
This is not a finished paper. At this point, it is meant only for discussion among some of my like-minded friends. I have not yet had the opportunity to consult suitable grammars, so I am relying on scanty empirical information in some research papers. The possibility of laughable blunders is non-negligible.

Some Notes on Synthetic/Periphrastic Alternation

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In Frampton (2001), I analyzed the alternation between *she is not happy* and *she isn't happy* (for example) as different spellouts of the same underlying syntactic structure in which Neg has raised and adjoined to Tns. It was claimed that it can happen that the low occurrence of Neg is spelled out rather than the occurrence adjoined to Tns. The purpose was to counter Bresnan's proposal that grammaticality can depend upon the existence or nonexistence of a different syntactic structure with the same meaning. From the computational view of grammar that I favor, competition of varying morphological structures with varying syntactic structures is a nightmare.

The paper of Ackerman and Stump (2001) is devoted to modifying Stump's Paradigm Structure theory so that it is empirically adequate to cope with the Mari facts. They call it "a substantive reconceptualization of the form and function of the lexicon in constraint-based theories of syntax." In short, the notion of paradigm is expanded to allow multi-word expressions to fill slots in a paradigm. Along the way they claim that the facts cannot be explained in syntactic approaches to morphology without appealing to competition between different syntactic structures in realizing the same meaning. The criticisms they make of "syntactic morphology" are wide of the mark because they fail to recognize that a theory like Distributed Morphology is responsible only for showing how *the syntactic words produced by the syntax* are realized. If the syntax produces a "hole in the paradigm", so be it. It is not the responsibility of morphology to explain the origin or the hole. Its source is to be found in the syntax.

Nevertheless, the verb forms that they consider do raise a problem for DM, as I will explain. The problem is not of the variety they suppose, but it appears to be a problem nevertheless. After explaining the problem, I will try to show that the idea which I introduced in Frampton (2001) helps solve the problem.

1. Negative verbs in Uralic

There is usually fairly complex verb morphology in Uralic languages. The most striking feature is that Uralic languages have special negative verbs that are used as auxiliary verbs to negate other verbs. (Cf. Finnish *en ota* ‘I do not take’ to *emme ota* ‘we do not take’. Note that *e-* is the stem of the negative verb, and the personal suffixes *-n* and *-mme* are attached to it.)

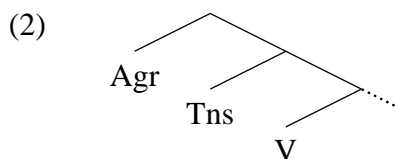
Anatole Lyovin, *An Introduction to the Languages of the World*

The Uralic language Mari uses negative verbs in some tenses, but combines the main verb and negation in a negatively inflected verb in other tenses. Various inflected form of the verb root *kol* ‘die’ in the Western dialect of Mari are given below:

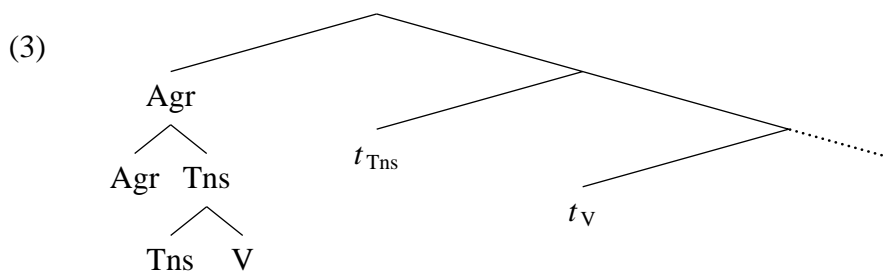
(1)	Affirmative forms		Negative forms	
			First past	
1	kolô-š-êm	kolô-š-na	š-əm kolô	š-nä kolô
2	kolô-š-êc	kolô-š-ta	š-əc kolô	š-ďä kolô
3	kolô-š	koleβ-ə	əš kolô	əš kolep
			Present desiderative	
1	kolô-ne-m	kolô-ne-nä	ə-ne-m kolô	ə-ne-nä kolô
2	kolô-ne-t	kolô-ne-ďä	ə-ne-t kolô	ə-ne-ďä kolô
3	kolô-ne-žə	kolô-ne-štə	ə-ne-žə kolô	ə-ne-štə kolôp
			Second past	
	singular	plural	singular	plural
1	kol-en-äm	kol-en-nä	kolê-đe-l-am	kolê-đe-l-na
2	kol-en-ät	kol-en-ďä	kolê-đe-l-at	kolê-đe-l-ďa
3	kol-en	kol-en-ət	kolê-đe	kolê-đe-l-ət

