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ON DIFFERENT ANALYSES FOR ADDITIVE AND PREPOSITIONAL NUMERAL-NOUN CONSTRUCTIONS

0. Aims

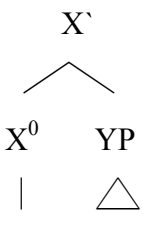
In this paper I discuss the syntax of numeral-noun constructions that include additive and prepositional cardinal numerals. With regards to constructions with prepositional numerals, I attempt to argue that the numeral may best be viewed as a constituent that excludes the noun. As for additive numeral-noun constructions, I argue that they might exhibit different syntactic structures across languages. They may suggest either an analysis in which they are constituents (phrases), or may better match the analysis presented in Ionin and Matushansky (2004a,b; 2006).

1. Background

1.1 Three structures for Numeral-Noun Constructions

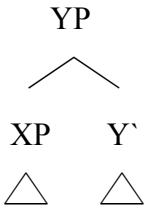
Danon (2011) mentions the debate in the literature about whether cardinal numerals should be treated as heads or phrases. That is, they may be either heads that select a projection of the noun (1) or specifiers of a functional projection of the noun (2). The author then argues that languages make both structures available:

(1) Head-complement relation:



cardinal numeral noun

(2) Specifier-head relation:



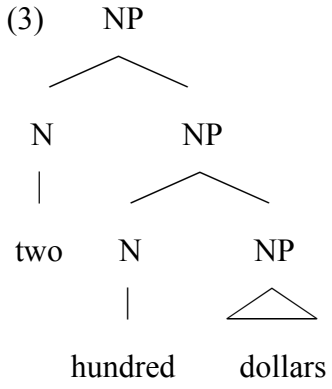
In his 2011 paper, Danon presents arguments to support the idea that both structures are available in UG. One language that exhibits both types of numeral-noun constructions shown in (1) and (2) is argued to be Modern Hebrew (see Danon 2011 for further details).

Ionin and Matushansky (2004a,b cited in Zweig 2005; 2006) present what might be a third type of analysis for (complex) numeral-noun constructions with cardinal numerals. They argue against treating complex numerals as heads because of the possibility of constructing arbitrarily complex cardinal numerals, like *a million three hundred and five thousand*. This numeral would be difficult to be considered a frozen lexical head (Zweig 2005). As for treating cardinal numerals as phrases in the specifier position of a QP/NumP, the argument against this analysis comes from languages like Russian, where the case of the noun depends on the numeral and only heads could assign case.

Thus, Ionin and Matushansky treat numerals as neither heads nor phrases (2004a,b cited in Zweig 2005). Given their arguments above, they consider that neither analysis can cover numerals.

In their own analysis, complex numerals are not constituents, but are built incrementally (2004a,b cited in Zweig 2005). To exemplify, sequences representing complex numerals such *two hundred dollars* are built as in (3), with the bracketing [two[hundred[dollars]]]:

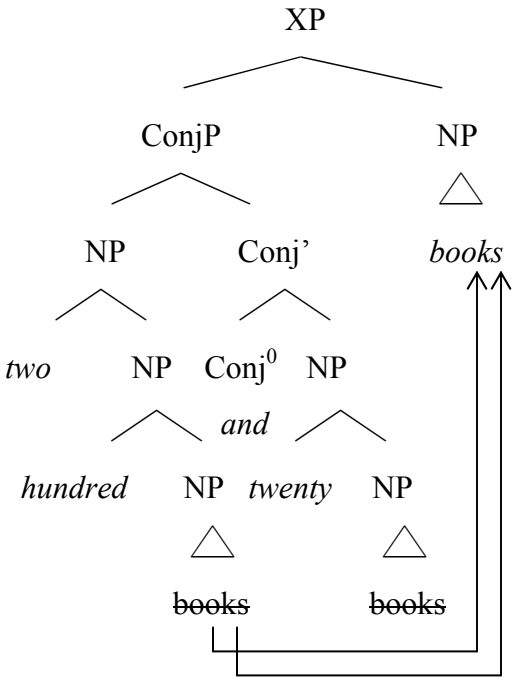
(3)



(from Zweig 2005)

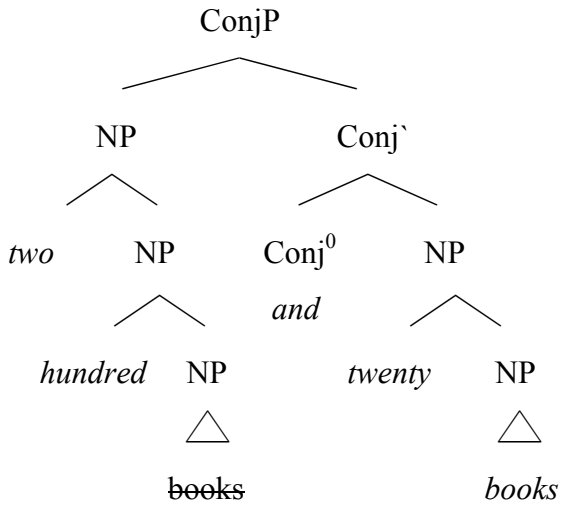
In Ionin and Matushansky (2006) it is shown how a numeral-noun construction with a cardinal numeral that contains both addition and multiplication would be formed. Addition surfaces in syntax as coordination, either asyndetic or with the coordinating element present. Each coordinated cardinal must contain an instance of the NP. Thus, *two hundred and twenty books* is *two hundred* ***books*** *and twenty* ***books***. The fact that we do not pronounce the NP in the first conjunct is explained either through right-node raising (shown in (4)) or NP deletion at PF ((5)).

