Variable ordering of affixes in Upper Necaxa Totonac[*]

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Although the relative ordering of affixes within a wordform is generally considered to be invariant, recent work has suggested that in some languages affix-order can vary and may be determined by conditions other than a fixed affixal template. In Upper Necaxa Totonac, a number of affixes show variable relative ordering, the conditioning factors ranging from purely formal rules governing the co-expression of inflectional and quasi-inflectional categories to considerations of semantic scope and free (or perhaps stylistic) variation.

Although the relative ordering of affixes within a wordform is often considered to be fixed, recent work has suggested that in some languages affix-order can vary (Baker 1985; Mithun 2000; Rice 2000). In Upper Necaxa Totonac (UNT), a relatively large number of affixes show variable ordering conditioned by one of three factors: formal rules for the co-expression of inflectional and quasi-inflectional categories; considerations of semantic scope; and free (or perhaps stylistic) variation. While there have been brief mentions of similar phenomenon in descriptive grammars, it remains an open question how common variable ordering of affixes is in natural language.

1   Upper Necaxa Totonac verbal morphology

UNT has an exceptionally rich verbal morphology, its verbs being inflected for three tenses ('past', 'present', 'future'), four aspects ('imperfective',

'perfective', 'progressive', 'perfect'), four moods ('indicative', 'optative', 'potential', 'irrealis'), person and number of subject, person and number of one object (mono- and multi-transitive verbs only), and person of a second object (multi-transitive verbs only). In addition, verbs can take a variety of *quasi-inflectional morphemes* — that is, morphemes that, like inflection, are highly productive, generally applicable across a given lexical class, and do not create a new lexeme when added to their base, but, which, like derivation, do not express obligatory grammatical categories (Mel'čuk 1993-2000, 2006). In UNT, these categories include (among others) the desiderative, the repetitive, the totalitative, and directional affixes like *teː-* 'in passing', as in (1):

(1) iʃkinkaːtateːʃoʔonikutumạːʔoːnaːmpalán
iʃ– kin– kaː– ta– teː– √ʃoʔo –ni –kutun –mạ: –ʔoː –naːn –pala –n –Ø
PST– 1OBJ– PL.OBJ– 3PL.SUB– PATH– √pay –BEN –DSD –PROG –TOT –ST.PL –RPT –2OBJ–PFV
'they would want to be coming by to pay us all again'

With so many affixes potentially associated with a single root, describing their relative ordering is essential. An economical way of illustrating this ordering is with an affixal template:

-9	-8	-7	-6	-5	-4	-3	-2	-1	[0	1	]	
I		Q	I				Q	I	(D+)R	I	(D)	
{FUT} {PAST} {OPT}	{1SUB} {1OBJ}	{EXP}	{POT}	{PL.OBJ}	{3PL.SUB}	{RCP}	{RT} {PATH}	{STAT} {INCH}	{L}	{OBJ.SUPP}	{L}	

2 *a,b,c,d*	3	4	5	6	7	8	9	10	11	12	13	14
Q		I	Q		I		Q				I	
{AMB} {TOT} {DSD} {RPT}	{DEB}	{IDF}	{IMPF} {PROG} {PF}	{TOT}	{ST.PL}	{DEB}	{RPT}	{TOT}	{DIST} {PROX}	{IDF}	{1PL.SUB} {2SG.SUB} {2PL.SUB} {2OBJ}	{PFV}

I = inflectional affix; Q = quasi-inflectional affix; D = derivational affix; R = radical

Figure 1: Non-derivational affixal template (Beck, Holden & Varela nd)

Positions in the template are numbered from the radical (R) outwards, positive values indicating suffixes and negative values indicating prefixes. The numerical positions are intended only to specify relative order of affixes; positions need not correspond to semantic, functional, or inflectional classes (although they may in a particular language).

