

## Morphological phrasemes in Totonacan inflection

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### Abstract

Totonacan languages are well-known for their morphological complexity, including their “recycling” of grammatical elements in set combinations that are not compositional expressions of their individual meanings. This paper argues for the treatment of these combinations as *morphological phrasemes*, conventionalized morphological expressions equivalent to lexicalized expressions such as idioms.

### Keywords

Morphology; Totonac; inflection; morphological phraseme.

## 1 Introduction

Upper Necaxa Totonac (UNT), spoken by some 3,400 people in the Sierra Norte of Puebla State in Mexico, belongs to the Totonac-Tepehua linguistic family, a group with roughly two dozen members. The languages in this family are renowned for their morphological complexity, wordforms in these languages routinely being composed of a root plus six or more derivational and inflectional affixes. Totonacan languages are also known to be agglutinative and fairly easy to parse in terms of identifying the constituent affixes of a given wordform; however, in spite of this the inflectional systems of these languages show a great many apparent irregularities, particularly in the use of particular combinations of affixes to express grammatical meanings different from the meanings expressed by the same affixes when used outside of these combinations. Recent efforts at the formal modelling of Totonacan inflectional systems (Beck, Holden & Varela n.d.) have focused on treating these affixal combinations as *morphological phrasemes* (Mel'čuk 1964, 1993-2000, vol. 4, Ch. 9; also Aronoff & Sridhar 1984). At the inflectional level, morphological phrasemes are conventionalized combinations of morphemes used to express a set of grammemes which can not be equated to the combined literal meanings of the morphemes themselves — essentially the morphological equivalent of an idiom. This approach departs from traditional analytical assumptions which treat the morpheme as the basic meaning-bearing element of word-formation, but is easily handled in a Meaning-Text Model morphological model, which allows for the mapping of grammemes or particular combinations thereof onto morphemes that are not necessarily in one-to-one (or any direct) correspondence to the values of the inflectional categories being expressed. The dis-

cussion here will argue for the presence of morphological phrasemes in two areas of UNT inflection, person-marking and mood-marking, on the basis of model-theoretical economy.

## 2 Person-marking

The best-known of the so-called irregularities in Totonacan inflectional systems are in the realm of person-inflection, particularly in the expression of the first-person plural subject and first-person plural object, and in the expression of person in transitive verbs where both subject and object are either first- or second-person and one or both of these is plural. In all cases, the most economic approach to modelling involves the positing of morphological phrasemes.

### 2.1 First-person plural subjects

Upper Necaxa Totonac makes an inclusive/exclusive distinction for first-person plural subjects, although it has no specific affix to mark exclusivity of subject ( $e_{sub}$ ). Instead, it uses a combination of the morphemes employed more generally as the first-person singular and first-person plural markers, as in (1):<sup>1</sup>

- |        |                              |  |    |                                 |
|--------|------------------------------|--|----|---------------------------------|
| (1) a. | <i>túkswi</i>                |  | b. | <i>iktúkswi</i>                 |
|        | Ø- tuks -w -l̥i              |  |    | ik- Ø- tuks -w -l̥i             |
|        | 3OBJ- hit -1PL.SUB -PFV      |  |    | 1SG.SUB- 3OBJ- hit -1PL.SUB-PFV |
|        | ‘we <sub>INCL</sub> hit him’ |  |    | ‘we <sub>EXCL</sub> hit him’    |

As a result, the expression of ‘inclusive’ and ‘exclusive’ grammemes can not be handled by a rule that maps each onto a specific morpheme, but instead requires a rule that simultaneously maps grammemes of the category exclusivity together with ‘1<sub>sub</sub>’ and ‘pl<sub>sub</sub>’ grammemes onto phraseologized combinations of morphemes:

DMorph Rule 1:

$$\begin{array}{l} \text{‘1}_{sub}\text{’, ‘pl}_{sub}\text{’, ‘incl’} \quad \Leftrightarrow \quad \{1\text{PL.SUB}\} \\ \text{‘1}_{sub}\text{’, ‘pl}_{sub}\text{’, ‘excl’} \quad \Leftrightarrow \quad \{1\text{SG.SUB}\}, \{1\text{PL.SUB}\} \end{array}$$

