The possessor-article conspiracy in Bulgarian
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(1)   The Bulgarian pronominal possessor is either a long form with adjectival endings (agreeing with the nominal head), or an invariable short form which is identical with the dative clitic pronoun.

	long forms				**short forms**
	masc	fem	neuter	plural	
1sg	moj	moja	moe	moi	*mi*
2sg	tvoj	tvoja	tvoe	tvoi	*ti*
3sg masc	negov	negova	negovo	negovi	*mu*
3sg fem	nein	nejna	nejno	nejni	*i*
1pl	naš	naša	naše	naši	*ni*
2pl	vaš	vaša	vaše	vaši	*vi*
3pl	texen	tjaxna	tjaxno	texni	*im*

(2)   Long form possessors can be used definitely or indefinitely.
   a. Vidja-x [moja-ta xubava kniga].
      saw-1sg my-the nice book
      'I saw my nice book.'
   b. Vidja-x [moja xubava kniga].
      saw-1sg my nice book
      'I saw one of my nice books/ I saw a nice book of mine.'

(3)   Short form possessors can be used only definitely.
   a. Vidja-x   [xubava-ta *mi* kniga].
      saw-1sg   nice-the   my book
      'I saw my nice book.'
   b. *Vidja-x   [xubava *mi* kniga].
       saw-1sg   nice   my book

(4)   Short form possessors occur after the definite element of a DP or DemP .
      (Demonstratives are inherently definite.)
   a. statija-ta *mu*   'his article'
      article-the his
   b. interesna-ta *mu* statija   'his interesting article'
      interesting-the his article
   c. mnogo-to *mu* interesni statij   'his many interesting articles'
      many-the his interesting articles
   d. tazi *mu* interesna statija   'this interesting paper of his'
      this his interesting article

*) Most of the Bulgarian data are taken from Schuercks & Wunderlich 2001; the analysis given here slightly differs from theirs.

(5) The possessor clitic can also be realized DP-externally (by possessor raising?).
    a. Vidja-x [interesna-**ta** *i* statija]
       saw-1sg interesting-the her article
       'I saw her interesting article.'
    b. Vidja-x *i* [interesna-**ta** statija]
       saw-1sg her interesting-the article
       'I saw her interesting article.'

(6) In this case the NP can also be indefinite.
    a. *Vidja-x [interesna *i* statija]
       saw-1sg interesting her article
    b. Vidja-x *i* [interesna statija]
       saw-1sg her interesting article
       'I saw an interesting article of hers.' (indefinite)
       'I saw one of her interesting articles.' (unspecific)

(7) Lexically marked datives cannot be extracted.
    Vidja-x (*mu) pomaga-šti-jat mu čovek.
    saw-1sg 3sg.DAT help-PTCP-the 3sg.DAT person
    'I saw the person who was helping him'

Excursus 1: Do possessor dative clitics in the VP originate from possessor raising, or are they base-generated in the VP?

(8) a. Sein Auge schmerzt/ ?Eines seiner Augen schmerzt.
    b. Ihm schmerzt das/ein Auge.

(9) Hungarian: a nominative possessor is NP-internal, while the dative possessor is in SpecDP (a possible escape position?)
    a. [[a fiú piros kalap-ja]] b. [a fiú-nak [a piros kalap-ja]]
       the boy.NOM red hat-3sgP   the boy-DAT the red hat-3sgP
       'the boy's red hat'   'the boy's red hat'

(10) a. The NP-internal possessor gets specific reading:
       Nem ismert-em [Mari nővér-é- t]
       not knew-1sg [Mari.NOM sister-3sgP-ACC]
       'I did not know Mari's sister.'
    b. Only the NP-external possessor allows unspecific reading:
       Mari-nak nem ismert-em [nővér-é- t]
       Mari-DAT not knew-1sg [sister-3sgP-ACC]
       'I never knew any sister of Mari.'

The DP-external possessor allows more readings than a DP-internal one:

(11) Péter fel-olvas-t-a a lány-nak a könyv-é-t.
    Peter PV-read-PAST-3sg the girl-DAT the book-3sgP-ACC
    i. 'Peter read his/her book to the girl.'
    ii. 'Peter read the girl's book (to someone).'

Assuming base-generation, the possessor clitic in the DP does not need to be in an extraction position.

First attempt: a simple OT analysis claiming that both the Bulgarian definite article and the short form possessor are second position clitics in the DP. Problem: they appear only after the first *nominal* element of the DP (demonstrative, numeral, adjective or noun), not after adverbs. Thus, what precedes must neither be a single word nor a full phrase.