(4)



(after Ionin and Matushansky 2006: 340)

(5)



(after Ionin and Matushansky 2006: 341)

This analysis finds strong support in languages like Luvale, where several instances of the NP are, in fact, uttered:

(6) mikoko makumi atanu na-mikoko vatanu
sheep ten five and-sheep five
'fifty-five sheep'

(Luvale example from Zweig 2005)

Example (6) above suggests that Luvale uses neither right-node raising nor PF deletion, which are the strategies described by Ionin and Matushansky and exemplified above in (4) and (5). The numeral-noun construction is uttered as in its underlying form. While example (6) provides evidence in favor of Ionin and Matushansky's underlying form, it shows a language that does not employ any of the derivation strategies the authors suggest languages choose from.

According to Danon (2011), Ionin and Matushansky's analysis in which multiplicative numerals are formed recursively, with a bracketing like [three[thousand[books]]], makes the wrong predictions for Hebrew (see Danon 2011 for further discussion). He argues that the Hebrew data provide evidence in favor of the alternative way of bracketing *three thousand books*, that is [[three thousand] [books]].

This bracketing implies that the numeral forms a constituent to the exclusion of the noun, which point to analyzing complex numerals as phrases.

1.2 Prepositional numerals

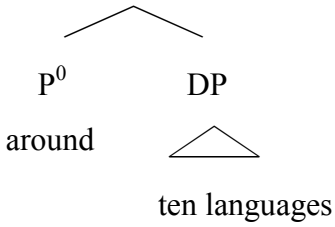
Corver and Zwarts (2006) analyze the syntactic structure of numeral-noun constructions containing prepositional numerals, such as those in (7) and (8):

(7) around twenty languages

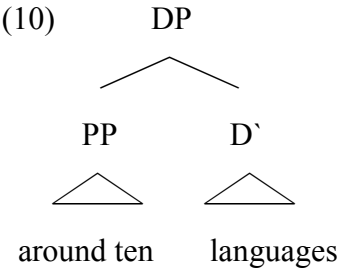
(8) between ten and twenty languages

The authors discuss four possible analyses for the sequences like (7), of which two[1] immediately come to mind:

(9)



(10)



In (9) the preposition *around* is a head that combines with the entire DP *ten languages*, which contains the numeral *ten*. In (10), the preposition combines with the numeral, to form a PP that occupies the specifier position of the DP. Choosing between

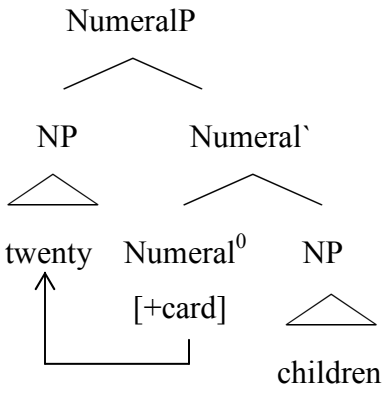
[1] The reader is referred to Corver and Zwarts (2005) for discussion of the other two possible analyses.

(9) and (10) basically means providing an answer to the question of whether the preposition (affects and) combines only with the numeral or the entire DP.

Corver and Zwarts provide syntactic arguments that the structure in (9) is not the correct one. Constructions with prepositional numerals appear to have the same distribution as DPs, which they illustrate using examples from Dutch, so *around ten languages* must be a DP. This points to the structure in (10). The preposition and the numeral, therefore, form a constituent that excludes the noun. One semantic argument the authors give is that prepositional numerals have the same global semantic structure as spatial PPs.

The authors suggest, thus, that prepositional numerals are PPs, and that they have roughly the same distribution as bare numerals. The structure in (10) is similar to that in (2), in which numerals are phrases which occupy the specifier position of a functional projection of the noun. Corver and Zwarts suggest that the head of this functional projection is responsible for the property of cardinality of the numeral, no matter what kind of phrase it is. According to them, cardinality is not an inherent semantic property of numerals, but it is the numeral head that assigns it to the phrase in its specifier position, as in (11):

(11)



The functional head Numeral^0 would, therefore, be responsible for turning the *numeral* into a *number*. The phrase in its specifier position is assigned the property of denoting the *number* of elements referred to.

2. Analysis

In this paper I elaborate on the syntax of numeral-noun constructions with prepositional and additive numerals. This will be done drawing on data from several languages, among which Romanian and Macedonian.

2.1 Prepositional numerals again

2.1.1 Another argument for 'prepositional numerals as constituents'

Ionin and Matushansky (2006) would argue for the bracketing in (12), while Corver and Zwarts (2006) provide support for the structure in (13):

(12) a. [more than [ten books]]
b. [around [ten books]]
(13) a. [[more than ten] books]
b. [[around ten] books]

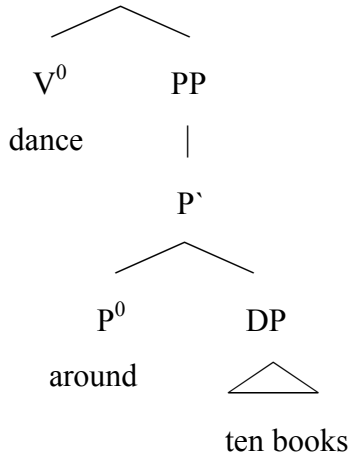
In fact, the strings *more than ten books* and *around ten books* are ambiguous. Both bracketings are possible, but they have different interpretations. Consider the examples in (14) and (15):

(14) a. I bought more than ten books. I bought twelve pencils as well.
b. I bought more than ten books. In fact, I bought twenty.
(15) a. I danced around ten books that were placed on the floor.
b. I bought around ten books. To be precise, I bought eleven.

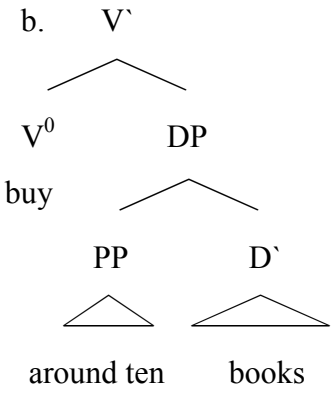
In (14a) the bracketing is that in (12a). The interpretation is that what was bought is *more than* (the set of) *ten books* (possibly a set of pencils as well). (13a) corresponds to example (14b) and the interpretation is that the *number of books* is *larger than ten*. Therefore, in the latter case, *more than* affects only the numeral, not the entire DP.