(According to Kangasmaa-Minn (1998:229), Ackerman and Stump’s source, “the first past refers especially to states and events which the speaker has personally witnessed, which the second past is more or less a record of what has been or happened without any emphasis on the speaker’s attitude towards the truth value of the utterance.”)

Leaving aside a possible subject in Spec(V), it is plausible that the relevant syntactic structure of affirmative clauses in Mari is:

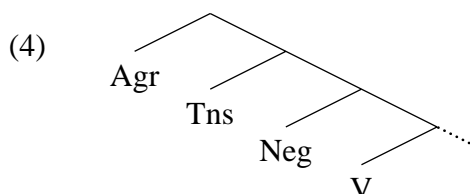


Given this structure, the affirmative paradigms in (1) can be derived if standard V-raising is assumed.

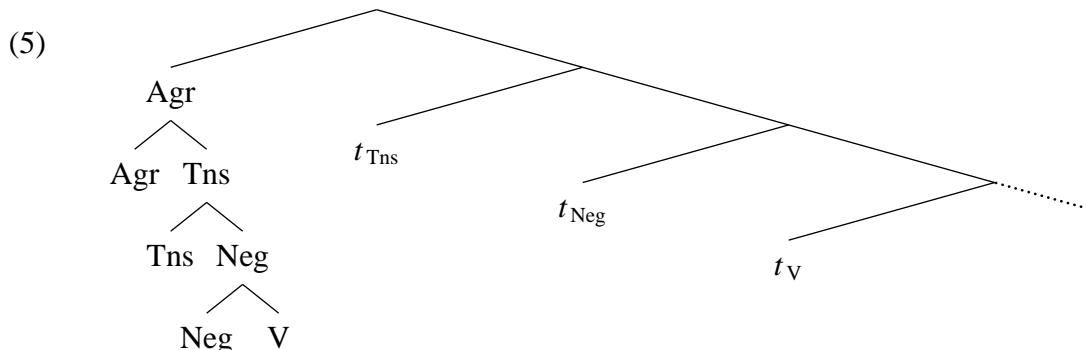


As expected, the tense suffix (-š, -ne, -en) appears between the verb and the agreement marker. I use Tns liberally here to include whatever features are associated with the desiderative.

It is also plausible that the structure of negative clauses is:



The negative second-past forms (2) can also be derived if standard V-raising is assumed.



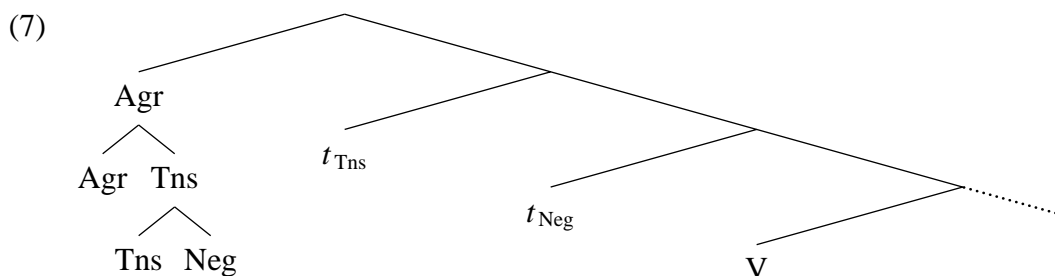
Note that the tense suffix appears to be missing from the negative inflected forms. DM has no particular difficulty in accounting for this. It will turn out, however, that this fact is of more significance than it might appear to be.