(12) a. **onezi** *im* novi knigi   demonstrative
              those their new books
              'those new books of them'

      b. mnogo-**to** *ti* interesni knigi   numeral
              many-the your interesting books
              'your many interesting books'

      c. mnogo interesna-**ta** *mi* statija   *adverb
              very interesting-the my article
              'my very interesting article'

      d. tvurde burzo izpraznena-**ta** *mu* butilka   *adverb
              too quickly emptied-the his bottle
              'his too quickly emptied bottle'

      e. semej-ni-**te** *im* problemi   derived adjective
              family-ADJ-the their problems
              'their family problems'

      f. izbrana-**ta** *i* včera roklja   participle
              chosen-the her yesterday dress
              'the dress she has chosen yesterday'

      g. predpisano-**to** *mi* ot lekar lekarstvo   participle
              prescribed-the my by doctor medicine
              'my medicine prescribed by a doctor'
              'the medicine prescribed to me by a doctor'

      h. predpolagaemo-**to** *ti* putavane do Kitaj   non-intersecting adjective
              alleged-the your travels to China
              'your alleged travels to China'

(13) The article also follows the first nominal in a coordination, and has then scope over the full NP, unless it follows the head itself:

      a. nova-**ta** *mu* i interesna kniga   *[nova i interesna]-**ta** *mu* kniga
              new-the his and interesting book
              'his [new and interesting] book'

      b. mnogo-**to** *mu* statij i malko knigi
              many-the his articles and few books
              'his [many articles and few books]'

      c. tezi *mu* i onezi knigi
              these his and those books
              '[these and those] books of him'

      d. *statij-**te** *mu* i knigi   statij-**te** *mu* i knigi-**te** *mu*
              article-the his and books
              'his [articles and books]'

(14) Possessor clitics are excluded if there are two possessors in the DP:
    a. moi-**te** i tvoi xubavi knigi
       my-the and your nice books
       'my and your nice books'
    b. moi-**te** stari i tvoi-**te** novi idei
       my-the old and your-the new ideas
       'my old and your new ideas'
  A possessor clitic that is attached to the article must have scope over the full DP.

Second attempt: syntactic movement
(i)   The article is to the left in a DP.
(ii)   Since the article is a bound element, something must be moved in front of him into SpecD, unless it is preceded by a demonstrative.
(iii)   Minimal chain: The element that is nearest to the article is moved.

(15)
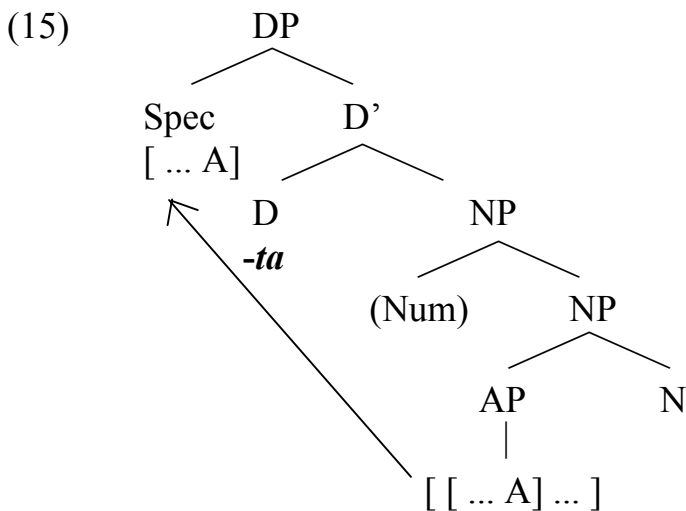
Problems:
(i)   Out of a AP, the first adjective and everything preceding it must be moved, whereas everything that follows must stay behind.
(ii)   Why must the possessor be moved to the definite element? What is the base position of the possessor?

The morphological status of the article: (see also Ortmann 2000)
(i)   The Bulgarian article is a suffix, not a clitic.
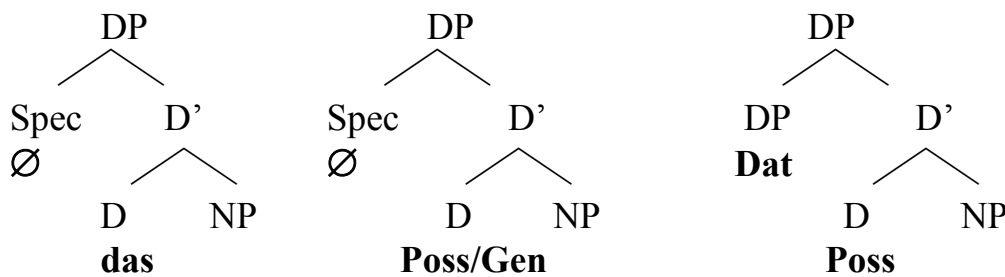(ii)   Being suffixal, it can only attach to nominal categories.