Figure 1 also shows a classification of the type of affix found in each position (inflectional (I), quasi-inflectional (Q), or derivational (D)), as well as the morphemes whose morphs can appear there. A number of morphemes have morphs that appear in more than one position:

- the indefinite voice suffix {IDF} appears in either Position 4 or 12
- the totalitative quasi-inflectional suffix {TOT} can appear in Positions 2, 5 or, 7
- the debitative quasi-inflectional suffix {DEB} can appear in Position 3 or 8
- the repetitive quasi-inflectional suffix {RPT} can appear in Positions 2 or 7
- all Position 2 quasi-inflectional suffixes have variable relative ordering depending on semantic scope (hence, the sub-division of Position 2 into 2a – d)

Thus, the variably-ordered affixes here include both inflection and quasi-inflection. As shown in the discussion below, the conditions on their relative ordering run the gamut from purely formal through semantic conditioning to free (or stylistic) variation.

2   Formally-conditioned ordering

Two of the morphemes show the effects of purely formal rules for ordering — the inflectional suffix *-kan* 'indefinite voice' and the quasi-inflectional *-pala* 'repetitive'.

2.1   Indefinite voice

The indefinite voice in UNT is an inflectional affix that has the effect of suppressing the expression of the subject of a verb, giving either a passive-like impersonal "they" reading, or a reflexive reading (Beck 2007):

(2)   a.   kintala̰ʔtsín
            kin–   ta–   la̰ʔtsín –Ø   –Ø
            1OBJ– 3PL.SUB– see   –ACT –IMPF
            'they see me'

       b.   kila̰ʔtsinkán
            kin–   la̰ʔtsín –kan –Ø
            1OBJ– see   –IDF –IMPF
            'they_IDF see me' *or* 'I see myself'

The indefinite marker *-kan* appears in Position 4 or 12, depending on the aspect of the verb:

(3)   a.   lakasku:wakána̰
            lakasku:wa –kan –yǎ̰
            give.evil.eye –IDF   –IMPF:2SG.SUB
            'they_IDF give you the evil eye'

b. a̠ʔs'awima:paláka̠
      a̠ʔs'awí –ma: –pala –kan –li̠
      trick   –PROG –RPT –IDF –PFV
      'they_IDF are tricking him again'

In the imperfective (and perfect) aspect, *-kan* appears in Position 4 but in the progressive (and perfective), it is in Position 12 and fuses with the perfective marker, an empty part of the expression of the progressive (Beck, Holden & Varela nd). This variable ordering is purely formal and obligatory for all speakers in all circumstances, probably having its diachronic origins in the development of the aspect-markers.

2.2   Repetitive

The repetitive is a quasi-inflectional suffix which imparts the notion of an action being a repetition of something that happened earlier, roughly the equivalent of the English *again*:

(4) a. namín
         na– min –Ø
         FUT– come –IMPF
         's/he will come'

     b. namimpalá
         na– min –pala –Ø
         FUT– come –RPT   –IMPF
         's/he will come again'

The repetitive *-palá* appears in either Position 2 or 9, depending on the aspect of the verb:

(5) a. naa̠ka:nampaláya̠
         na–   a̠k– ka: –nan   –pala –yă̠
         FUT– head– chop –OBJ.SUPP–RPT –IMPF:2SG.SUB
         'you will weed [by holding the top of a plant and chopping] again'

     b. tama:sputu:ʔo:ma̠:na:mpáɬ
         ta–   ma:– sput –u: –ʔo: –ma̠: –na:n –pala –li̠
         3PL.SUB– CAUS–run.out –CAUS–TOT –PROG–ST.PL–RPT   –PFV
         'they are finishing them off completely again'

In the imperfective (and perfect) aspect, *-pala* appears in Position 2 while in the progressive (and perfective), it appears in Position 9 (again, fused with the perfective marker used in the expression of the progressive aspect). This aspect of the placement of the repetitive is also purely formal and probably also related to the diachrony of the aspectual system.

3 Semantically-conditioned ordering

There are two places in which the relative semantic scope of affixes affects their ordering — in the placement of co-occurring Position 2 suffixes, and in the placement of the totalitative suffix vis-à-vis its scope over the verb and verbal arguments.