I will not go through the details, but DM has no difficulty in establish vocabulary items so that the appropriate forms are produced for all the affirmative forms (i.e. those without

Neg) and the synthetic negative forms of the second-past. Now consider the periphrastic negative forms, repeated below:

- (6)
- | | | | | |
|---|----------------------|----------------|--|--|
| | First past | | | |
| 1 | š-əm kolô | š-nä kolô | | |
| 2 | š-əc kolô | š-ďä kolô | | |
| 3 | əš kolô | əš kolep | | |
| | Present desiderative | | | |
| 1 | ə-ne-m kolô | ə-ne-nä kolô | | |
| 2 | ə-ne-t kolô | ə-ne-ďä kolô | | |
| 3 | ə-ne-žə kolô | ə-ne-štə kolôp | | |

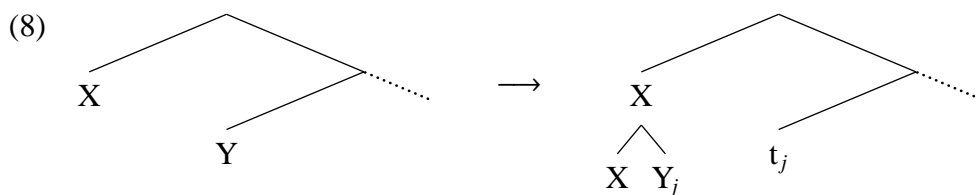
If the verb form was *kolô* throughout, the periphrastic negative forms could easily be derived from a syntactic structure in which V does not raise to Neg.



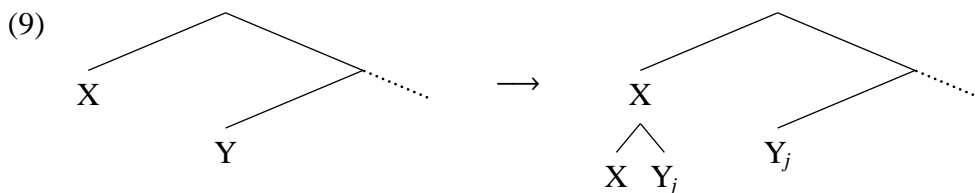
How does morphology enforce the relation between the lexical realization of V and Agr? V is realized as *kolep* in the 3pl, otherwise as *kolô*. The account which I will propose below will assume that, in fact, V raises all the way up to Agr in the syntax in both affirmative and negative clauses, so that V is in the same syntactic word as Agr, establishing the local context needed for context sensitive realization. I first review and update the proposal in Frampton (2001).

2. Split spellout of head chains

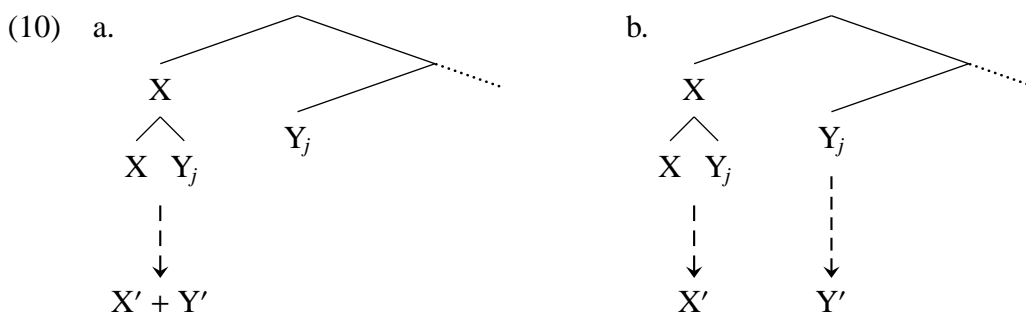
The GB view of head raising was something like:



Under the Copy Theory of Movement, this changed to something like:



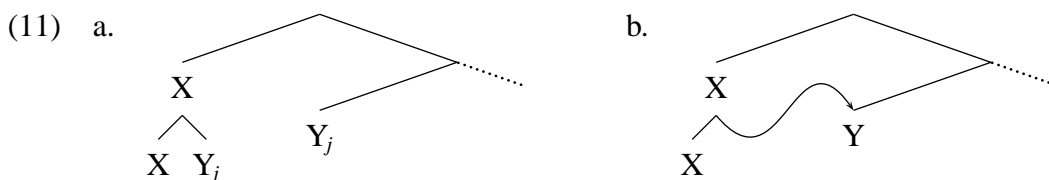
It is generally the case that realization of the structure (9) maps the complex head (X with Y adjoined to it) into a complex lexical item and the trace of Y is not spelled out. Typically, X is realized as an affix (often a suffix) on the realization of Y, as illustrated in (10a). X' and Y' are the realizations of X and Y. Frampton (2001) proposed that under certain conditions it can happen that Y is realized in its lower position and X in the higher position, as in (10b).



The syntactic structure has hierarchical, but no linear structure. The output, the lower line in (10), is linearly ordered. The mapping from the syntactic structure has the responsibility not only of realizing the syntactic words, but of linearly ordering them.

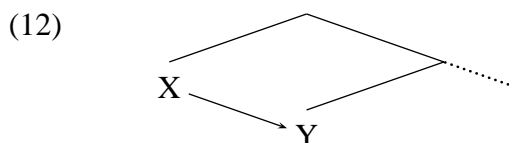
In Frampton (2001), the alternation between *she is not happy* and *she isn't happy* was claimed to be of this kind. The viability of that particular analysis is not relevant here, but it did introduce the idea that alternations between synthetic (*isn't*) and periphrastic (*is not*) forms could be different spellouts of a single underlying syntactic form. The purpose was to counter Bresnan's proposal that grammaticality can depend upon the existence or nonexistence of a different syntactic structure with the same meaning.

There are two refinements of (10) that may as well be introduced at the start. First, the "copy theory" should be replaced by what Chomsky calls the "occurrence theory". In place of (11a), the representation is (11b):



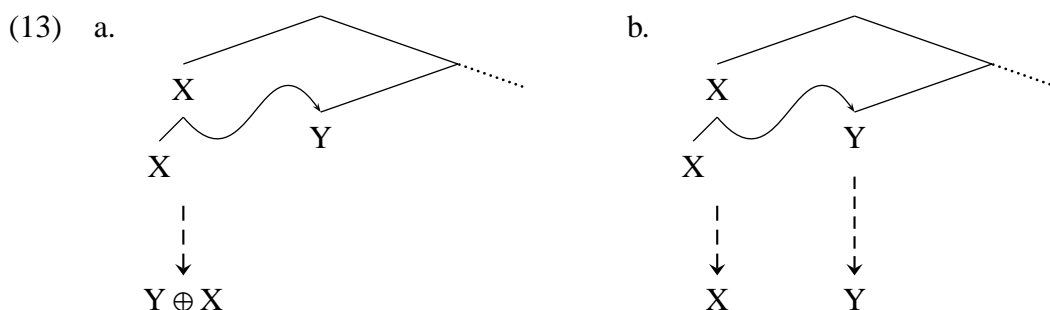
The point of the idea of occurrences is that the two versions of Y_j that appear in (11a) are the same item. There is no point to allowing the notation to obscure what this means.

As an aside, it is worth noting that Brody writes the structure (11b) somewhat more radically as:



I would adopt Brody's notation, but here I do not want the representations to look any stranger than necessary.

The second refinement of (10) is to the output of linearization. Frampton (2002) proposes that the linearization operation itself does not call on vocabulary insertion, but maps to a prelexical representation to which vocabulary insertion applies. In place of (10a) and (10b), we have:



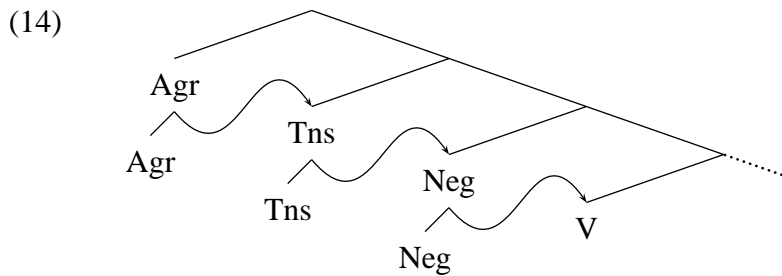
It is assumed that morphophonology then operates on forms like $X_1 \oplus X_2 \oplus \dots \oplus X_n$ cyclically, from left to right. This is bottom-up conversion of the prelexical representation into a morphophonological representation, using the lexicon to translate the feature bundles encountered in the computation. There is one important qualification. The default case has been illustrated in (13), so the feature bundles that the morphophonology sees are identical to the feature bundles in syntax. Generally, however, the linearization mapping can affect the feature bundles in various ways. This mapping is the locus for most (perhaps all) impoverishment, for example. Frampton (2002) argues that impoverishment before the lexicon is considerably simplifies the task of lexical lookup and should be preferred on these grounds even if it is not necessary for empirical adequacy. (This is an interesting conflict between the desiderata of formal simplicity and computational efficiency.) Importantly, linearization can sometimes make more dramatic changes in the feature structure. Morphological features which play no role in the syntax can be added to the feature bundles produced by linearization.

Note carefully that the linearization operations in (13) are not simply morphological operations. Linearization determines the linear order of the realizations of the syntactic words (i.e. complex heads) produced in by the syntax. It is the Spellout Operation which plays a central role in modern syntactic theorizing—subject to whatever organization of phrasal spellout proves to be correct.

Given this architectural framework, we are in a position to consider the phenomena which prompted writing this note.

3. Split spellout in Mari

We return now to the *kolô/kolep* variation in (6). Rather than (7), I will suppose that the negative forms in all tenses have the structure in (14) and the synthetic/periphrastic alternation is a spellout effect.

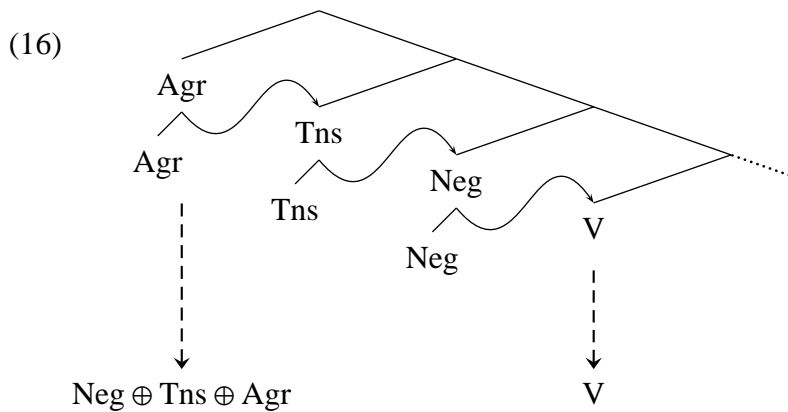


Suppose further that Western Mari is subject to:

(15) *Verbs cannot be inflected for both tense and negativity.*

This constraint appears to be widespread in the Uralic language group. There is some ambiguity in (15). I take it to apply to the output of Linearization. One can imagine various ways in which (15) can be satisfied.

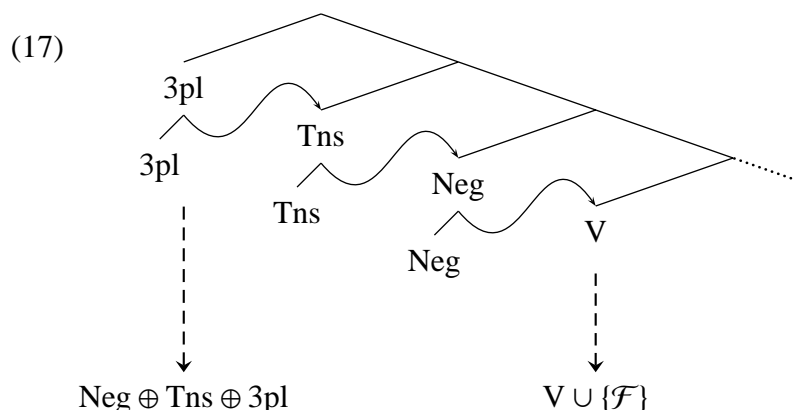
One strategy is split spellout (i.e. periphrastic realization).