(16) Allomorphs of the article:

masc	fem	neuter	plural
-ta, -to, -jat (-ja), -ût (-a)	-ta	-to	-ta, -te

(17) The choice of the article allomorph depends on lexical conditions (phonological, or morphological: gender, number, and case)
   a. The article is -*ta* after a stem ending in -*a*:
   sestra-ta 'the sister'(sg.f)   *sela-ta* 'the villages' (pl.n)
   sudija-ta 'the judge' (sg.m)   *xora-ta* 'the people' (only plural)
   b. The article is -*to* after a stem ending in -*o*, and also for all singular neuters:
   selo-to 'the village'(sg.n)   *svako-to* 'the uncle'(sg.m)
   dete-to 'the child' (sg.n)
   c. Otherwise the article is -*te* with plurals:
   snegove-te 'the snows' (pl.m)   *ženi-te* 'the women' (pl.f)
   xubavi-te 'the beautiful' (pl)
   d. Masculines ending in a consonant have either –*jat* or -*ût* in the nominative:
   kon-jat 'the horse' (sg.m.NOM)   *vek-ût* 'the century' (sg.m.NOM)
   but –*ja* or –*a* in all other cases.

(18) a. Vidja-x kon-**ja**   b. Kon-**jat**   e   vidja-n
        see-1sg horse-the   horse-the AUX see-PART
        'I saw the horse'   'The horse is seen'

(19) In a noun with two concurrent plural forms the article adapts:
   a. kolene-te/kolena-ta   'the knees' (pl.n)
   b. ramene-te/ramena-ta   'the shoulders' (pl.n)
   c. dve-te/dva-ta   'the two' (pl)

(20) Some nouns do not allow the article, or have it optionally:
   a. žena *mu*   ?žena-ta *mu*   'his wife'
   b. majka *mi*   *majka-ta *mi*   'my mother'
   a. svako *ti*   svako-to *ti*   'your uncle'
   b. sin *ti* (colloq.)   sin-ût *ti*   'your son'

(21) However, the article again appears with a preceding adjective:
   a. krasiva-ta *mu* žena   'his beautiful wife'
   b. čarovna-ta *mi* majka   'my charming mother'

(16) The form of the article always depends on the word at which it is realized:
   a. sel**a-ta**   'the villages'   (a __)
   b. xubav**i-te** sela   'the beautiful villages'   (Plural)
   c. mnog**o-to** xubavi sela   'the many beautiful villages'   (o __)

The morphological status of the short form possessor in Bulgarian:
(i)   it is invariabel, hence independent of its environment in phonological or morphological terms.
(ii)   it is a dative pronoun, which also appears in the VP, together with other clitics.
(iii)   it is prosodically dependent – hence a clitic.

The possessor-article conspiracy

Universally, there is a tight association between pronominal possessor and definite article. As a default reading, a definite possessor makes the referent of the NP definite.
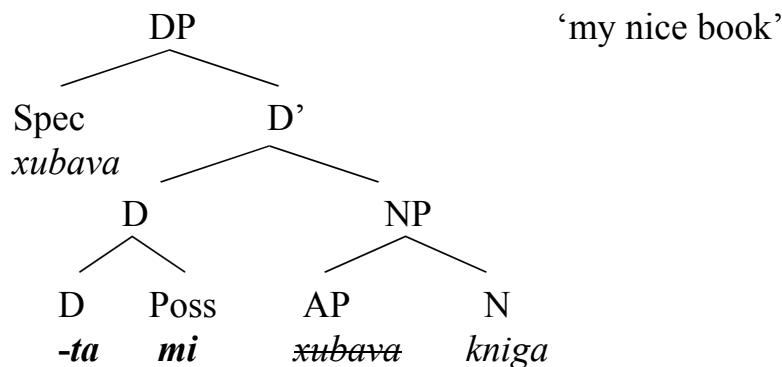
(22) a. my book on Chomsky
  b. one of my books on Chomsky

(23) In German, possessive pronoun and definite article exclude each other:
  a. das Schiff
  b. mein Schiff / *mein das Schiff / *das mein Schiff
  c. adjectival possessor and demonstrative are possible:
   das meinige Schiff / dieses mein Schiff
  d. Peters Schiff / Peter sein Schiff/ ihm sein Schiff

```
        DP                    DP                    DP
      /    \               /     \               /     \
   Spec     D'          Spec      D'           DP        D'
    Ø      /  \          Ø       /  \         Dat       /  \
          D    NP               D    NP                D    NP
         das                  Poss/Gen                Poss
```