According to DMorph Rule 1, the combination of grammemes ‘1<sub>sub</sub>’, ‘pl<sub>sub</sub>’, and ‘incl’ are mapped onto the morpheme {1PL.SUB}, whereas the combination ‘1<sub>sub</sub>’, ‘pl<sub>sub</sub>’, and ‘excl’ are mapped onto two morphemes, {1SG.SUB} and {1PL.SUB} (a possible semantic motivation for this is discussed in Beck 2001).

Treating this combination of {1SG.SUB} and {1PL.SUB} as a morphological phraseme, as opposed to positing a separate morpheme {1PL.SUB:EXCL}, saves a great deal of redundancy in

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<sup>1</sup> The abbreviations used here are as follows: 1,2,3 = first-, second-, third-person; CAUS = causative; DIST = distal; EXCL = ‘exclusive’; FUT = future; IMPF = imperfective; INCL = inclusive; INST = instrumental; NEG = negative; OBJ = object; OPT = optative; PFV = perfective; PL = plural; PO = possessive; POT = potential; PROX = proximate; RCP = reciprocal; SG = singular; ST.PL = stative plural; SUB = subject;  $\check{V}$  = unstressable vowel. Data are drawn from the author’s fieldnotes. The rules given below are drawn from Beck, Holden, & Varela (n.d.), a complete MTT model of the non-derivational morphology of the UNT verb. The subscript numbers in the rules refer to the UNT affixal template, which has 9 prefixal and 14 suffixal positions. For reasons of space, it has not been included in this paper. The complete model is available on request from the author.

the morphological model. In the surface morphological rules, for instance, the first-person exclusive verb form can be implemented by the combination of SMorph Rules 1 (needed for the implementation of the first-person singular subject prefix in any case) and 2, while the first-person plural inclusive requires only SMorph Rule 2:

$$\begin{array}{lcl} \text{SMorph Rule 1:} & & \text{SMorph Rule 2:} \\ \{1\text{SG.SUB}\} & \Leftrightarrow & /ik/_{(-7)} \\ & & \{1\text{PL.SUB}\} \quad \Leftrightarrow \quad /w/_{(13)} \end{array}$$

This avoids the necessity of a rule mapping a putative  $\{1\text{PL.SUB:EXCL}\}$  morpheme on to a discontinuous (circumfixal) morph  $/ik-$   $-w/$ .

At the morphophonological level, this approach also avoids a great deal of redundancy as both the first-person singular prefix  $ik-$  and the first-person plural suffix  $-w$  undergo the same alternations in first-person plural exclusive verb forms as they do in first-person singular and first-person plural inclusive verb forms. The first-person singular prefix,  $ik-$ , for instance, is subject to the following morphophonological alternation (truncation):

$$\begin{array}{l} \text{Mor-Phon Rule 1:} \\ /ik/ \Rightarrow /k/ \end{array} \quad \left| \begin{array}{l} 1) /ik/ \in \{1\text{SG.SUB}\}; \\ 2) \text{ not } \_ /k/, \text{ where } k \in \{\text{PL.OBJ}\}; \\ 3) \text{ not } \# \_ /V/ \end{array} \right.$$

This accounts for the parallels between the forms in (2a) / (2b) and (2c) / (2d) without positing an essentially identical rule conditioned by a  $\{1\text{PL.SUB:EXCL}\}$  morpheme:

- (2) a. *kli:la:wí:l*  
 ik-      li:-    la:-wi:lá-lj̃  
 1SG.SUB- INST- do-sit -PFV  
 ‘I’m sitting because of it’
- b. *kli:la:wí:laná:um*  
 ik-      li:-    la:-wi:lá-na:n -w      -lj̃  
 1SG.SUB- INST- do-sit -ST.PL-1PL.SUB -PFV  
 ‘we<sub>EXCL</sub> are sitting because of it’<sup>2</sup>
- c. *naika:fɔʔó*  
 na- ik-      ka:-    fɔʔó-Ø  
 FUT- 1SG.SUB- PL.OBJ- pay -IMPF  
 ‘I will pay them’
- d. *naika:fɔʔoyá:um*  
 na- ik-      ka:-    fɔʔó-ya:    -w  
 FUT- 1SG.SUB- PL.OBJ- pay -IMPF -1PL.SUB  
 ‘we<sub>EXCL</sub> will pay them’

