A SPANNING ACCOUNT OF DENOMINALS IN ENGLISH AND ROMANIAN

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Abstract: *In this paper, I aim to provide an account of denominal verbs in English and Romanian that is significantly different from the traditional one resorting to incorporation/ movement (Hale & Keyser 2002). Instead, by assuming that a single label can be used for heads, intermediate projections and phrases, and by resorting to the spell-out of several heads together (Brody 2000, Ramchand 2014, Svenonius 2012, 2014), I adopt the view that a word is a span, and sketch a spanning analysis of denominal verbs which is elegant and economical at the same time.*

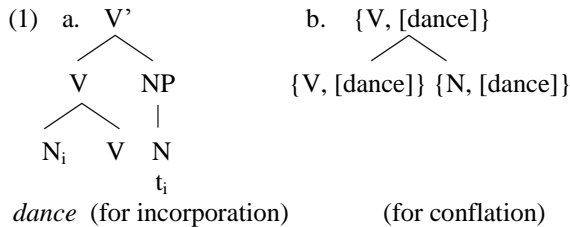**Keywords:** *spanning, denominal verbs, economy*

1. Aim

The aim of this paper is to provide a novel approach to denominal verbs (DVs)[1] whose form is identical to the base noun/ nominal root, such as 'to dance', 'to corral (the horses)', 'to hammer (the metal)' a.o in English, and also to denominal verbs whose form differs from the base noun/ nominal root, such as 'a dansa' (to dance), 'a adăposti' (to shelter) or 'a ciomăgi (un om)' (to club (a person)) in Romanian. Instead of an incorporation or conflation account (Hale & Keyser 2002), which considers denominals to be derived either via movement of noun roots into v (incorporation) or via merge (conflation), or a distributed morphology account (Halle & Marantz 1993, 1994), according to which terminal nodes are spelled out and fused together, I will put forth a spanning approach according to which a single item can spell out a span, i.e. a complement sequence of heads in an extended projection (Svenonius 2012, 2014), and no movement is involved. The advantage of such an analysis would lie in its elegance and parsimony in accounting for the data, a desirable consequence of eliminating movement in favour of the spell-out of a sequence of heads.

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[1] Throughout the paper, I employ the term 'denominal verb' to refer to verbs that seem to have a relation to nouns/ nominal roots. I have chosen to use this term due to its neutral meaning, i.e. its lack of bias with respect to theoretical frameworks, unlike, for instance, the term 'noun-incorporating verb', which implies an account in terms of incorporation, or the term 'noun-derived verb', which implies an account in terms of derivation, where the base of derivation is the noun.

2. Previous Analyses

The traditional account of denominal verbs is the incorporation account (Hale & Keyser 2002), arguing that denominals are the result of noun incorporation, i.e. of head movement of the noun into the verb (in the case of the verb *dance*, for instance), or of the noun into the verb, and then, of V-N into P (in the case of the verb *shelve*). Later on, Hale & Keyser (2002) argued that incorporation fails to account for the issue of cognate objects (*dance a dance*), as this would imply movement into a position already occupied by a trace. Instead, they proposed a theory of conflation, involving the merge/ copy of the signature of N into V (for *dance*), or of the merge/ copy of the signature of N into P, and then of everything into V (for *shelve*):

(1)   a.   V'   b.   {V, [dance]}

        V   NP   {V, [dance]} {N, [dance]}

    N_i V   N

               t_i

dance (for incorporation)   (for conflation)

The incorporation/ conflation accounts (Hale & Keyser 2002, Mateu 2002) have the advantage of being semantically rich, as they rely heavily on paraphrases, such as 'DO dance' for *dance*, or 'PUT the books ON shelf' for *shelve the books* (hence, null or silent items). However, the problem is they mostly rely on data from English. While such analyses seem to capture denominals in English, they do not really account for the different forms of the verb and the noun/ nominal root in Romance.[2]

Distributed Morphology (Halle & Marantz 1993, 1994) provides a framework that accounts for the different forms of nouns and denominal verbs much better. In DM, terminal nodes (the heads of the projections NP, VP, vP) are spelled out and then they are fused together <v-V-N> through the operation of Fusion. This manages to capture the transparent decompositionality of a denominal verb such as *dansa* in Romania into *dans* and the verbal affix *–a*, and there is no need to resort to silent items or movement operations, as in the incorporation/ conflation accounts.