It seems that this is the general strategy followed in the Uralic languages.

Crucially, V and Agr are in a local structure in syntax, the same syntactic word. The context is therefore available to locally differentiate between the form *kolep* which appears in the 3pl and the elsewhere form *kolô*. Suppose *kolep* is distinguished by some feature

\mathcal{F} . Assume that linearization mapping adds the feature \mathcal{F} to the bundle of morphological features that V is mapped to in the context of 3pl. So we have:



3pl here is used as the name of a feature bundle, with no prejudice about how person features are represented or what other features may be attached to Agr on the syntactic side. Features other than person and number features (gender features, for example) are deleted by Linearization.

Another strategy is deletion of the Tns. The synthetic negative second-past forms from (6) are repeated below:

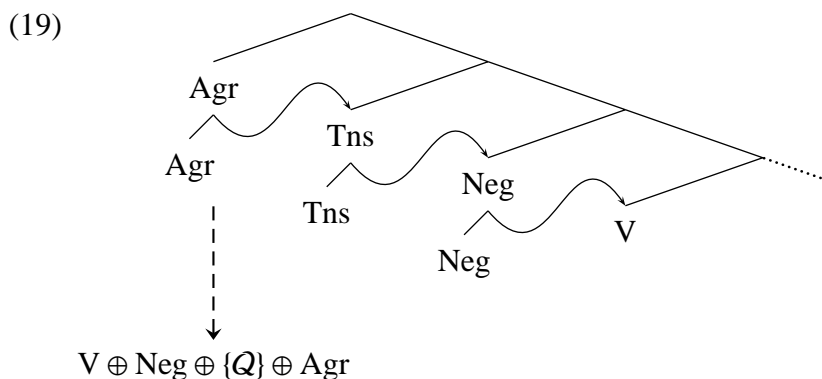
(18)

	singular	plural
1	kolê- δ e-l-am	kolê- δ e-l-na
2	kolê- δ e-l-at	kolê- δ e-l- δ a
3	kolê- δ e	kolê- δ e-l- $\hat{\delta}$ t

The tense suffix *-en* is absent and in its position, between the negative suffix *- δ* and the agreement suffix, an *l* appears. According to Ackerman and Stump:

The negative second-past realizations are built on a primary stem having two distinct forms—an ABSOLUTE form identical to its negative gerundial stem (its root plus the negative marker *- δ e* and a CONJUNCT form arising from the absolute form through suffixation of *-l*. The conjunct stem is used in the presence of inflectional suffixes and the absolute form, in their absence; thus the latter form is restricted to the third-person singular, since it alone is not overtly marked for subject agreement. (p. 18)

Suppose that the conjunct suffix (whatever precisely it may be) is the exponent of some feature Q and Linearization inserts Q when the tense features that offend (15) are deleted from the Tns feature bundle.



Perhaps one can argue that the conjunct marker *-l* is inserted only to keep the negative suffix and the agreement suffix separated (for whatever reason). If 3sg agreement is deleted by Linearization, there is no motivation for inserting the conjunct marker.

4. Top-down versus bottom-up spellout

It is clear that morphophonology processes the forms produced by Linearization in a bottom-up (i.e. root first) cyclic fashion. Split spellout of heads is much more natural if Linearization proceeds top-down, a non-standard view. See Frampton, Gutmann, and Legate (forthcoming) for a development of this idea and its consequences (object shift, etc.). I take the consequences for morphology to be an argument in its favor.

References:

Frampton, J. 2001. The *amn't* gap, ineffability, and anomalous *aren't*: Against morphosyntactic competition. CLS 37 (Panel Session).

Frampton, J. 2002. Syncretism, impoverishment, and the structure of person features. CLS 38 (Main Session).

Ackerman, F. and G. Stump. 2002. Paradigms and periphrastic expression: A study in realization-based lexicalism. To appear.

My papers are available at <http://www.math.neu.edu/ling/>. The Ackerman and Stump paper is available at <http://ling.ucsd.edu/~ackerman/maripaper.pdf>.