3.1 Position 2 suffixes

As indicated in Figure 1, there are four quasi-inflectional suffixes that can potentially appear in Position 2 — *-pala* 'repetitive', *-kutun* 'desiderative', *-ʔo:* 'totalitative, and *-te:ɬá* 'ambulative'. Any of these can co-occur in a word-form and, when they do, the default order is {RPT}$_{(2a)}$ + {TOT}$_{(2b)}$ + {DSD}$_{(2c)}$ + {AMB}$_{(2d)}$:

(6) a. ikwapalakutún   {RPT} + {DSD}
      ik–   wa –pala –kutun –Ø
      1SG.SUB– eat –RPT –DSD   –IMPF
      'I want to eat again (i.e., another meal)'

   b. ikwaʔo:kutún   {TOT} + {DSD}
      ik–   wa –ʔo: –kutun –Ø
      1SG.SUB– eat –TOT –DSD   –IMPF
      'I want to eat it all'

   c. ʃakwapalaʔó:ɬ   {RPT} + {TOT}
      ʃa–   ik–   wa –pala –ʔo: –li̱
      PAST– 1SG.SUB– eat –RPT –TOT –PFV
      'would that I ate it all again!'

   d. ikwapalakutunte:ɬá   {RPT} + {DSD} + {AMB}
      ik–   wa –pala –kutun –te:ɬá –Ø
      1SG.SUB– eat –RPT –DSD   –AMB –IMPF
      'I go along wanting to eat again'

Here, each quasi-grammeme modifies the lexeme it is attached to. Thus, in (6a), the {RPT} morpheme appears closer to the stem than {DSD}, while in (6b), "desiderative" and "totalitative" appear in the order {TOT} + {DSD}. In (6c), {RPT} precedes {TOT}, but in (6d),{RPT} precedes {DSD} which precedes {AMB}. In all of these cases, the semantic scope of the affix is over the verb.

It is also possible for these morphemes to take scope over each other. Compare (7a) and (b):

(7) a. ikwapalakutún   "dsd"('eat') ∧ "rpt"('eat')
         ik–   wa –pala –kutun –Ø
         1SG.SUB– eat –RPT –DSD –IMPF
         'I want to eat again' (i.e., another meal)

     b. ikwakutumpalá   "rpt"("dsd"('eat'))
         ik–   wa –kutun –pala –Ø
         1SG.SUB– eat –DSD –RPT –IMPF
         'again, I want to eat' (i.e., I'm hungry again)

In (7a), the quasi-grammeme "desiderative" takes scope over the lexeme WA 'eat'; in (7b), however, "repetitive" takes scope over "desiderative", which itself takes scope over WA — giving the reading 'again I want that I eat' (i.e., [*again*(*want*('I',(*eat*('I',x))))]). Similar contrasts can be found in (8):

(8) a. ikwakutunte:ɬá   "dsd"('eat') ∧ "amb"('eat')
         ik–   wa –kutun –te:ɬa –Ø
         1SG.SUB– eat –DSD –AMB –IMPF
         'I go along wanting to eat'

     b. ikwate:ɬakutún   "dsd"("amb"('eat'))
         ik–   wa –te:ɬa –kutun –Ø
         1SG.SUB– eat –AMB –DSD –IMPF
         'I want to go along eating' (i.e., eating while I'm walking along)

(9) a. ikwapalate:ɬá   "rpt"('eat') ∧ "amb"('eat')
         ik–   wa –pala –te:ɬa –Ø
         1SG.SUB– eat –RPT –AMB –IMPF
         'I eat again as I go along'

     b. ikwate:ɬapalá   "rpt"("amb"('eat'))
         ik–   wa –te:ɬa –pala –Ø
         1SG.SUB– eat –AMB –RPT –IMPF
         'I go along eating again' (i.e., once more I eat while walking along)

The reversal of the quasi-inflectional markers indicates a change in scope, the marked order indicating that the later marker modifies the one preceding it, which in turn modifies the lexeme. Although these are subtle differences, speakers are consistent and reject forms in context where the order of affixes does not match the correct scopal interpretation.