While both incorporation/ conflation and DM are possible accounts of denominal verbs, I suggest a novel account which resorts neither to movement, nor to Fusion, but, instead, eliminates intermediate labels and makes use of spanning as a spell-out mechanism. DM manages to account for the data under discussion. However, for lack of space, I will not go into an extensive presentation of the framework. The reason why I choose to provide a spanning account of denominals rather than a DM one is related to the fact that while DM adopts X-bar, spanning does not, using the same label X for both head (X), intermediate projection (X') and phrase (XP). This makes spanning more economical, as it uses less projection (X') and phrase (XP). This makes spanning more economical, as it uses less

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[2] This is because an analysis in terms of silent items would be problematic for the placement of affixes. If one decomposes the verb *dansa* in Romanian by resorting to silent items ('DO dance'), the question would be where to place the affix *–a*. One might even argue there would be competition for the same position in the tree between the silent item DO and the affix *–a*.

labels. Moreover, while DM resorts to Fusion of heads, spanning just spells out a portion of the tree (a span).
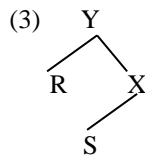
3. Spanning

According to spanning (Brody 2000, Adger 2010, Svenonius 2012, 2014, Ramchand 2014), lexical insertion targets spans rather than terminal heads (as in Distributed Morphology) or phrases (as in nanosyntax). Words are spans, which are defined as a sequence of heads in an extended projection (Svenonius 2012). For instance, in Romanian, an example would be the word *cartea* 'book-DEF ART fem, sg', a span that is the spell-out of the extended projection D-Num-N.

A very important innovation is the elimination of redundant labels to the extent that XP bears the same label as its head, namely X. Given that heads select phrases, and phrases are projections of heads, it follows that heads select heads, and thus, one may very well use the same label for X, X' and XP. This acts as a telescope into the structure of phrases. A structure such as (2):

(2) $[_{YP} R [Y [_{XP} S [X...]]]]$

becomes

(3)   Y
      / \
     R   X
     |
     S

Interestingly, this allows for linearization to be read off the structure. To be more specific, spanning adopts Brody's (2000) Mirror Theory:

> Word Mirror: The syntactic relation 'X complement of Y' is identical to an inverse-order morphological relation 'X specifier of Y' (where the latter gives rise to the morphological strucure [X [Y] linearized from left to right).
>
> (Ramchand 2014, 11)

The Brodyan approach is a direct linearization theory (DLT) where linearization is read off the structure: specifiers are linearized to the left of their heads (*always go*), and heads are linearized to the left of their complements (*has gone*)).This has a serious advantage over the Linear Correspondence Axiom (LCA) tradition (Kayne 1994), as Ramchand (2014) shows, given that the Kaynean approach required various movement operations (many unmotivated) so as to create the appropriate c-command structures before letting the LCA linearize it in head-final languages. However, the antisymmetric idea[3] (that asymmetric c-

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[3] According to Kayne (1994), this would account for the empirical asymmetry between head-first and head-final structures: the fact that there are no V second to last languages, the fact that, when a modifier of a head occurs after the head, the order can reflect either the basic order or the inverse

command means precedence) is still embraced in its essence. What is discarded is the need to resort to unmotivated word order movements. Instead, a desirable solution according to Brody (2000) and Ramchand (2014) would be to argue that there is a specific linearization algorithm of the base structure. One can simply specify where a morpheme spells out by means of the diacritic @ rather than resort to syntactic movement (Brody 2000, Ramchand 2014). Moreover, in order to indicate that a head forms a mirror word with the head(s) it selects, one can use another diacritic * (Ramchand 2014). The exact placing of the diacritic is a language-specific issue[4]. For instance, one would have something like:

(4) Neg_*

$$P \quad Fin@$$

$$Q \quad T_*$$

$$R \quad Asp_*$$

$$S \quad V@$$

Linearized as: P Q [Fin-Neg] R S [V-Asp-T]
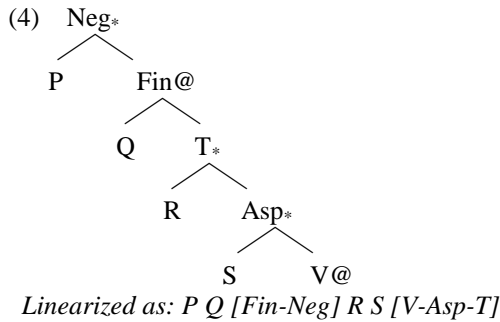
In the spanning model, spell-out consists of two steps, an approach motivated by the strict separation of phonology and syntax: L-Match and Insert. The first step (L-Match) associates syntactic structures with the syntactic features in lexical entries. L-Match can associate more than one exponent with a node in the tree (in French, for instance, $D_{[+DEF, +F, -PL]}$ can be associated both with *le* $<D_{[+DEF, -PL]}>$, which is unspecified for gender[5], and with *la* $<D_{[+DEF, +F, -PL]}>$, which is specified for gender (Svenonius 2014)). After L-Match, the syntactic features are no longer available. Insert employs a linearization mechanism which establishes the order in which the phonological units are concatenated on the basis of syntactic dependencies and chooses between the various forms available at L-Match.

4. Analysis of English Denominal Verbs

I would like to propose that spanning can account for denominal verbs as well: a single item ('dance', 'shelve', 'hammer') can be argued to spell out a span, in the case of *dance*, a complement sequence involving N, V and v.
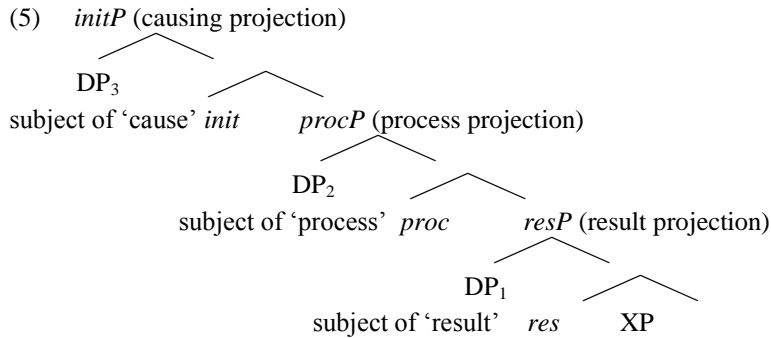
In my account of denominal verbs, I will make use of Ramchand (2008) 's decomposition of verbs in first phase syntax. According to Ramchand (2008), verbs can be decomposed into three components/ subevents in the event-structure: 1) a causing subevent,

order, whereas when a modifier of a head occurs before a head, it reflects the basic order, as well as other facts of language.

[4] As pointed out by a reviewer, one could argue that the proposed use of the diacritics @ and * is just as ad-hoc/stipulated as Kayne's unmotivated movements. Language-specificity seems to be the solution for the differences in spell-out.

[5] Since *l'* appears with both masculine and feminine nouns, the entry for *le* is argued by Svenonius (2014: 3) to be underspecified for gender, just like *les* and *des*.

2) a process-denoting subevent, and 3) a subevent corresponding to the result state. The syntactic representation makes use of three projections corresponding to these subevents: (i) an initiation phrase (initP), whose subject is the INITIATOR, (ii) a process phrase (procP), whose subject is an UNDERGOER, and (iii) a result phrase (resP), whose subject is the RESULTEE, as can be seen in (5):

(5) *initP* (causing projection)

      DP$_3$

subject of 'cause' *init*   *procP* (process projection)

            DP$_2$

      subject of 'process' *proc*   *resP* (result projection)

                    DP$_1$

             subject of 'result' *res*   XP

An important consequence of adopting such an analysis is that a DP can have a composite thematic role. In a sentence such as *Katherine broke the stick, the stick* is both a resultee (subject of the resP) and an undergoer (subject of the procP). Moreover, a single verb may identify more than one subevent. For instance, in a sentence like *Ariel entered the room*, the verb *enter* identifies all subevents: the initiation subevent, the process subevent, and the result subevent.
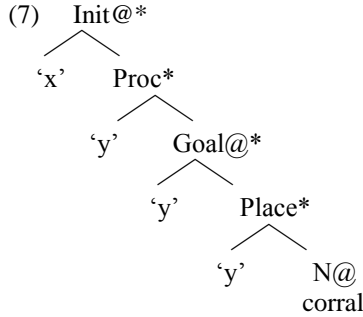
While I embrace Ramchand's (2008) verbal decomposition into initP, procP, resP, I choose to eliminate intermediate projections, thus using the same label for X, X' and XP. In addition, I adopt Brody's Mirror Theory and the idea that words are spans.

