynthetic language families, and serious attention to the processes of compound-formation in a wider range of languages.

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Abbreviations

1, 2, 3 = first-, second-, third-person; BEN = benefactive; CS = causative; DECAUS = decausative; DTV = determinative; FUT = future; IDF = indefinite; IMP = imperfective; INST = instrumental; INTNS = intensive; LOC = locative; NEG = negative; NML = nominalizer; OBJ = object; OPT = optative; PF = perfect; PFV = perfective; PL = plural; PO = possessive; PRO = progressive; QTV = quotative; RPT = repetitive; SG = singular; SJ = subject; ST.PL = stative plural; TOT = totalitive.

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