3.2   Totalitative

       As well as appearing in Position 2b, the totalitative also appears in Positions 5 and 7, depending on whether it quantifies the verb (or another Position 2 affix), the subject, or the object:

(10) a. natawaʔoːkutumạːnáːɬ
     na– ta–   wa –ʔoː –kutun –mạː –naːn –lị
     FUT– 3PL.SUB– eat –TOT –DSD –PROG–ST.PL–PFV
     'they are wanting to eat everything up'

   b. natawakutumạːʔoːnáːɬ
     na– ta–   wa –kutun –mạː –ʔoː –naːn –lị
     FUT– 3PL.SUB– eat –DSD –PROG –TOT –ST.PL –PFV
     'everyone is wanting to eat'

   c. natawakutumạːnaːnʔóːɬ
     na– ta–   wa –kutun –mạː –naːn –ʔoː –lị
     FUT– 3PL.SUB– eat –DSD –PROG –ST.PL–TOT –PFV
     'they are wanting to try [i.e., eat] everything'

In (10a), the totalitative in Position 2b takes scope only over the lexeme itself, indicating that the desire is for total consumption, but in (10b), {TOT} is in Position 5 and has scope over the subject, indicating that everyone is wanting to eat. In contrast, in (10c), {TOT} in Position 7 has scope over the object, corresponding to a reading along the lines of "everything there, they want to eat it" (i.e., they want to sample everything). Thus, the conditioning on the ordering of affixes in (7), (8), and (10) is semantically-driven, depending on the intended meaning of the wordform rather than formal conditions.

4   Free variation

      In addition to displaying variable ordering, the quasi-inflectional suffix *-ʔẹː* 'debitative' also shows variability in its expression, depending on the number of the subject and the aspect of the verb form. Specifically, when the subject is plural and the verb is in the perfective aspect, the debitative co-occurs with the stative plural marker *-naːn*:

(11) a. leːniʔẹ́ːɬ
     leːn –ni –ʔẹː –lị
     take –BEN –DEB –PFV
     'he$_i$ had to take it to him$_j$'

   b. taleːniʔẹːʔoːnáːɬ
     ta–   leːn –ni –ʔẹː –ʔoː –naːn –lị
     3PL.SUB– take –BEN –DEB –TOT –ST.PL –PFV
     'they all had to take it to him'

   c. iʃtaleːniʔẹːnịːtsá
     iʃ–   ta–   leːn –ni –ʔẹː –nịː =tsá
     PAST– 3PL.SUB– take –BEN –DEB –PF now
     'they've taken it to him (out of obligation)'

In (11a), which has a singular subject, the debitative marker appears on its own, while in (11b), the subject is plural and the verb is in the perfective aspect, so the debitative appears with the stative plural marker *-na:n*. (11c) has a plural subject but is in the perfect aspect, showing that the stative plural marker is only required in the perfective.

In most cases, the debitative marker appears in Position 3:

(12) a. mat   natama:ʔẹ:yá:ʍ   tsaláx
         na– tama: –ʔẹ: –ya: –ʍ   tsaláx
         FUT– lie.down –DEB –IMPF –1PL.SUB   short.time
         'we ought to lie down for a while'

    b. xa:k   wayanʔẹ:má:ɬ
        xa: ik–   wa –yan   –ʔẹ: –ma: –li̠
        NEG   1SG.SUB– eat –OBJ.SUPP –DEB –PROG–PFV
        'I'm not eating (because I mustn't)'

In (12a), {DEB} precedes the imperfective *-ya:*, which is in Position 4; likewise in (12b), it precedes the progressive *-ma:*, also in Position 4. As seen in (11b) above, {DEB} also precedes {TOT} when the latter quantifies the subject (in Position 5).