In sentence (15a), which has the bracketing in (12b), the preposition retains its spatial meaning and takes the DP as a complement (i.e. the structure in (9), shown in (16a)), while in (15b) the preposition affects only the cardinal (i.e. the structure in (10), bracketing in (13b), shown below in (16b)). The interpretation of (15b) is that *the number of books* bought must be *in the vicinity of ten*.

(16) a.



b.



This difference in interpretation between the two ways of bracketing the sequence appears to provide extra evidence that prepositional numerals are indeed PPs and that they form a constituent to the exclusion of the noun. Otherwise, the string would have a different interpretation.

In Romanian the difference is easier to grasp, since different means are available to convey the two meanings of *around ten books*:

(17) a. Am cumpărat în jur de zece cărţi. Am cumpărat nouă.
have.1SG bought in vicinity de-PREP ten books. have.1SG bought nine.
I bought around ten books. I bought nine.

b. ?Am cumpărat în jurul a zece cărţi. Am cumpărat nouă.
have.1SG bought in vicinity-DEF of ten books. have.1SG bought nine.
I bought around ten books. I bought nine.

c. Am dansat în jurul a zece cărţi care erau pe podea.
have.1SG danced in vicinity-DEF of ten books which be.IMPF.3PL on floor.
I danced around ten books which were on the floor.

d. *Am dansat în jur de zece cărţi care erau pe podea.
have.1SG danced in vicinity de-PREP ten books which be.IMPF.3PL on floor
I danced around ten books that were on the floor.

(Romanian)

The construction in (17d), which employs the functional preposition *de* ('of'), can only be used when the interpretation is that of the bracketing in (13b), which corresponds to the English example (15b). Using *în jur de* with a spatial meaning ((17d)) yields an ungrammatical sentence. (17a) and (17b) show that *în jurul a* could be used to convey both interpretations, though there appears to be a preference for separating them[2].

A similar phenomenon can be observed in Russian, Bahasa Indonesia and Javanese:

(18) a. Ja kupila okolo desjati knig.
I buy.PERF.FEM.SG near ten.GEN.PL. book.GEN.PL
I bought around ten books.

b. Ja tantsevala vokrug desjati knig.
I dance.PERF.FEM.SG around ten.GEN.PL. book.GEN.PL
I danced around ten books.

(Russian examples cf. Alina Ivan, p.c.)

[2] It would seem that some native speakers do not accept *în jurul a zece cărţi* with the meaning that the number of books is in the vicinity of ten ([[around ten] books]).

(19) a. Saya beli sekitar sepuluh buku. Saya beli sembilan.
I bought around ten book. I bought nine.
'I bought around ten books'
b. Saya menari melingkari sepuluh buku yang diletakkan di lantai.
I danced circling ten book which place.PASS on floor.
'I danced around ten books that were placed on the floor'
(Bahasa Indonesia)

(20) a. Aku tuku sepuluh-an buku. Aku tuku songo.
I bought ten-around book. I bought nine.
'I bought around ten books. I bought nine.'
b. Aku nari muteri sepuluh buku sing didekek ndik jubin.
I danced circling ten book which place.PASS on floor.
'I danced around ten books that were placed on the floor'
(Javanese)
(examples cf. Herafi Zaskia, personal communication)

The sentences in (18) show that the bracketings in (12b) and (13b), in English both expressed by *around ten books*, use different prepositions in Russian. (18a), corresponding to the structure in (13b), uses the preposition *okolo*, which has the spatial meaning of 'near'. The sentence in (18b), corresponding to (12b), uses the preposition *vokrug* (composed of *v* 'in' and *krug* 'circle'), with a spatial meaning. (18b) contains a preposition which retains the spatial meaning and takes the DP *desjati knig* as its complement (the structure in (9)).

The examples in (19) and (20) suggest that the same difference in interpretation is rendered more saliently in Bahasa Indonesia and Javanese. In (19a), where only the numeral is being approximated, *sekitar* 'around' is used, while in (20a), a simple suffix attached to the numeral can convey the meaning of approximation. If the ten books are being danced around, another word is used to render the needed idea of circling ((19b), (20b)), as the word 'circle' is part of the preposition in the Russian example in (18b).

Thus, the examples in (17) – (20) suggest that there are two interpretations for the string ‘around ten books’. The same string is used in English to convey two meanings, while other languages choose to disambiguate between the interpretations in a more salient way. In English, I have argued that a distinction is made in the syntax, through different structures ((16a) versus (16b)).

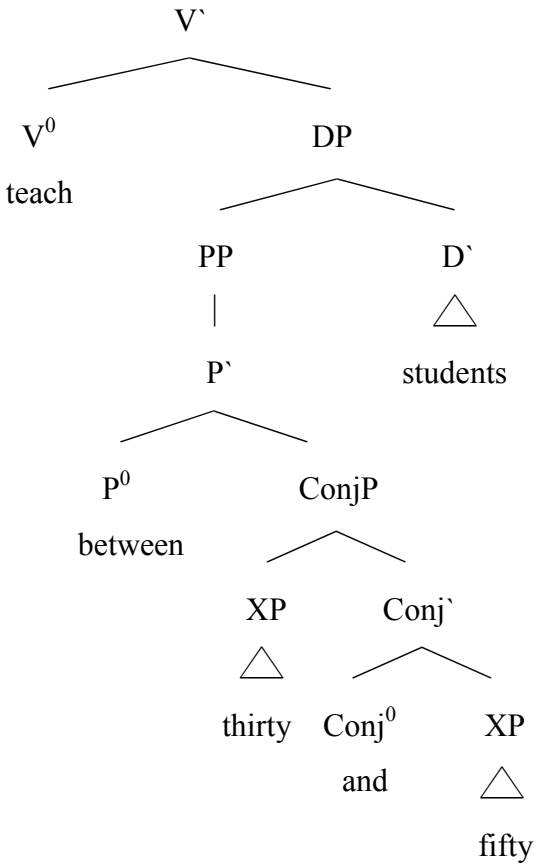
The next case I discuss in this section is one in which I suggest that the same ambiguity arises in English in a sentence with two numerals linked by a preposition and the syntactic structure is again different for the two possible interpretations of the string. Consider the sentences in (21) below:

(21) a. She teaches between thirty and fifty students every day at her job.
b. She is sitting between three and five children.
c. She is sitting between three children and five adults.
d. *She teaches between thirty children and fifty adults every day at her job.

