# An argument for the spell out of non-terminals

**1. Intro:** Late insertion approaches to morphology split on the question whether non-terminal nodes can be subject to insertion (e.g., Neeleman and Szendröi 2007) or not (Embick and Marantz 2008). In this paper, I first address the issue from a theoretical perspective, and then provide some empirical considerations in favor of the first option.

**2. Can the two approaches be empirically distinguished?** Suppose that a non-terminal composed of the heads X and Y is subject to spell out (1-a), as proposed by Neeleman and Szendröi (2007). In classical DM, this situation can be incorporated in at least three distinct ways: (i) Fusion applies to X and Y, yielding a single terminal, which is later subject to lexicalization (1-b); (ii) it is only one head that is subject to lexicalization, other heads are spelled out as Ø (1-c); (iii) both X and Y are spelled out by an overt exponent distinct from x, but there is a phonological process that conflates them into x (1-d) (a possible solution for French genitive+definite *du (= de + le)*, according to Marantz 2006). Is then the difference just a matter of taste?

**3. Theoretical issues:** A matter of possible theoretical concern is the solution in (1-b). Fusion presupposes that apart from syntax and insertion, there is an additional operation, Fusion. By Occam's Razor, Fusion is undesirable. Of course, still, we are left with the choice between (1-a) on the one hand, and (1-c) and (1-d) on the other.

**4. Empirical issues:** I believe that the solution in (1-a) is well illustrated in Classical Armenian (CA). In (2), I give two paradigms of CA. The instrumental singular has the marker $w$, or $b$, depending on phonological context (preceded by vowel or consonant). The form of the instrumental singular form re-appears in the instrumental plural form, which is derived by the addition of -$k'$. Interestingly, the -$k'$ is identical to the nominative plural marker. This pattern leads to the solution in (3): the base-generated order is K > Plural > N, the NP moves in one step to the top of K, leaving Plural behind. K is realized either as Ø (nom) or $w/b$ (instrumental), and the Plural as -$k'$.[1] In the other plural cases, however, the decomposition into Plural and K is impossible: we find portmanteau markers: -$s$/-$c'$.

In a theory where spell out of non-terminals is allowed, the entry (4) will lead to the insertion of the portmanteau exponents. This solution expresses the data in a natural way: if there is a portmanteau suffix in the lexicon, it is used to spell out both Case and Number. If there isn't one, as in the case of instrumental and nominative, insertion targets terminal nodes.

The solution in (1-c) can be upheld in principle; however, it leads to difficulties. Assume for concreteness, that we take the exponents -$s$/-$c'$ to be exponents of K, inserted just in case the Number is plural. That would require Plural to be Ø in acc, loc, dat, gen and abl, while it would be -$k'$ in nom and ins. This solution, however, seems to go against a possible principle of allomorphy, the *A-B-A pattern observed by Bobaljik (2007). I sketch the reasoning below.

Bobaljik observes that if positive and superlative have the same allomorph of the root, the comparative has to have an identical allomorph too. He derives this by assuming a particular syntactic structure, where comparative is formed on top of the positive, and superlative on top of the comparative (5). If there is a specific form of the root for the comparative, it also has to show in the superlative, since the comparative is contained inside the superlative. This bans the *A-B-A pattern.

What can be observed from the sample paradigms (and it holds for the whole language) is that Case in CA is organised in the same way. Specifically, only adjacent cases in the paradigms can be syncretic. I adopt the proposal by Caha (2007) that this property of the Case paradigm follows under the same conditions as Bobaljik's data: Case is hierarchical, such that crucially ins contains acc, which in turn contains nom (6). The needed allomorphy (Plural being the same for nom and ins, but different for acc) then violates what seems to be an independently needed principle: *A-B-A.

The solution in (1-d) fails for various reasons. Most importantly because the locative -$s$ would have to arise from -$i$ + $k'$, but the same combination would also have to lead to the dative -$c'$. Hence, (1-a) is the only way left.

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[1] I abstract away from the fact that, obviously, the ins is not -$w$, but -$a$ + -$w$, which are separated by the theme -$n$- in the second pair of paradigms. This can be incorporated into the analysis by decomposing K into two heads, and stranding the theme in an intermediate position between them. Compare also the loc/dat/gen.sg $i$ in the first paradigm to the loc/dat/gen $i$-$n$ in the third one.
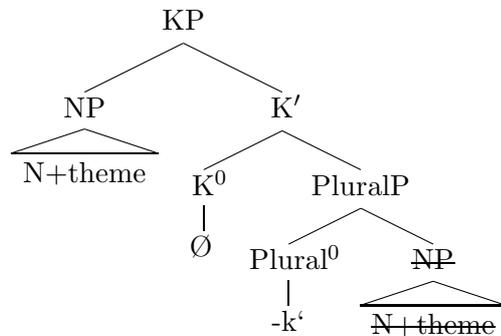
(1)  a.  /morpheme x/ ⇒  [X⁰ Y⁰]  (merged)        d.  [X⁰ Y⁰] (z + y = x)
                                                          |    |
                                                          z    y

     b.  [X⁰ Y⁰] ⇒ X+Y

     c.
```
            X⁰        Y⁰
            |         |
        morpheme x    Ø
```

(2)  *Paradigms of Classical Armenian*

|      | 'nation' sg. | 'nation' pl. | generation, sg. | generation, pl. |
|------|--------------|--------------|-----------------|-----------------|
| nom  | azg          | azg-kʻ       | az-n            | az-in-kʻ        |
| acc  | azg          | azg-s        | az-n            | az-in-s         |
| loc  | azg-i        | azg-s        | az-in           | az-in-s         |
| dat  | azg-i        | azg-a-cʻ     | az-in           | az-an-cʻ        |
| gen  | azg-i        | azg-a-cʻ     | az-in           | az-an-cʻ        |
| abl  | azg-ê        | azg-a-cʻ     | az-(a)n-ê       | az-an-cʻ        |
| ins  | azg-a-w      | azg-a-w-kʻ   | az-am-b         | az-am-b-kʻ      |

(3)  Derivation of the plural forms

     a.  Nominative:
```
                    KP
               /          \
             NP            K'
            /  \         /    \
       N+theme      K⁰       PluralP
                    |       /      \
                    Ø   Plural⁰     N̶P̶
                        |        /      \
                       -kʻ    N̶+̶t̶h̶e̶m̶e̶
```

     b.  Instrumental:
```
                    KP
               /          \
             NP            K'
            /  \         /    \
       N+theme      K⁰       PluralP
                    |       /      \
                   -w   Plural⁰     N̶P̶
                        |        /      \
                       -kʻ    N̶+̶t̶h̶e̶m̶e̶
```
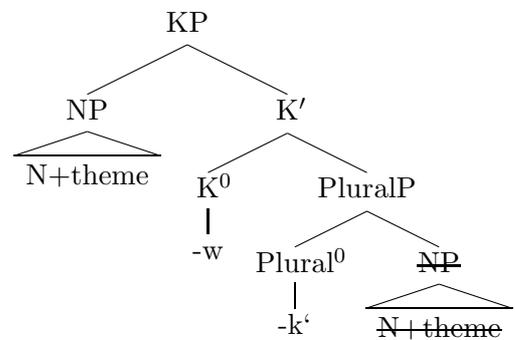
(4)  /-s, -cʻ/ ⇒
```
        K     Pl
              |
              Pl
```

(5)  [superlative [comparative [positive [root]]]]

(6)  [ins [acc [nom [pl ... ] ] ] ]

# References

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