In the progressive aspect, however, the debitative can also optionally appear in Position 8, *following* the progressive aspect marker:

(13) ika:le:nima:ʔẹ:ɬkús
     ik–   ka:– le:n –ni –ma: –ʔẹ: –li̠ =kús
     1SG.SUB– PL.OBJ–take –BEN –PROG–DEB –PFV =still
     'I still have to take it to them'

The form *ika:le:niʔẹ:ma:ɬkús* is also acceptable and has the same gloss.

Verbs in the progressive aspect with plural subjects can also have the debitative morpheme in Position 8, although in this position the marker takes the form /ʔẹ:na:n/:

(14) tamima̠:na:nʔẹ:ná:ɬ
     ta–   min –ma̠: –na:n –ʔẹ:na:n –li̠
     3PL.SUB– come–PROG–ST.PL–DEB   –PFV
     'they must be on their way'

In (14), the debitative appears in Position 8; note that the allomorph /ʔẹ:na:n/ co-occurs with the stative plural *-na:n* (required by the plurality of the subject in the progressive aspect), from which it is probably diachronically derived.

It is also possible for the debitative to appear in Position 3:

(15) taminʔẹːma̲ːnáːɬ

    ta–   min –ʔẹː –ma̲ː –naːn –li̲

    3PL.SUB– come –DEB –PROG–ST.PL–PFV

    'they must be on their way'

As shown in (15), the debitative is realized in Position 3 as /ʔẹː/ rather than /ʔẹːnaːn/; (14) and (15) have identical glosses. Thus, in both singular and plural progressive forms, the choice between the /ʔẹː/ allomorph in Position 3 and the /ʔẹː/ or /ʔẹːnaːn/ allomorphs in Position 8 seems to be free: speakers accept and produce both orders, and so far attempts to uncover semantic or pragmatic effects of one or the other placements of the debitative morpheme have failed. Although this may seem problematic, a few instances of freely-variable affixes in other languages are mentioned in Mel'čuk (1993-2000). Of course, further investigation may eventually reveal subtle semantic distinctions between the two possible positions, but for the moment this seems to be an example of the third type of condition on variable affix ordering.

5   Conclusion

Many theories of morphology take it for granted that affixes occur in relatively fixed linear order with respect to each other and with respect to their bases. This paper illustrates three types of variable ordering in Upper Necaxa Totonac: formally-conditioned ordering of inflectional and quasi-inflectional affixes; semantic conditioning of quasi-inflectional affixes; and free-variation of quasi-inflectional affixes (albeit under formally restricted conditions). There are some precedents for variable affix-ordering in the literature, particularly for the semantically-conditioned ordering of affixes. For instance, Aschmann & Wonderly (1952) mention a case of scope-driven ordering of derivational affixes in Zapotitlán Totonac, while Baker (1985) reports scope-related ordering of (mostly) derivational affixes in Bantu. Rice (2000) reports extensively on scopal effects on morpheme order in Athapaskan languages, while Aikhenvald (2003) gives a few examples of scope-related ordering of both derivational and what appear to be inflectional affixes in Tariana. Wise (1986) also briefly mentions scopal ordering of (probably derivational) suffixes in Arawakan.

Reports of formally-driven variation are fewer, possibly because formal rules often evolve from the same sort of diachronically-driven processes that lead to routinized (i.e., fixed) ordering of grammaticized elements. Perhaps of greater interest is the fact that most of the variable affixes in UNT are quasi-inflectional. Because the category is not widely recognized, this type of variation has not been reported very frequently. However, Mithun (2000) reports on a case in Yup'ik of variable ordering of what looks like a quasi-inflectional affix relative to inflectional morphemes, and Hess (1995) mentions a case of scope-related ordering of a quasi-inflectional proclitic with respect to inflectional proclitics in Lushootseed. It may be that as researchers begin to pay more attention to this type of morpheme, more cases will turn up. Indeed, it seems that variably-ordered affixes of all types are more common than previously thought. As

more examples come to light, we should gain insight into the types of affixes that can be variably ordered, the frequency with which particular types are affected, and what the conditions are on this variation. Examination of these issues seems like a promising new direction for research in morphological typology.

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