(24) In English, Saxonian genitive and definite article exclude each other.

```
            DP
          /    \
       Spec      D'
   the king of England  /  \
                       D    NP
                      's   ship
```
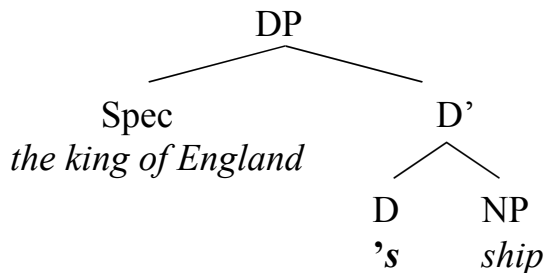
(25) By contrast, Bulgarian allows the short form possessor only to appear together with the definite article. Let us assume that D and Poss are not alternatively in D, but rather together in D.

```
        DP                      'my nice book'
      /    \
   Spec     D'
  xubava   /  \
          D     NP
        /  \    /  \
       D   Poss AP   N
      -ta  mi  xubava kniga
```

However, as already shown, the movement analysis is problematic.
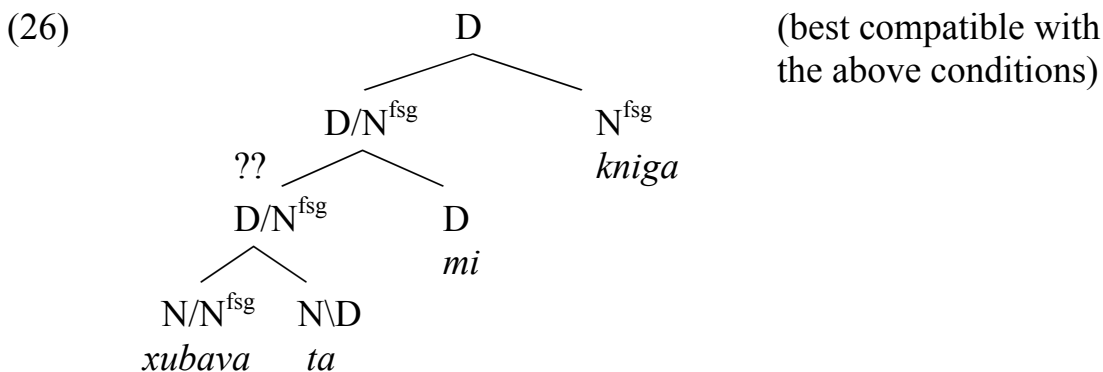
A lexical minimalist analysis (bottom up):

1) The default ordering of the nominal in a DP is Dem-Num-Adj-N.
2) Adverbials should precede their respective adjectival heads.
3) Demonstratives are inherently definite.
4) The definite article is a suffix that can be combined with each type of nominal.
5) The definite element is left-adjacent in a DP. (violable)
6) Each DP requires a noun. (*xubava-ta* 'the nice' does not qualify as a full DP.)
7) Every definite element can take a possessor (dative clitic) to its right. (Alternatively: every dative clitic in a DP must choose a definite element at its left – but see below.)

Purely categorial notation:

N for a noun and its projection.　　　　　(one-place predicate)
D for a determiner and its projection.　　(entity)

Lexical information:

➢ of the definite article: N\D ('take a nominal and project on D'); moreover, the allomorphs include (phono-morphological) information about the particular nominal they can combine with.
➢ of numerals (such as *mnogo* 'many'): N/N^{pl}
➢ of an (α-inflected) attributive adjective: N/N^{α}, where, e.g., α=fsg.
➢ of the pronominal dative clitics: D, clitic;
　e.g., *mi*: D, clitic, [1sg.DAT]

(26)　　　　　　　　　D　　　　　　　　　(best compatible with
　　　　　　　　┌──────┴──────┐　　　　　the above conditions)
　　　　　　D/N^{fsg}　　　　N^{fsg}
　　　　??┌────┴────┐　　　*kniga*
　　　D/N^{fsg}　　　D
　　┌───┴───┐　　　*mi*
　N/N^{fsg}　　N\D
　xubava　　*ta*

How can the possessor be integrated?