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<sup>2</sup> The perfective morpheme in (2a) and (b) is an empty part of the expression of the progressive aspect — in effect, yet another morphological phraseme that, for reasons of space, can not be discussed here.

Similarly, in certain prosodic contexts the first-person singular prefix “migrates” leftwards and attaches to a preceding V-final adverb or particle:

Mor-Phon Rule 2:

$$\begin{array}{l} /V/\# /ik/ \Rightarrow /Vk/\# \\ \left| \begin{array}{l} 1) /ik/ \in \{1SG.SUB\}; \\ 2) V \in \{L_{ADV}\} \text{ or } \{L_{PRT}\}; \\ 3) \_ /C/, \text{ where } C \neq /k/ \end{array} \right. \end{array}$$

The parallel between the forms in (3) is accounted for by this rule alone if the first-person plural exclusive form is treated as a phraseologized use of the {1SG.SUB} morpheme:

(3) a. *xa:k tima:sa:kwani:*

xa: ik- ti- ma:- sa:kwán-ni: -Ø  
NEG 1SG.SUB- POT- CAUS-borrow -CAUS-IMPF  
'I won't lend it to him'

b. *xa:k tima:sa:kwani.yá:um*

xa: ik- ti- ma:- sa:kwán-ni: -ya: -w  
NEG 1SG.SUB- POT- CAUS-borrow -CAUS-IMPF -1PL.SUB  
'we<sub>EXCL</sub> won't lend it to him'

Positing a separate {1PL.SUB:EXCL} morpheme would require a separate rule for (3b). The same type of argument applies to the first-person plural subject marker, which shows the following morphophonological alternation in the Chicontla dialect of UNT:

Mor-Phon Rule 3 (Ch.):

$$\begin{array}{l} /V/ + /w/ \Rightarrow /Vuw/ \\ \left| \begin{array}{l} 1) /w/ \in \{1PL.SUB\}; \\ 2) \_ \#; \\ 3) V \neq /u/ \end{array} \right. \end{array}$$

As with Mor-Phon Rules given above, this rule would have to be duplicated if we were to posit a {1PL.EXCL} morpheme. Treatment of first-person plural exclusive forms as phrasemes thus reduces the number of Mor-Phon Rules needed to handle the implementation of first-person plural subjects from six to three, a substantial economy in our model.

## 2.2 First-person plural objects

First-person plural objects in Upper Necaxa are also expressed by a morphological phraseme — the combination of the first-person object prefix, the plural object prefix, and the second-person object suffix. This can be described by a DMorph Rule mapping the grammemes '1<sub>obj</sub>' and 'pl<sub>obj</sub>' onto the morphemes {1OBJ}, {PL.OBJ}, and {2OBJ}:

DMorph Rule 2:

$$'1_{obj}', 'pl_{obj}' \Leftrightarrow \{1OBJ\}, \{PL.OBJ\}, \{2OBJ\}$$

The SMorph Rules applied to these morphemes are the same as those used in other contexts:

SMorph Rule 3:

$$\{1OBJ\} \Leftrightarrow /kin/_{(-7)}$$

SMorph Rule 4:  
 $\{\text{PL.OBJ}\} \Leftrightarrow /ka:/_{(-4)}$

SMorph Rule 5:  
 $\{\text{2OBJ}\} \Leftrightarrow /n/_{(13)}$

The concerted action of all of these rules gives us forms such as that in (4):

- (4) *nakinka.mqʔaya.yá.n*  
 na- kin- ka:- mǎʔta:yá-ya: -n  
 FUT- 1OBJ- PL.OBJ- help -IMPF -2OBJ  
 ‘he will help us’