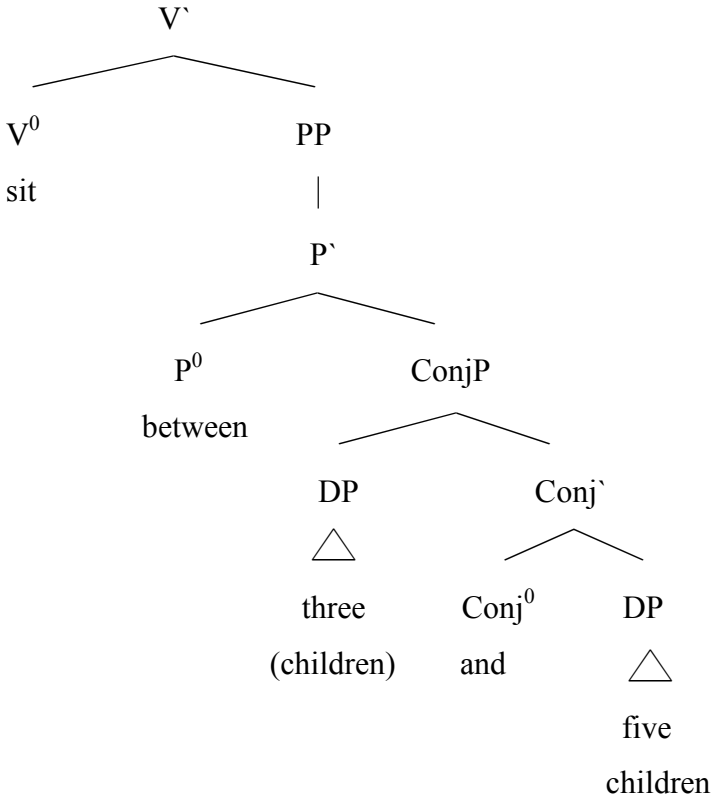
Sentence (21a) is likely to be interpreted as being about a teacher who holds lessons every day in front of a number of students that is between thirty and fifty (for example forty). Sentence (21b) brings to mind the image of a woman that has three children on one side and five children on the other. Theoretically, (21a) could also be interpreted like (21b), but it is unlikely to find a situation in which someone teaches while being flanked by groups of exactly thirty and fifty students at all times every day.

The different interpretations of (21a) and (21b) suggest different syntactic structures, which are illustrated below in (22a) for (21a) and (22b) for (21b). These structures correspond to the bracketings [[between [thirty and fifty]] students] (21a) and [between [three (children)] and [five children]] (21b). The idea that (21b) contains two DPs, one of which is not uttered, finds support in the grammaticality of (21c), in which the DPs are uttered if they differ. However, (21d) is ungrammatical except in the case in which the teacher is flanked by two groups, one of children and the other of adults.

(22) a.


V`
V0
teach
DP
PP
D`
P`
students
P0
between
ConjP
XP
Conj`
thirty
Conj0
and
XP
fifty

b.


V`
V0
sit
PP
P`
P0
between
ConjP
DP
Conj`
three
(children)
Conj0
and
DP
five
children

The two possible interpretations of the string *between three and five children* are similar to those of *around ten books*. In (22a) the verb takes a DP as its complement and the numeral, a PP, is in the specifier position of a functional projection of the noun and excludes it. The preposition *between* contributes only to the formation of a prepositional numeral, a constituent, and the structure yielded is, overall, the same as that in (10) and (16b). (22b) shows a verb with a PP complement, which, in turn, has a ConjP linking two DPs as a complement. The preposition affects the DPs, not just the numerals, just like *around* refers to the ten books danced around.

The existence of the difference in interpretation suggests that prepositional numerals are constituents (PPs) that exclude the noun, since the other structure (9) is a possible one, but would be understood in a different way.

2.1.2 Numerals between 11 and 19 as prepositional numerals

In Romanian, Macedonian and Russian, numerals between 11 and 19 appear to have a preposition in their internal composition, linking two other numerals. This prepositon is *spre* 'towards' in Romanian, *na* 'on' in the case of Macedonian, and *nad* 'above' in Russian:

(23) a. treisprezece
three-towards-ten
'thirteen'

b. doisprezece (băieţi) / douăsprezece (fete)
two.MASC-towards-ten (boys) / two.FEM-towards-ten (girls)
'twelve boys/girls'

(Romanian)

(24) a. trinaeset
three-on-ten
'thirteen'

b. dvanaeset
two.MASC-on-ten
'twelve'

(Macedonian examples cf. Kramer 2003: 124)

(25) a. trinadtsat`
three-above-ten
'thirteen'

b. dvenadtsat`
two.NEUT-above-ten
'twelve'

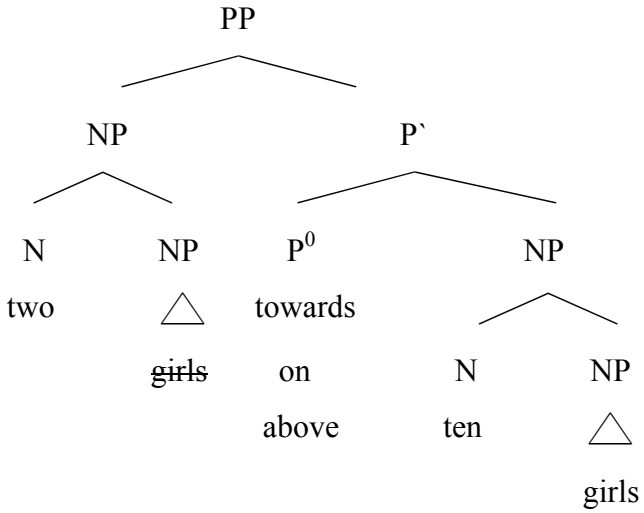
c. odinnadtsat`
one.MASC-above-ten
'eleven'