First account: the possessor is a functor on definite expressions,

(27)　　　　　　　　　D
　　　　　　　　┌──────┴──────┐
　　　　　　D/N^{fsg}　　　　N^{fsg}
　　　　┌────┴────┐　　　*kniga*
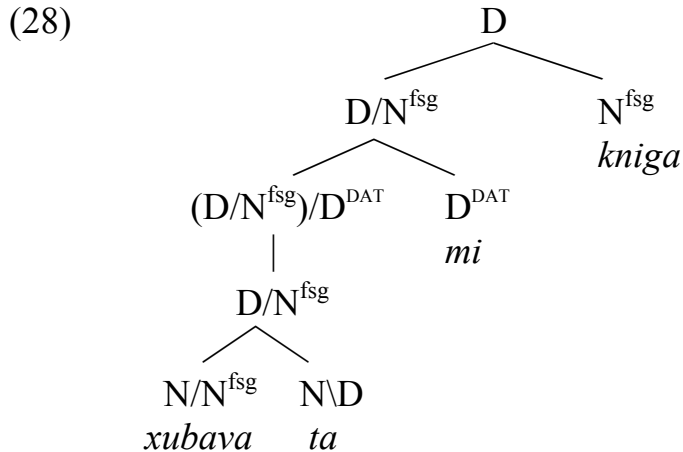　　　D/N^{fsg}　　　D\D
　　┌───┴───┐　　　*mi*
　N/N^{fsg}　　N\D
　xubava　　*ta*
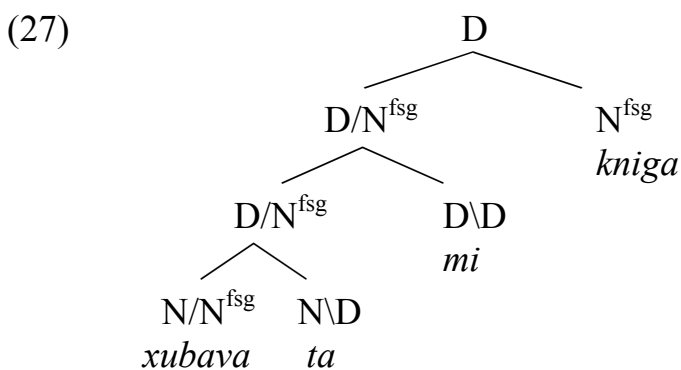
Problems:

- It is unclear how the possessor can refer to the possessed thing, if the latter is thought as being definite.

  mi: λz POSS($\mathbf{1sg}$,z)   (questionable)
         +def

- The possessor can also express relations different from POSS.
- A pronoun should be of the entity type D.

Second account: Every definite expression can be extended for a dative possessor.

(28)

Corresponding to the morpho-syntactic projection, the meaning of the complex DP is composed bottom up.

(29)   a. lexical entry of adjectives:

      $xubav$ λx {NICE(x)}

  b. the attributive adjective agrees with the nominal head:

      $xubava$ λN λx^{fsg} {NICE(x) & N(x)}

  c. the definite suffix is applied:

      $xubava$-ta λN δx^{fsg} {NICE(x) & N(x)}

  d. the definite expression undergoes POSS-extension :

      $xubava$-ta λy λN δx^{fsg} {NICE(x) & N(x) & POSS(y,x)}
                D,DAT

  e. the definite expression takes a dative possessor:

      $xubava$-ta mi λN δx^{fsg} {NICE(x) & N(x) & POSS(1sg,x)}

  f. finally, the head noun is integrated:

      $xubava$-ta mi $kniga$ δx^{fsg} {NICE(x) & BOOK(x) & POSS(1sg,x)}
      'that fsg object which is nice, a book and belongs to me'

In a psycholinguistic perspective:
The utterance of *xubava-ta* builds up the expectation of a fsg noun to follow. This expectation is still present when a possessor such as *mi* has been added.

It might be unexpected that the morpho-syntactic structure in (24) is left-branching, rather than right-branching. However, note that the only difference to (21) is that *xubava* is not in SpecDP but rather the direct neighbor of D.

Extending this analysis

(30) Adverbs are of type (N/N)/(N/N), so they combine with adjectives.

$$N/N^{fsg}$$ 'very nice'

(N/N)/(N/N) N/N^{fsg}
mnogo   *xubava*
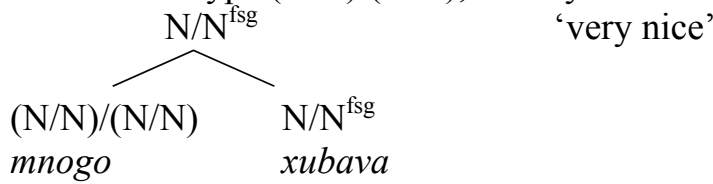
(31) Demonstratives are of type D/N, and thus already definite elements. They can be extended in order to take possessors.

D   'this my book'

D/N   N
      kniga

(D/N)/D^{DAT} D^{DAT}
| *mi*

D/N
tazi
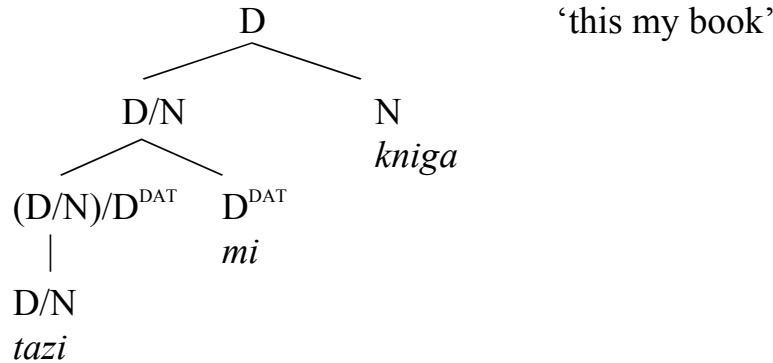
Problem case: coordination

Definite nominals can be coordinated. Let **X** be the first member of a coordination, i.e. **X** must be followed by 'coordination + X', thereby projecting on X.