Once again, the treatment of this combination of markers as a morphological phraseme rather than as a single morpheme in its own right avoids redundancy in the model. In addition to eliminating special rules to handle a putative {1PL.OBJ} morpheme, it avoids redundancy in the morphophonemic rules that apply to the {1OBJ} prefix, which has the allomorph [ki-] before continuant consonants in both first-person singular object and plural object forms:

Mor-Phon Rule 4:  
 $/kin/ \Rightarrow /ki/$

1) /kin/ ∈ {1OBJ};
2) ___/C <sup>[+cont]</sup> /

Positing the first-person plural marker as a phraseme that includes the morpheme {1OBJ} eliminates the need for a separate but essentially identical rule for a {1PL.OBJ} morpheme.

It should be noted that, in terms of meaning, the morphological phraseme proposed here is not that much of a stretch, given that ‘we’ is often equivalent to ‘I’ + ‘you’ and is always plural. However, this is only true of first-person plural inclusive objects, whereas DMorph Rule 2 also accounts for the presence of the second-person object marker in sentences with first-person plural exclusive objects. In the case of first-person plural exclusive objects, there is no second-person involved, and so the presence of the {2OBJ} morpheme has to be treated as a purely formal idiosyncrasy of the expression of first-person plural objects, which do not make a formal distinction for exclusivity in UNT.

### 2.3 1 ⇔ 2 verb forms

The use of DMorph Rules to account for phraseologized combinations of morphemes is also required to handle a well-known peculiarity of the person-paradigms of many Totonacan languages (Beck 2001). A number of languages in this family show a three-way ambiguity in expressions involving either a) a first-person subject and a second-person object where the subject or the object is (or both are) plural, or b) a second-person subject and a first-person object where the subject or the object is (or both are) plural. The first of these two cases is described by DMorph Rule 3:

DMorph Rule 3:

$\left. \begin{array}{l} '1_{\text{sub}}, '2_{\text{obj}}, 'sg_{\text{obj}}, 'pl_{\text{sub}} \\ '1_{\text{sub}}, '2_{\text{obj}}, 'pl_{\text{obj}}, 'pl_{\text{sub}} \\ '1_{\text{sub}}, '2_{\text{obj}}, 'pl_{\text{obj}}, 'sg_{\text{sub}} \end{array} \right\}$	$\Leftrightarrow \{1\text{SG.SUB}\}, \{1\text{PL.OBJ}\}, \{2\text{OBJ}\}$
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According to this rule, all three of the configurations of grammemes [ $'1_{\text{sub}}'$ ,  $'2_{\text{obj}}'$ ,  $'\text{sg}_{\text{obj}}'$ ,  $'\text{pl}_{\text{sub}}'$ ], [ $'1_{\text{sub}}'$ ,  $'2_{\text{obj}}'$ ,  $'\text{pl}_{\text{obj}}'$ ,  $'\text{pl}_{\text{sub}}'$ ], and [ $'1_{\text{sub}}'$ ,  $'2_{\text{obj}}'$ ,  $'\text{pl}_{\text{obj}}'$ ,  $'\text{sg}_{\text{sub}}'$ ] map onto the same combination of morphemes,  $\{1\text{SG.SUB}\} \{2\text{OBJ}\} \{1\text{PL.SUB}\}$ , taking the form that might have been expected for an utterance with a first-person singular subject and a second-person plural object. This DMorph Rule 3 accounts for the three possible glosses of the sentence in (5):

- (5) *ika.túksni*  
 ik- ka:- tuks -n -li  
 1SG.SUB- PL.OBJ- hit -2OBJ -PFV  
 'I hit you guys' or 'we<sub>EXCL</sub> hit you guys' or 'we<sub>EXCL</sub> hit you'

As with all morphological phrasemes, the individual morphemes implemented by DMorph Rule 3 are covered by the same SMorph and Mor-Phon Rules as when they appear on their own (specifically,  $\{1\text{SG.SUB}\}$  is implemented by SMorph Rule 1 and is subject to Mor-Phon Rules 1 and 2,  $\{2\text{OBJ}\}$  by SMorph Rule 4, and  $\{1\text{PL.SUB}\}$  by SMorph Rule 5).