In the case of a verb such as *dance*, one can construct the following representation, where X is a DP (e.g. 'John'):

(6)   Init@*

  'x'   Proc*

       'x'   N
           dance
Linearized as x [N Proc Init]
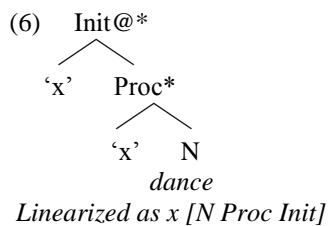
At L-Match (Lexical Match, the first step of Spell Out in spanning, involving syntactic categories), this structure gives rise to the item *dance*.
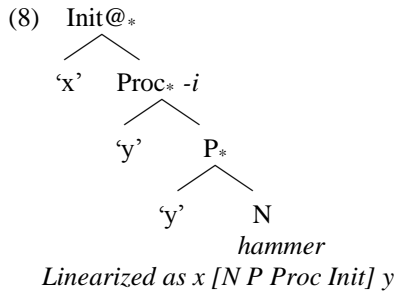
In the case of *corral*, one can assume the following spanning account, using Pantcheva's (2011) analysis of spatial prepositions:

(7)   Init@*
       / \
     'x'   Proc*
           / \
         'y'   Goal@*
               / \
             'y'   Place*
                   / \
                 'y'   N@
                       corral

Linearized as x [Proc-Init–Place-Goal– N] y

At L-Match, the item that wins is x [corral Ø Ø Ø Ø] y, where x can be lexicalized by *Mary*, and y can be lexicalized by *the horses*. The question would be whether or not to assume an analysis with silent items (such as CAUSE for Init, DO for Proc, IN for Goal and Place a.o.), i.e. phonologically null items endowed with meaning. I opt for a spanning version without silent items. This is because, although postulating silent items has the advantage of making the representation semantically richer, it presents certain disadvantages: it would imply using a lot of additional lexical material, the analysis would rely on a lot of diacritics, and it would mean storing both the noun and the verb in languages where the noun and the denominal verb have a different form (such as Romanian). For these reasons, a no silent item account is preferable to a silent item one.

A spanning approach can also account for instrumental verbs like 'hammer' (Init, Proc, P[+instrument]) ('hit with hammer'), as shown in (8). If one assumes the lexicon only contains one item (the noun), at L-Match, we get *x [hammer Ø Ø Ø] y*.

(8)   Init@$_*$
       / \
     'x'   Proc$_*$ *-i*
           / \
         'y'   P$_*$
               / \
             'y'   N
                   hammer

Linearized as x [N P Proc Init] y

Another possibility would be to assume there is no P (*hammer* would be paraphrasable as *use a hammer*:

(9)   Init@$_*$
       / \
     'x'   Proc$_*$
           / \
         'y'   N
               hammer
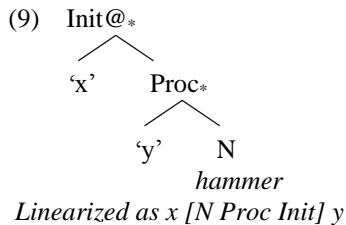
Linearized as x [N Proc Init] y

An important remark is in order here, namely, that one can distinguish between two types of instrument verbs: true instrument verbs (such as *chain*, which can only take a cognate object that is identical to the noun/ nominal root as in *to chain with a chain*) and pseudo-instrument verbs (such as *hammer*, which allows the combination *to hammer with a shoe*, and not just *to hammer with a hammer*) (Kiparsky 1997). To capture the difference between pseudo-instrumentals such as *to hammer* and true instrumentals such as *to chain*, one might argue that, in *hammer*, we are actually dealing with an OBJECT TYPE *hammer*, or a Classifier selecting *hammer* (10):