(Russian examples cf. Vascenco and Pedestraşu 1985: 123)

The examples in (23) – (25) suggest that, in these languages, the exemplified numerals, *eleven*, *twelve* and *thirteen*, are composed of two numerals. The second of these numerals is invariably *ten*, and it is linked by a preposition to the other numeral. The semantics of the prepositions would suggest that at least in the Slavic languages, if not in Romanian as well, we are dealing with a sort of addition.

(23b) shows that in Romanian there is gender agreement between the noun and the first numeral in the construction. This agreement phenomenon and the lack of the functional preposition *de* (which does appear in constructions with numerals higher than *nineteen*) in these constructions would suggest an analysis in the spirit of Ionin and Matushansky (2006) with *twelve girls* being analyzed as *two ~~girls~~ towards ten girls*. This would work for the Slavic numerals as well, with the meaning of the preposition making the idea even clearer. In Macedonian and Russian it would be *two ~~girls~~ on/above ten girls*. This analysis is sketched below in (26):

(26)



One counterargument to the structure in (26) is the invariability of numerals between *eleven* and *nineteen* in Macedonian and Russian (cf. Kramer 2003: 39, Vascenco and Pedestraşu 1985: 123). There is no gender agreement where we would expect it in these languages. For example, even though in Macedonian the numeral *two* exhibits gender agreement (*dva* for masculine nouns and *dve* for feminine and neuter nouns), the only form that enters the composite *twelve* is *dva*. Romanian is the only language of the three in which we do find the gender agreement, and only in 'two-towards-ten'. Romanian should exhibit this gender agreement in *eleven* as well, given that *one* varies according to the gender of the noun, but it does not:

(27) a. unsprezece băieţi/fete
one.MASC-towards-ten boys/girls
'eleven boys/girls'

b. *unasprezece / osprezece fete
one.FEM-towards-ten girls
'eleven girls'

Sometimes, however, native speakers of Romanian omit the gender agreement with the numeral *twelve* as well, using the masculine form instead of the feminine for *two*:

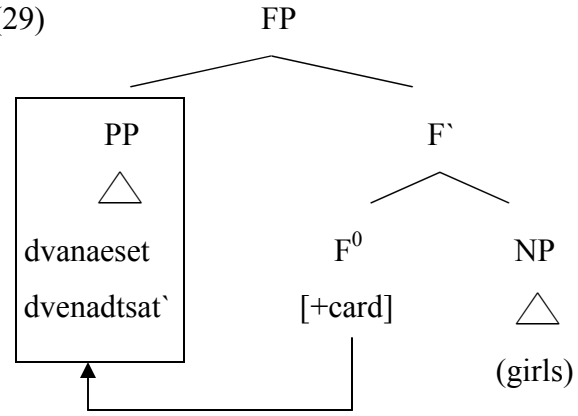
(28) doisprezece fete
two.MASC-towards-ten girls
'twelve girls'

(sub-standard Romanian)

Another counterargument for the structure in (26) is, for Romanian, the frequent use in colloquial speech of 'contracted' forms of these numerals, such as *treişpe* instead of *treisprezece*. The former is not as transparent with respect to the compositional nature of the numeral as the latter (the full form) is.

All the arguments above considered, it may be argued that an analysis in which the numerals are PP constituents (cf. Corver and Zwarts 2006) would be a better option:

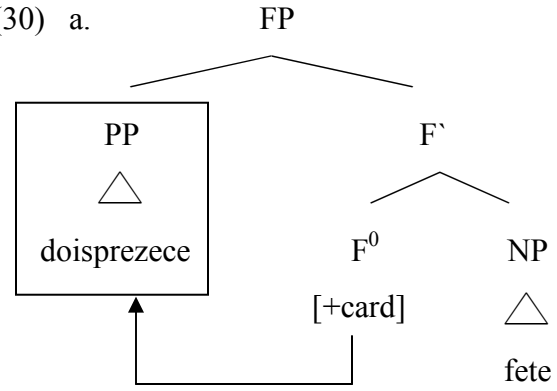
(29)



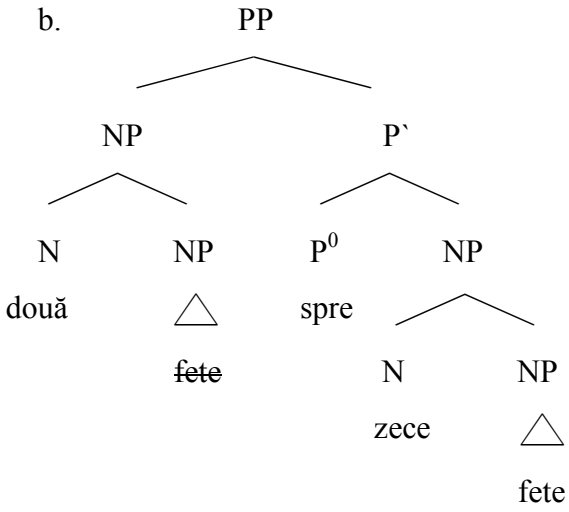
The structure in (29) could fit the Romanian data as well, especially considering the lack of gender agreement for *eleven*. It is, however, easier to argue for it by looking at the sets of completely invariant Slavic numerals.

The Romanian agreement phenomena involving the numeral *twelve* still appear to suggest (26) as a better analysis. Given these agreement phenomena and the much frowned-upon tendency of Romanian speakers to omit the gender agreement, an argument could be made for the existence of both structures in the grammar:

(30) a.



b.