The second case of three-way ambiguity occurs when the subject is second person, the object is first-person, and one of the two is (or both are) plural, as described in DMorph Rule 4:

$$\left. \begin{array}{l} \text{DMorph Rule 4:} \\ \left. \begin{array}{l} '2_{\text{sub}}', '1_{\text{obj}}', 'sg_{\text{sub}}', 'pl_{\text{obj}}' \\ '2_{\text{sub}}', '1_{\text{obj}}', 'pl_{\text{sub}}', 'pl_{\text{obj}}' \\ '2_{\text{sub}}', '1_{\text{obj}}', 'pl_{\text{sub}}', 'sg_{\text{obj}}' \end{array} \right\} \Leftrightarrow \{1\text{OBJ}\}, \{RCP\}, \{1\text{PL.SUB}\} \end{array} \right\}$$

According to this rule, all three of the configurations of grammemes [ $'2_{\text{sub}}'$ ,  $'1_{\text{obj}}'$ ,  $'\text{sg}_{\text{sub}}'$ ,  $'\text{pl}_{\text{obj}}'$ ], [ $'2_{\text{sub}}'$ ,  $'1_{\text{obj}}'$ ,  $'\text{pl}_{\text{sub}}'$ ,  $'\text{pl}_{\text{obj}}'$ ], and [ $'2_{\text{sub}}'$ ,  $'1_{\text{obj}}'$ ,  $'\text{pl}_{\text{sub}}'$ ,  $'\text{sg}_{\text{obj}}'$ ] map on to the same combination of morphemes,  $\{1\text{OBJ}\} \{RCP\} \{1\text{PL.SUB}\}$ . Unlike the form created by DMorph Rule 3, the form created by DMorph Rule 4 is a completely novel one involving the first-person plural subject and first-person object markers and the reciprocal prefix *la:-*, which is implemented by the following pair of rules:

$$\begin{array}{ll} \text{DMorph Rule 5:} & \text{SMorph Rule 6:} \\ \text{'reciprocal'} & \Leftrightarrow \{RCP\} \\ & \Leftrightarrow /la:/_{(-2)} \end{array}$$

Once again, the result is a form with three possible glosses:

- (6) *kila.túkswi*  
 kin- la:- tuks -w -li  
 1OBJ- RCP- hit -1PL.SUB -PFV  
 'you hit us' or 'you guys hit us' or 'you guys hit me'

The individual morphemes implemented by DMorph Rule 4 are covered by the same SMorph and Mor-Phon Rules as when they appear on their own (specifically,  $\{1\text{OBJ}\}$  is implemented by SMorph Rule 3 and is subject to Mor-Phon Rule 4;  $\{RCP\}$  is implemented by SMorph Rule 6; and  $\{1\text{PL.SUB}\}$  is implemented by SMorph Rule 2 and is subject to Mor-Phon Rule 3).

In the case of both ambiguities, the use of morphological phrasemes avoids the necessity of writing a separate rule for each case (which would give us six DMorph rules instead of two). Each of these separate rules would give rise to six novel SMorph rules (whereas no new SMorph rules are needed if we use phrasemes), and the output of these rules would be homo-

phonous discontinuous morphs for each of which we would have to duplicate the morphological rules already created to handle the behaviour of the individual morphs on their own. All in all, approaching these forms as phrasemes saves a total of 102 additional rules.