(10) a. Class
          ⟋‾‾⟍
              N/ NR
              hammer

      b.   N/ NR
            chain

In addition, spanning can account for pseudo-agentive verbs (like 'spy') if one assumes it is not the case that the agentive noun is derived from the verb. Given that verbs like 'spy' or 'nurse' are paraphrasable as 'act/ behave like a spy/ nurse', and not as 'spy/ nurse acts/ does', I will assume a structure such as <Init, Proc, P, N>. The representation of a verb such as *nurse* would be:

(11)   Init@$_*$
       ⟋‾‾⟍
    'x'   Proc$_*$
            ⟋‾‾⟍
         'y'   P$_*$
                 ⟋‾‾⟍
              'y'   N
                      nurse
Linearized as x [N P Proc Init] y

At L-Match, we get *x [nurse ∅ ∅ ∅] y*, where x can be lexicalized by *John*, and y can be lexicalized by *the child*, for instance. In addition, P can be considered a CPv (Comparative Preposition) or the preposition could be considered as having the feature [+comparative]- in this way, the representation encodes more semantic information. The same analysis is provided in the case of the pseudo-agentive verbs in Romanian, with the only difference that Proc is lexicalized as a thematic vowel in Romanian.
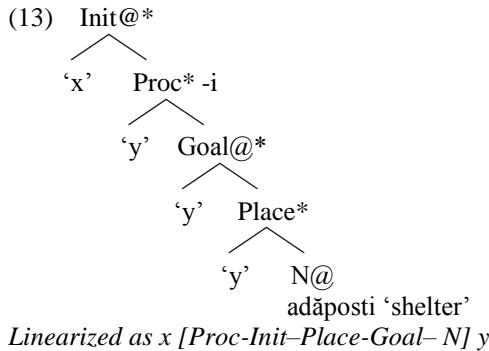
5. Analysis of Romanian Denominal Verbs

Unlike English denominals, Romanian denominals in the short infinitive have a different form from the noun, as there is an additional infinitival affix indicating the verbal declension (*-a, -ea, -e, -i*). While the noun is *dans* 'dance', the long infinitive of the verb is *a dansa* 'to dance' and the short infinitive is *dansa* 'dance'. I will assume the short

infinitival affix lexicalizes Proc (although another option would be to argue for the existence of another verbal affix projection VAffix). Indeed, the thematic vowel/ verbal affix is problematic. According to Kiparsky (1973), for instance, it is now semantically empty, irrespective of its initial meaning. According to Grundt (1978), however, it is an inflectional marker and its meaning is retrievable. While in the case of nouns, the meaning would be definiteness, just as in Sanskrit or Basque, in the case of verbs, it is not clear in what way one can account for it; Grundt (1978) suggests as a possible solution agreement of the verb with its subject noun not only in person and number but also in definiteness. Of course, the two views (that the affix is meaningless and that it has meaning) are opposite and result in two very different representations. Given that, once the verbal affix is added to a (nominal) root, what we get is a verb, I will assume the affix encodes infinitival inflection or 'verbiness', hence, that it has meaning. Moreover, I will place it under Proc, although, in doing so, I do not mean to imply that it has a processual meaning, but rather an event one:

(12)   Init@*
       ╱╲
   'x'   Proc* -a
          ╱╲
       'x'   N
           dans 'dance'
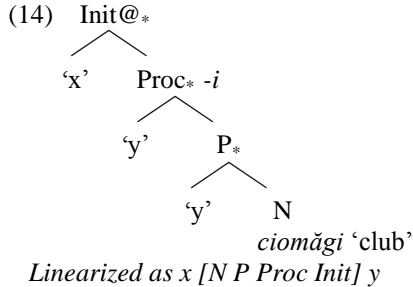*Linearized as x [N Proc Init]*
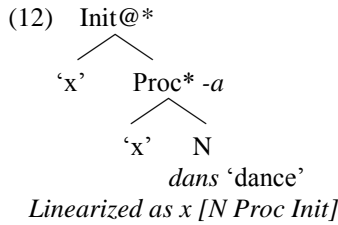
I assume the affix is chosen at L-Match, given the fact that there does not seem to be a clear phonological conditioning of its attachment to certain roots.