The existence of both (30a) and (30b) in the grammar might make a possible explanation for the observation that there is gender agreement with the numeral *twelv*e in Romanian but native speakers sometimes have trouble observing it. It may be the case that they are hesitating between (30a) and (30b) and (30a) may actually win out, since *twelve* is the only numeral in the eleven-nineteen set that (according to prescriptive grammars) still has gender agreement for the first numeral in the compound.

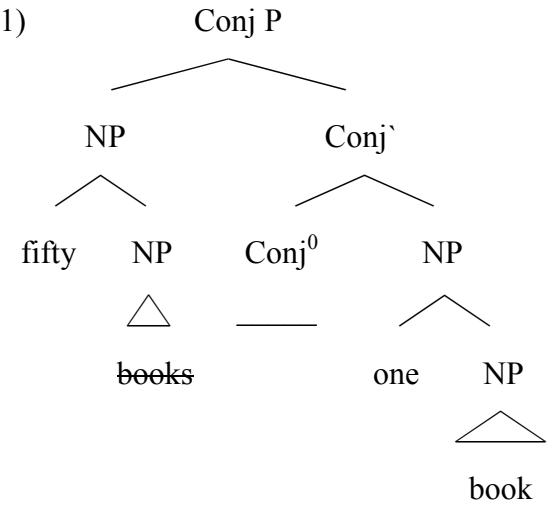
2.2 Back to additive numerals

2.2.1 Possible difficulties for the Ionin and Matushansky (2004, 2006) analysis

According to Ionin and Matushansky (2006), *fifty-two books* is actually *fifty ~~books~~ and two books* (see (4) and (5)). The additive interpretation is obtained through asyndetic

coordination, which means than there is no overt conjunction. In other cases the conjunction may be present, as in *two hundred **(and)** fifty books*. However, the paper contains numerals in which the second conjunct is above *one*, and the NP in both conjuncts would be in the plural form, *books*. If the numeral is *fifty-one books*, one would expect the noun to be in the singular form (*book*) according to this analysis:

(31)



However, **fifty-one book* is ungrammatical in English, which suggests that this analysis may not be on the right track. The same argument goes for Modern Greek as well:

(32) a. ikosi enas anðres / *anðras
twenty one.MASC men / man
'twenty-one men'
b. ikosi mia γinekes / *γineka
twenty one.fem women / woman
'twenty-one women'

Romanian data show the same phenomenon. Even with the numeral in the second conjunct being *one*, having the noun in the singular form is ungrammatical. With any numeral higher than *one*, the noun must be plural.

(32) a. douăzeci şi doi de băieţi
two.FEM-tens and two.MASC de-PREP boys
'twenty-two boys'

b. douăzeci şi două de fete
two.FEM-tens and two.FEM de-PREP girls
'twenty-two girls'

c. douăzeci şi una de fete/*fată
two.FEM-tens and one.FEM de-PREP girls/*girl
'twenty-one girls'

d. douăzeci şi unu de băieţi/*băiat
two.FEM-tens and one.MASC de-PREP boys/*boy
'twenty-one boys' (Romanian)

The examples in (32a-b), in which there is gender agreement between the second conjunct (i.e. the part after the overt conjunction *şi* 'and') and the noun, would appear to support Ionin and Matushansky's analysis, with (32a-b) being the same as (33a-b) below:

(33) a. douăzeci de băieţi şi doi băieţi
two-FEM tens de-PREP boys and two-MASC boys

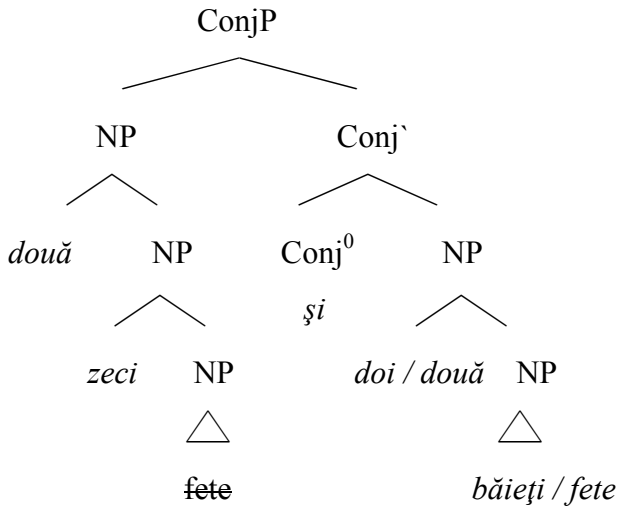
b. douăzeci de fete şi două fete
two-FEM tens de-PREP boys and two-FEM girls

However, the existence and place of the preposition *de*, both in (32) and (33), makes the Romanian construction different from the English one, which does not have such an element. We would expect, under Ionin and Matushansky's analysis, to have the Romanian numeral-noun constructions in (34), with the structure in (35):

(34) a. *douăzeci băieţi şi doi băieţi
two-FEM tens boys and two-MASC boys

b. *douăzeci fete şi două fete
two-FEM tens boys and two-FEM girls

(35)



Another argument against using this analysis for Romanian comes from the forms of the numeral in the second conjunct of examples (32a-b), *one*. While influenced by the gender of the noun, the numeral does not have the forms we would expect under Ionin and Matushansky's view:

(36) a. unu/una
one.MASC/one.FEM
'one'

b. *un/*o
one.MASC/one.FEM
'one'

c. o/*una fată
'one girl'

d. un/*unu băiat
'one boy'

(Romanian)

As may be seen from (36), the forms in (36a) of the cardinal *one* in Romanian, the counting forms, can stand alone, while the forms in (36b), which are identical to the

forms of the indefinite article, cannot[3]. However, when in a numeral-noun construction, the forms of *one* must be those in (36b), (36a) resulting in ungrammaticality (see 36c-d). In (32c-d), under Ionin and Matushansky's analysis, we would expect to find the numeral *one* in the forms in (36b), since if there is an instance of an NP in the second conjunct, the numeral would be forced to take the forms it has in the presence of a noun. This basically means that the second conjunct in (32c-d) would be the grammatical forms of (36c-d), given in (37a). Taking into account the idea that the preposition *de* would not be expected, and the singular of the second conjunct, 'twenty-one girls/boys' should look like in (37b-c).