### 3 Mood-marking in active verbs

Verbs in Upper Necaxa fall into two broad categories — *active* and *stative*. Active verbs, our focus here, are inflected for the categories of tense, aspect, and mood. Tense has three values ('present', 'future', and 'past'); aspect has four possible values ('imperfective', 'perfective', 'perfect', and 'progressive'); and mood has four values ('indicative', 'optative', 'potential', and 'irrealis'). The possible combinations of TAM grammemes allowed for active verbs are given, along with their principal exponents, in Table 1:

	IMPERFECTIVE	PERFECTIVE	PROGRESSIVE	PERFECT
INDICATIVE				
FUTURE	na- Ø- -ya:			
PRESENT	Ø- Ø- -ya:	Ø- Ø- -l̥j	Ø- Ø- -ma:	Ø- Ø- -n̥j:tán
PAST	ij- Ø- -ya:		ij- Ø- -ma:	ij- Ø- -n̥j:tán
OPTATIVE/IMPERATIVE				
FUTURE				
PRESENT	ka- -ya:	ka- -l̥j	ka- -ma:	ka- -n̥j:tán
PAST				
POTENTIAL				
FUTURE	na- ti- -ya:			
PRESENT	ti- -ya:	ti- -l̥j	ti- -ma:	ti- -n̥j:tán
PAST	ij- ti- -ya:		ij- ti- -ma:	ij- ti- -n̥j:tán
IRREALIS				
FUTURE		ka- ti- -l̥j		
PRESENT		ij- -l̥j		
PAST		ij- ti- -l̥j		

Table 1: Upper Necaxa TAM combinations for active verbs

This system is fairly symmetrical and its TAM inflections are largely compositional except for the irrealis mood, which has no marker of its own but is instead expressed by morphological phrasemes built up out of markers used for other tenses, aspects, and moods.

The irrealis mood is combinable with all three tenses, but does not show any aspectual contrasts. In the present tense, the irrealis is implemented by the following DMorph Rule:

DMorph Rule 6:

$$\text{'irrealis', 'present'} \Leftrightarrow \{\text{PAST}\}, \{\text{PFV}\}$$

According to this rule, the present tense of the irrealis mood is expressed by a combination of the past tense and the perfective aspect markers. As expected, the expression of the individual morphemes is subject to the same SMorph and Mor-Phon Rules that govern the past tense and perfective markers when these appear in other constructions:

SMorph Rule 7:

$$\{\text{PAST}\} \Leftrightarrow /ij/_{(,9)}$$

SMorph Rule 8:

$$\begin{array}{l} \{PFV\} \\ \Leftrightarrow \end{array} \begin{array}{l} (1) /li/ \quad | \text{ not A} \\ (2) /Ø/_{(\emptyset)} \quad | \text{ A = } \left| \begin{array}{l} \{2PL.SUB\} \text{ or } \{A_{2SG.SUB}\} \\ \text{or } \{PROX\} \text{ or } \{DIST\} \_ \_ \end{array} \right. \end{array}$$

In addition, the expression of the present irrealis mood is subject to a set of five rather complex Mor-Phon Rules (not included here due to space limitations) which affect the expression of the {PFV} morpheme in all cases where it is present. The combined effect of all of these rules give us forms such as the following:

- (7) a. *tʃó:la paʔ tsí:ya ʃakwánli*  
 tʃó:la paʔ tsí:ya ʃak- wan -li  
 at.least if mouse PAST:1SG.SUB- be -PFV  
 ‘if I were a mouse’<sup>3</sup>
- b. *iflí:ta milakasmú* (Ch.)  
 if- li:tǎ -Ø min- lakasmú  
 PAST- bring:2SG.SUB -PFV 2PO- sweetheart  
 ‘you should have brought your girlfriend’

In the past tense, the irrealis is expressed by a phraseologized combination of the past tense, the perfective aspect, and the potential mood morphemes:

DMorph Rule 7:

$$\text{‘irrealis’, ‘past’} \quad \Leftrightarrow \quad \{PAST\}, \{POT\}, \{PFV\}$$

Once again, the implementation of all three of the morphemes specified by this rule is accounted for by the same SMorph Rules that describe their behaviour in other contexts. These include the rules already given above, as well as the following SMorph Rule implementing the {POT} morpheme:

SMorph Rule 9:

$$\{POT\} \quad \Leftrightarrow \quad /ti/_{(-6)}$$

{PFV} is, of course, also subject to the same five Mor-Phon Rules that apply to the perfective morpheme in the present irrealis and elsewhere. These rules give us forms such as:

- (8) *ifpiní:ta pero iftitaftiwikínĭ tsewaní*  
 if- pin -ní:tǎ pero if- ti- taftiwikínĭ -Ø tsewaní  
 PAST- go -PF:2SG.SUB but PAST- POT- swing:2SG.SUB-PFV lovely  
 ‘you had gone [already] but it would have been nice if you had gone for a swing’

Of the three tenses of the irrealis mood, this one is expressed by the most transparent combination of morphemes; however, in the absence of an aspectual distinction within this mood, the presence of the perfective aspect marker has to be considered a phraseologized, non-literal use of the morpheme rather than the expression of a grammeme.