(32)   X   X

       X   X\X   X/(X\X)   X\X

          &: (X\X)/X   X   It follows that **X** = X\X.
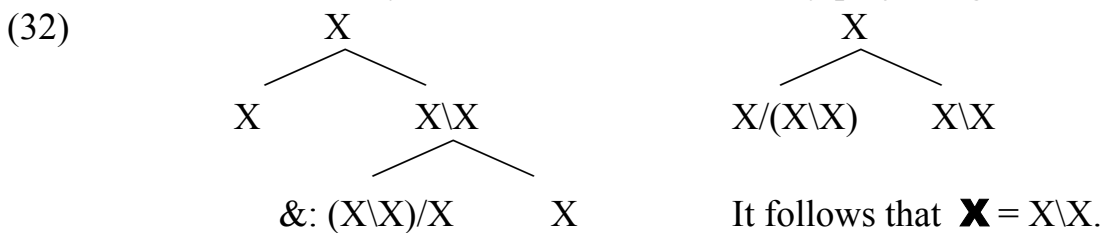
- Every N *in the context of* _ /N can be instantiated by N/**N** (N-coordination)
- Every N/N can be instantiated by (N/N)/(**N/N**)   (A-coordination)

Recall that (13d) is ungrammatical: Only nominals that are subcategorized for a noun can be extended for coordination, nouns themselves cannot.

(13d)   *statij-**te mu** i knigi
          'his articles and books'

(33)   a. ***mnogo-to mu** statij i malko knigi*   b. ***nova-ta mu** i interesna kniga*
       'his [many articles and few books]'   'his [new and interesting] book'

         (D/**N**)/N   (D/N)/(**N/N**)

    (D/**N**)/N   *mu*   (D/N)/(**N/N**)   *mu*

(N/**N**)/N   N\D   (N/N)/(**N/N**)   N\D
N/N   *to*   N/N   *ta*
mnogo   *nova*
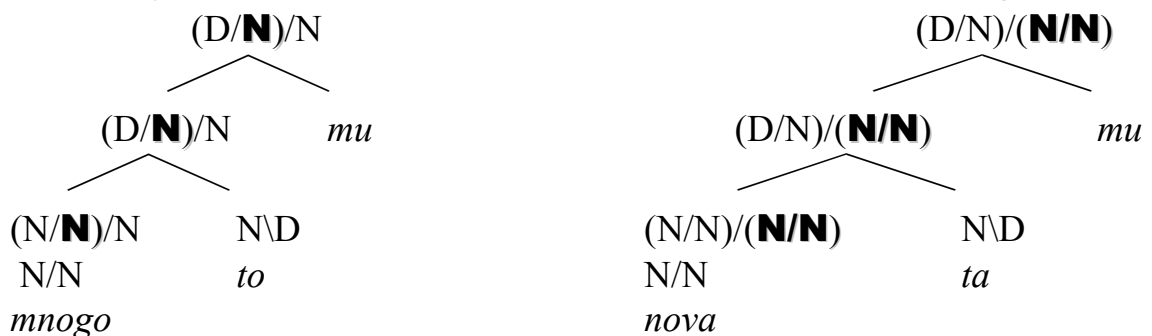
- These analyses account for the scope of the possessor.

- Only one possessor clitic can appear in a coordination.