(37) a. o fată / un băiat
one.FEM girl / one.MASC boy
'one girl/boy'
b. douăzeci şi o fată
two-tens and one.FEM girl
'twenty girls'
c. douăzeci şi un băiat
two-tens and one.MASC boy
'twenty boys'

The fact that Romanian has the forms in (32c-d) and not the ones in (37b-c) could be taken as evidence that we are not dealing with a structure in which there is an instance of the NP linked only with the numeral after the conjunction 'and'. Given the clearly compositional nature of the entire cardinal numeral, it may be argued that the numeral is actually a constituent that excludes the noun.

Another argument for the entire numeral as a constituent may come from the observation that native speakers of Romanian may omit the gender agreement between

[3] It may be that the distinction between unu/una and un/o in Romanian is similar to that between free and bound cardinals in Modern Hebrew (cf. Danon 2011).

the numeral in the second conjunct and the noun[4], as they omit it between the first numeral and the noun in *twelve*.

(38) treizeci şi unu de fete
three-tens and one-MASC de-PREP girls
'thirty-one girls'

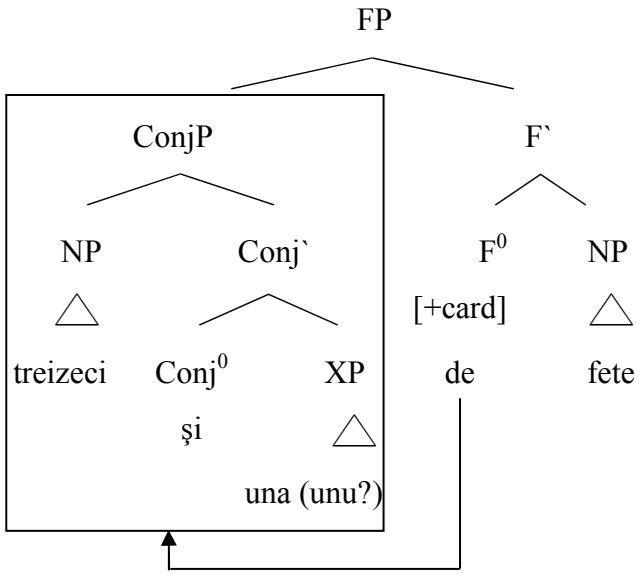
(sub-standard Romanian)

(39) treizeci şi două de lei[5]
three-tens and two.FEM de-PREP lei (masc)
'thirty-two lei'

(sub-standard Romanian, McDonalds clerk)

The most straight-forward argument against a Ionin and Matushansky analysis for Romanian additive numeral-noun constructions is still the occurrence and place of the preposition *de*. This preposition separates the noun from the cardinal, thus indicating a structure like that in (11), with *de* expressing the functional head. This is sketched in (40).

(40)

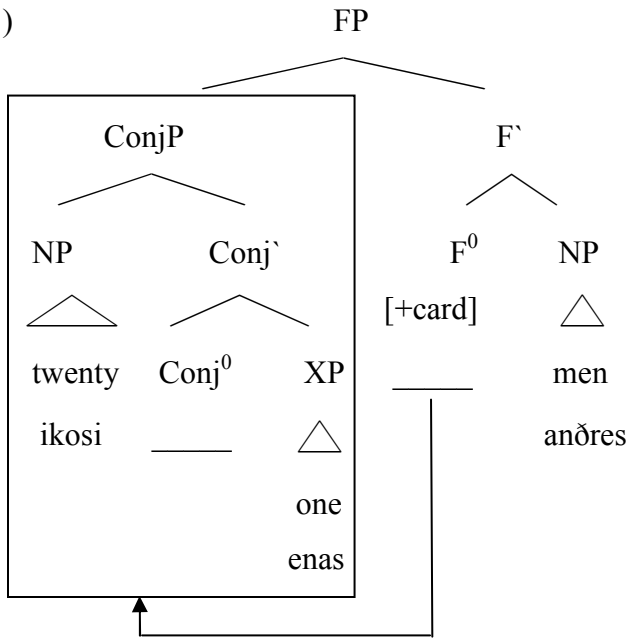


[4] Many native speakers report not having heard this phenomenon taking place. However, I have heard it in fluent conversation. While sub-standard, it does not sound foreign. Following prescriptive grammars, it should not occur. A test which would show how likely this is to happen would need to be done for more certainty.

[5] While having heard this example myself, at least to my ear it sounds more foreign than (38).

The structure in (40) could also work for English and Modern Greek, with the difference that the functional head would not be expressed (lack of a preposition) and the coordination would be asyndetic.

(41)



2.2.2 The Ionin and Matushansky analysis – a better option for some languages?

If the previous subsection aimed at providing evidence against the Ionin and Matushansky analysis, this subsection explores the idea that the aforementioned analysis may be a better choice for treating additive numeral-noun constructions in some languages. In particular, I will address numerals in Macedonian and Russian and will argue that at least in Macedonian and Russian numerals could be given the analysis of Ionin and Matushansky, for which the Luvale example in (6) provides compelling evidence.