<sup>3</sup> Cf. the corresponding form in the optative mood, *paʔ tsí:ya kakwán* ‘if only I could be a mouse’.

In the future tense, the irrealis is expressed by a combination of the potential *ti-*, the optative prefix *ka-*, and the perfective aspect marker:

DMorph Rule 8:  
 ‘irrealis’, ‘fut’                    ⇔                    {OPT}, {POT}, {PFV}

The SMorph and Mor-Phon Rules governing the expression of the morphemes as morphs are those already given above and the rule implementing the {OPT} morpheme:

SMorph Rule 10:  
 {OPT}                                    ⇔                    /ka/<sub>(.9)</sub>

As with the other forms of the irrealis, the {PFV} portion of the phraseme is subject to the usual set of morphophonological alternations. The combination of these rules gives us forms such as the following:

- (9) a. *xa: katispútlj*  
       *xa: ka- ti- sput -lj*  
       NEG OPT- POT- finish -PFV  
       ‘it will not end’
- b. *xa: katikatsí:ʔ*  
       *xa: ka- ti- katsí:-ʔ*  
       NEG OPT- POT- know-PFV  
       ‘he won’t know it’

Given that the irrealis mood has no exponent of its own but is instead expressed by various combinations of the affixes used for the expression of other moods, aspects, and tenses, the economy of treating the exponents of the irrealis as phrasemes is obvious.

Over and above the criterion of model-theoretical economy (which in the end is an essentially aesthetic rather than substantive criterion), the example of the irrealis highlights a further advantage of the concept the morphological phraseme. In contrast to the phraseologized uses of person-markers, which in many cases can be argued to have plausible semantic motivations or to be extensions from fairly compositional uses of their component morphemes (Beck 2001), the exponents of the irrealis mood appear to have little or no semantic motivation at all, but instead have to be treated as purely formal innovations in the inflectional system arrived at by some indeterminate diachronic path. While we might expect the diachronic development of these forms to be the result of semantically motivated (or at least constrained) processes, from the point of view of the synchronic modeller their treatment as phraseologized combinations of affixes is unavoidable, and the use of a model-theoretic tool that allows for such phrasemes and for potentially arbitrary mapping between grammemes and the morphemes that are their exponents becomes an absolute necessity.

## 4 Conclusion

As shown in the preceding sections, the treatment of non-compositional strings of affixes used to express particular combinations of grammemes as morphological phrasemes as opposed to separate morphemes represents a substantial economy in the construction of a morphological model of Upper Necaxa Totonac inflection. In addition to allowing for more elegant models, the concept of the morphological phraseme has some interesting implications for morphology in general, not the least of which is the introduction into the domain of word-formation a concept analogous to that of the idiom in syntax. The morphological phraseme is also a challenge to the traditional assumption that the individual morpheme is the basic meaning-bearing ele-

ment of word-formation; instead, it leaves open the possibility that a particular combination of morphemes, rather than any of the morphemes themselves, is the exponent of a particular grammeme or combination of grammemes. While in some cases these conventionalized expressions may have plausible semantic or diachronic motivations (as in the case of the first-person plural objects or, possibly, 2 > 1 verbforms — Beck 2001), it is also possible that, for all intents and purposes, the choice of a particular combination of morphemes to express a particular combination of grammemes is synchronically arbitrary. Further explanation based on semantic, diachronic, and typological work may or may not shed light on the origins of and motivations for particular morphological phrasemes, but without an accurate and rigorous model that includes such elements, we can not even begin to ask the larger questions.

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