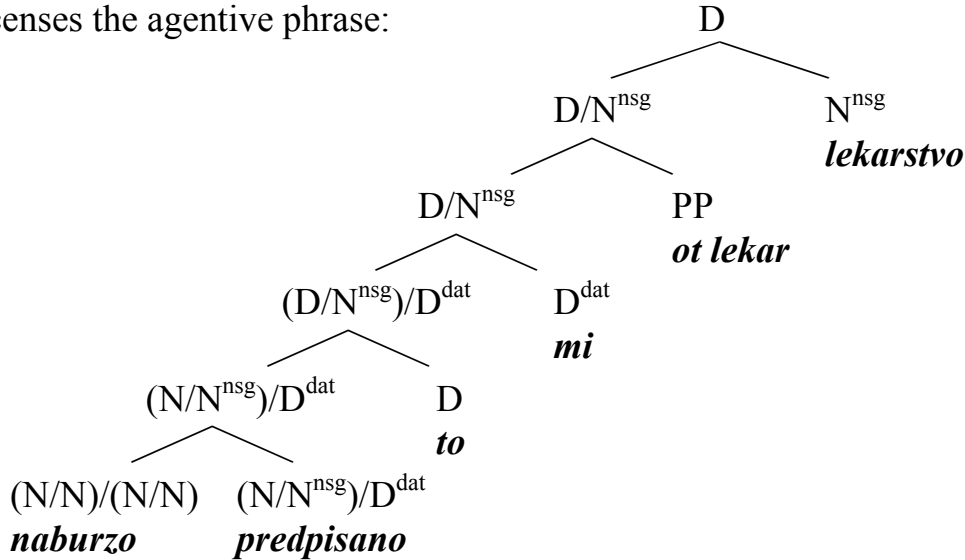(34) Participles formed from ditransitive verbs (requiring a dative complement) allow for two interpretations.

*naburzo predpisano-**to mi**   ot lekar   lekarstvo*
hastily   prescribed-the 1sg.DAT   by doctor medicine
(i) 'my medicine hastily prescribed by a doctor'
(ii) 'the medicine hastily prescribed to me by a doctor'
Interpretation (i) follows straightforwardly from possessor extension.

(35) Interpretation (ii): The underlying verb requires a dative complement and licenses the agentive phrase:

$$
\begin{array}{c}
D \\
\diagup\;\diagdown \\
D/N^{nsg}\qquad N^{nsg} \\
\textit{lekarstvo} \\
D/N^{nsg}\qquad PP \\
\textit{ot lekar} \\
(D/N^{nsg})/D^{dat}\qquad D^{dat} \\
\textit{mi} \\
(N/N^{nsg})/D^{dat}\qquad D \\
\textit{to} \\
(N/N)/(N/N)\qquad (N/N^{nsg})/D^{dat} \\
\textit{naburzo}\qquad\textit{predpisano}
\end{array}
$$

Comments:

- The attributive passive participle is derived from the verb *predpisati* 'prescribe', with the highest argument being existentially bound; it is inflected for nsg on the lowest argument, which therefore takes the highest position in the passive theta-grid; the requirement for a dative complement still survives.

  (36) a. *predpisati*: λz λy λx PRESCRIBE(x,y,z)
              acc   dat
              (case annotation by default)
      b. *predpisano*: λy λz^{nsg} $\exists x$ PRESCRIBE(x,y,z)
              dat

- The PP *ot lekar* must be realized after the head; it is integrated by an operation not to be discussed here; as an adjunct it does not alter the categorial status.

The just discussed construction is similar to German attributive participles:

(37) *die mir   eilig von einem Arzt   verschriebene Medizin*
      the 1sg.DAT hastily by a doctor   prescribed   medicine
      'the medicine hastily prescribed to me by a doctor'

Differing from Bulgarian, the inflected participial head must be final in its phrase, and some other ordering requirements apply, similar to those in German VPs.

One might say that a deverbal adjective that inherits verbal properties morpho-syntactically belongs to a mixed category. Every item of the mixed category $A^{[V]}$ behaves phrase-internally like V, but phrase-externally like A.

(38)

```
                       D
                  ┌────┴────┐
                  D         N
                 die   ┌─────┴─────┐
                      N/N          N
                   ┌───┴───┐    Medizin       mixed
                 D^dat  D^dat\(N/N)            category:
                 mir     ┌───┴───┐              ← (N/N)^[V]
                       Adv   D^dat\(N/N)
                      eilig   ┌───┴───┐         ← (N/N)^[V]
                            PP   D^dat\(N/N)
                      von einem Arzt  verschriebene   ← (N/N)^[V]
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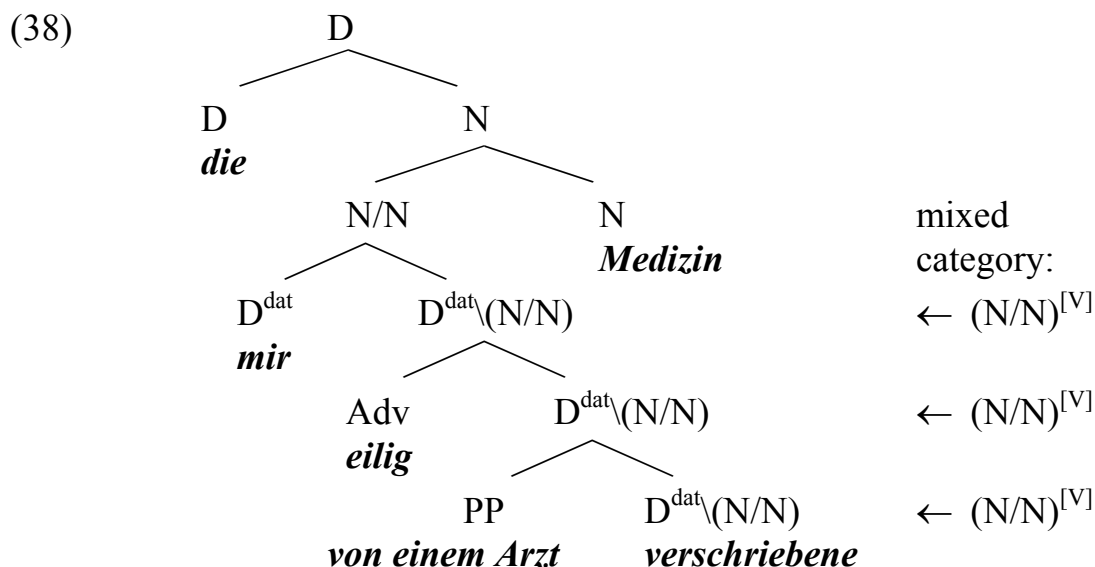
The concept of mixed category is even more significant in cases where the participle has an accusative complement, which is excluded for adjectives:

(39) *die mich   überraschen-d-e   Lösung*
      the me.ACC surprise-PTCP-INFL   solution