I argued in the subsection 2.2.1 that one would expect, under the Ionin and Matushansky analysis, for the noun to be in the singular if the numeral in the second conjunct is *one*. Languages like Romanian, English and Greek do not exhibit this behavior, but Macedonian does, as the examples below show:

(42) a. dvaeset i eden grad
two-ten and one.MASC city
'twenty-one cities'
b. dvaeset i edna kukja
two-ten and one.FEM house
'twenty-one houses'
c. dvaeset i edno selo
two-ten and one.NEUT village
'twenty-one villages'

(Macedonian examples from Kramer 2003: 124)

Macedonian is not a language in which, regardless of the numeral, the noun is in the singular. With the latter type of language, exemplified below by Bahasa Indonesia, having a plural noun with a cardinal numeral that denotes more than one entity would be ungrammatical. A native speaker of Bahasa Indonesia would see it as a "double plural" (Herafi Zaskia, p.c.). The same is true for the quantifier *many*.

(43) a. dua / tiga / dua belas / banyak orang
two / three / two-teen / many person
'two / three / twelve / many people'
b. dua / tiga / dua belas / banyak *orang-orang
two / three / two-teen / banyak persons
'two / three / twelve / many people'

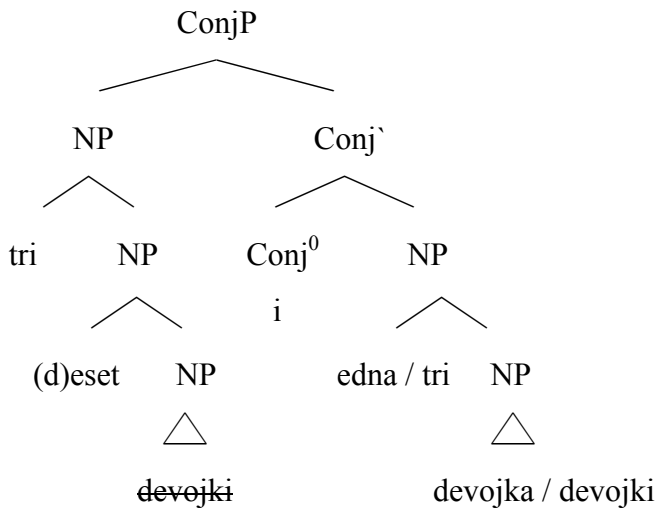
(Bahasa Indonesia examples cf. Herafi Zaskia, p.c.)

In Macedonian, the noun is in the plural with numerals higher than *one*, except for cases like those presented in (42):

(44) a. trieset i tri devojki
three-ten and three girls
'thirty-three girls'
b. trieset i dve devojki
three-ten and two.FEM girls
'thirty-two girls'
c. trieset i dva maži
three-ten and two.MASC men
'thirty-two men'
(Macedonian examples cf. Andrej Karadzoski and Kiril Mokrov, p.c.)

The Macedonian examples in (42) and (44) show that Macedonian numerals exhibit gender agreement between the second conjunct and the noun. In addition to this, the noun is plural when the numeral in the second conjunct is more than *one*, but singular when said numeral is *one*. The coordinative element (*i* 'and') is overt, unlike in English and Greek numerals, and there is no preposition equivalent to the Romanian *de*. These characteristics are what I argued, in the previous sub-section, would be expected under the analysis of Ionin and Matushansky.

(45)



Russian numerals appear to behave the same way as Macedonian numerals do. With the numeral *one* and an additive numeral in which the second conjunct is *one*, the

numeral is in its nominative singular form and exhibits gender agreement. The numeral *two* and an additive numeral ending in *two* also show gender agreement, with the noun being genitive singular. The same genitive singular can be observed with the other paucal numerals, *three* and *four*, while numerals higher than *four* and additives ending in them have nouns in the genitive plural form (Vascenco and Pedestraşu 1985: 123).

(46) a. dvadtsat` odin rubl`
two-ten one rouble.NOM.SG
'twenty-one rubles'

b. dvadtsat` odno okno
two-ten one window.NOM.SG
'twenty-one windows'

c. vosem`desjat` tri stola
eight-ten three table.GEN.SG
'eighty-three tables'

d. sem`desjat dve lampy
seven-ten two.fem lamps.GEN.SG
'seventy-two lamps'

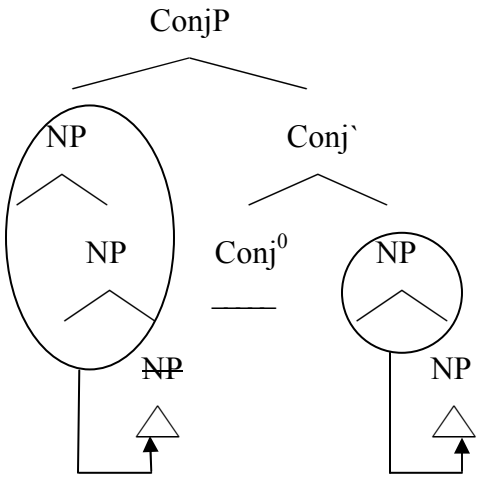
e. dvadtsat` pjat` domov
two-ten five house.GEN.PL
'twenty-five houses'

(Russian examples from Vascenco and Pedestraşu 1985: 123)

In short, the second conjunct of the additive numeral determines the case and number of the (visible) noun, just like it would if it were alone. Otherwise, the noun would always appear in its genitive plural form, as it does with simple multiplicative numerals like *twenty*. Therefore, an argument could be made that there is more than one instance of the NP in the additive numeral-noun construction. In this case, the first would have to be a genitive plural noun, as with multiplicative numerals, while the second would be in the case and number required by the second conjunct numeral. Basically, the

only difference between Russian and Macedonian would be the overt coordinative element in Macedonian as opposed to the Russian asyndetic coordination:

(47)



3. Conclusions

In this paper I have elaborated on numeral-noun constructions with prepositional and additive numerals, drawing mainly on data from English, Romanian, Macedonian and Russian. Two analyses are presented and I attempt to argue that it may be reasonable to assume that prepositional numerals are phrasal constituents, both in English examples like *around ten*, and in Romanian examples like *treisprezece*. As for additive numerals, the English and Romanian data seem to point to the conclusion that they are best viewed as constituents, while the Macedonian and Russian data appear to suggest that they might be better analyzed as in Ionin and Matushansky (2006).

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