A location verb such as *adăposti* ('shelter-verbal affix') receives the following representation:

(13)   Init@*
       ╱╲
   'x'   Proc* -i
          ╱╲
       'y'   Goal@*
              ╱╲
           'y'   Place*
                 ╱╲
              'y'   N@
                  adăposti 'shelter'
*Linearized as x [Proc-Init–Place-Goal– N] y*

Romanian has to store the noun, the question is whether it should store the verb as well or only the verbal declension, given that, unlike denominal verbs in English, denominal verbs in Romanian have a different form than the nouns/ nominal roots they derive from. A possible solution would be to postulate that, together with a list of the verbal affixes, the lexicon contains a list of the elements/ nominal roots the verbal affixes combine with.

Spanning can also account for instrumental verbs like 'ciomăgi' (Init, Proc, P[+instrument]) ('hit with club') (14):
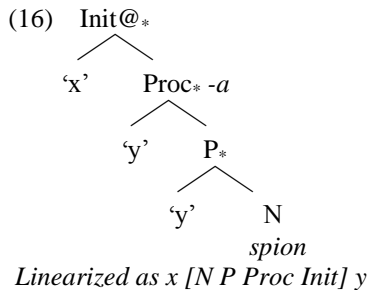
(14) Init@$_*$

    'x'   Proc$_*$ -*i*

        'y'   P$_*$

           'y'   N
                 ciomăgi 'club'

Linearized as x [N P Proc Init] y

At L-Match, the resulting element is *x [ciomăgi Ø Ø Ø]* y, and the verbal affix is chosen.

If one assumes there is no P and a possible paraphrase is 'use a club', one can provide the following representation of the verb *ciomăgi* 'club' within the spanning account:

(15) Init@$_*$

    'x'   Proc$_*$ -*i*

        'y'   N
              ciomăgi

Linearized as x [N Proc Init] y
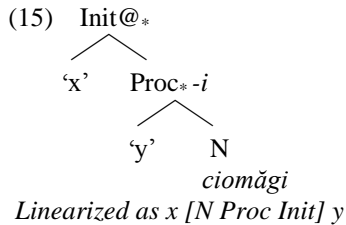
In addition, spanning can account for pseudo-agentive verbs (like *spiona* 'spy'):

(16) Init@$_*$

    'x'   Proc$_*$ -*a*

        'y'   P$_*$

           'y'   N
                 spion

Linearized as x [N P Proc Init] y

At L-Match, we get *x [spion Ø -a Ø] y*, where x can be lexicalized by *Ion* (John) and y can be lexicalized by *copilul* (child-the), for instance.

If one desires to create a more homogeneous analysis for denominals in English and Romanian, one can claim that there is only one item in the lexicon in both languages (a noun), and the verb is generated syntactically. On the other hand, if one wishes to create a contrast between languages, one can claim that Romanian stores the verbal affix and the noun, but it does not store the verb, or it stores both the noun and the verb, whereas in English, one does not need to store the verbal affix, and it can store only one category.

6. Conclusion

In conclusion, spanning offers an elegant and economical account of denominals. Unlike incorporation/ conflation accounts, it does not resort to movement or null/ silent items (such as CAUSE, DO, IN/ ON a.o.), nor does it resort to the X-bar framework and to Fusion as DM does. Although silent items make the analysis semantically richer, they also have the disadvantage of resorting to more lexical material. Movement is costly from the point of view of the system. As far as X-bar is concerned, in spite of its well-established theoretical basis, it is uneconomical, as it resorts to three levels (X, X', XP). Fusion is also costly, as it needs to be postulated as an additional morphological operation. Instead, by using a single label for X, X' and XP, and by spelling out several heads together as a word (thus avoiding movement or Fusion), the spanning framework manages to account quite neatly for the formation of denominal verbs both in English and in Romanian, in a much simpler way. As I have shown, such an analysis can be applied successfully to many types of denominal verbs (theme verbs, location verbs, locatum verbs, instrument verbs, pseudo-agentive verbs a.o).

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