```
                    D
              ┌─────┴─────┐
              D           N
             die     ┌────┴────┐
                    N/N        N
                 ┌───┴───┐   Lösung
               D^acc  D^acc\(N/N)              ← (N/N)^[V]
               mich      │
                    überraschende
```
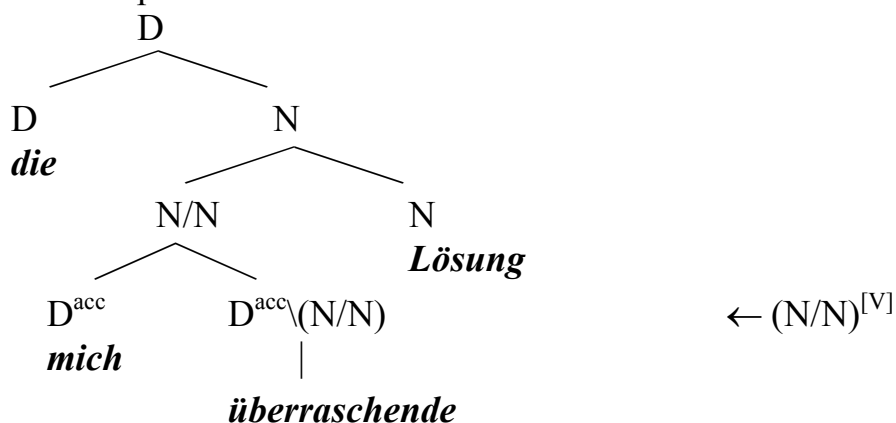
Bulgarian is similar:

(40) iznenadva-što-to me   rešenie
      surprise-PTCP-the me.ACC solution
      'the solution that surprises me'

Discussion

Two instances of mismatches have been identified:

- Bulgarian attributive adjectives and numerals take D-suffixes which have scope over the whole NP. Furthermore, the definite element in the Bulgarian DP attracts the possessor clitic, which also has scope over the whole NP.
- Attributive participles mark their complements in a verb-like way.

These constructions can best be understood in a categorical analysis with functional composition, which, by itself, is quite a powerful device. Therefore, further constraints (like those suggested on top of page 7 above) are needed in order to restrict functional composition.

1. *Scope preservation*

Elements that have scope over the whole NP can be associated with any nominal element of the NP provided that <u>this</u> element already selects 'the rest of the NP'.

- Attributive adjectives (as well as non-intersecting adjectives and numerals) agree with the head noun. They are 'looking ahead' morphologically.
- Every nominal element unlike the head itself can be the first member of a coordination, and is thus 'looking ahead' syntactically.

Elements that are 'looking ahead' can take the definite article and the possessor clitic.

2. *Mixed categories*

A complement that is inherited by functional composition can be realized in different ways.

(41) *die Entdeckung <u>des Nordpols</u>*   *die <u>den Nordpol</u> entdeckenden Leute*
                    GEN   ACC
       'the discovery of the North Pole'   'the ones who discovered the North Pole'

- In nominalizations of verbs, the complements are marked by genitive, according to the linking device of nouns.
- In present participle of verbs, the complements are marked by accusative, according to the linking device of verbs.

Functional composition itself is insensitive to morphological features. Therefore, in addition, one needs the distinction between simple and mixed categories.

- The simple category X   projects on XP by means of X-like devices.
- The mixed category $X^{[Y]}$ projects on XP by means of Y-like devices.