Phrase Structure in Generative Theory

Academia Grammaticorum Salensis Sexta
Salų dvaras, Salos, Lithuania, August 3-6, 2009

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Phrase Structure in Generative Theory:

Nominal Architecture

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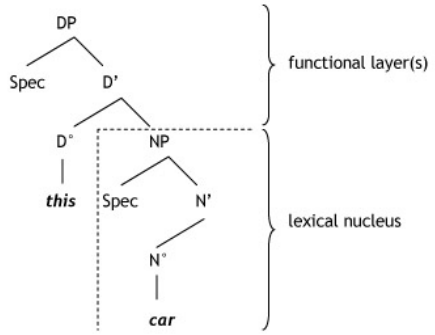
The Determiner Phrase (DP) hypothesis

Abney (1987): what has traditionally been assumed to be the highest layer in the nominal structure (the **NP**) is in fact **dominated** by functional material, headed by the **D(eterminer)**.

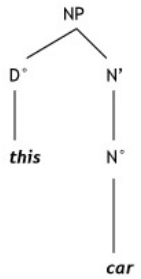
The noun is the semantic/lexical nucleus of the nominal complex; the DP layer plays a syntactic/regulating/configurational role.

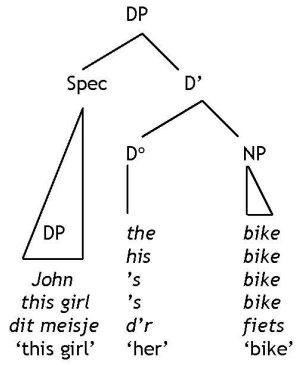
Abney, Steven (1987), *The English noun phrase in its sentential aspect*, PhD diss., MIT.

The DP hypothesis:

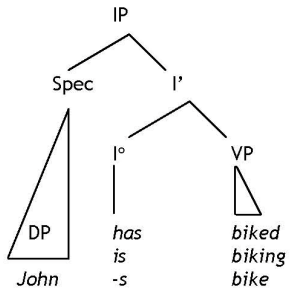


The traditional NP structure:





Analogy between nominal and sentential structures:

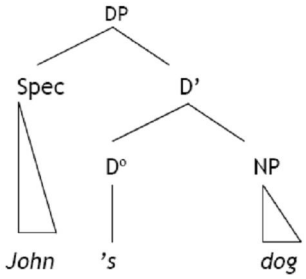


The DP layer is supposed to be universal (part of Universal Grammar).

Example:
Possessives in Polish Sign Language

'my' (PSL)

A widely accepted analysis for English:
the D position may be occupied by the possessive element *'s*.



Dutch: possessor phrases are analyzed as specifiers of the possessive pronoun that is taken to project a D head in the nominal structure (Corver (1990)):

de jongen z'n fiets (Dutch)
the boy his bike
'the boy's bike'

[DP *de jongen* [D *z'n* [NP *fiets*]]]

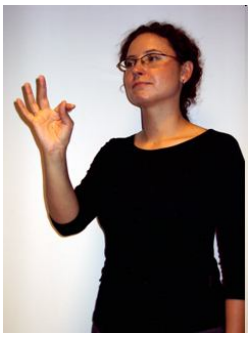
PSL expresses possession with an analogous structure:

THIS GIRL POSS ('her') SISTER
'this girl's sister'

The possessor phrase must be followed by a possessive marker (analogous to the Dutch *z'n*), which takes an NP complement. This may be interpreted as an argument for the DP analysis of PSL nominals.

'this'

'girl'



POSS

'sister'

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Since the late 1980's, many linguists have agued that Abney's D is not the only functional category associated with the lexical category N.

On the basis of data from a variety of unrelated languages, Picallo (1991), Ritter (1991), Shlonsky (1991), Santelmann (1993), Li (1998), Benmamoun (1999), Bhattacharya (2000), among others, argue that the structure of nominal expressions is (at least) **three-layered**.

All of them postulate a functional projection **between** NP and DP (labels include:
QP – Quantifier Phrase, GenP – Gender Phrase, NumP – Number Phrase).

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The DP debate in Slavic linguistics:

The D° position is typically assumed to be occupied by articles. Whether the **articleless** Slavic languages (such as Polish) project DPs on top of NPs has been subject to much debate among generative linguists (e.g., Zlatić (1997), Progovac (1998), Willim (2000), Trenkic (2004), Bošković (2005)). Some of them argue that the DP projection is **universal** (because it is necessary for argumenthood), others suggest that the presence of DP is subject to cross-linguistic **parameterization**.

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There seem to be good reasons to assume that Polish (a language without articles) may be analyzed as projecting the **DP layer** on top of the nominal structure. Furthermore, it may be argued that there are **other functional extensions** of the noun located in the region between NP and DP. The DP analysis of Polish may be supported by certain DP-internal **word order** facts – in particular, a number of **noun/pronoun** asymmetries.

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Personal pronouns/nouns + adjectives:

[***Sam profesor***] *czytał mój artykuł.*
himself-ADJ professor read my article
'The professor himself read my article.'

[***On sam***] *czytał mój artykuł.*
he himself-ADJ read my article
'He himself read my article.'

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Indefinite pronouns/nouns + adjectives:

[***Inteligentny lingwista***] *czytał mój artykuł.*
intelligent linguist read my article
'An intelligent linguist read my article.'

[***Ktoś inteligentny***] *czytał mój artykuł.*
somebody intelligent read my article
'Somebody intelligent read my article.'

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Personal pronouns/nouns + quantifiers:

[***Wszyscy lingwiści***] *czytali mój artykuł.*
all linguists read my article
'All linguists read my article.'

[***Wy wszyscy***] *czytaliście mój artykuł.*
you all read my article
'All of you read my article.'

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Personal pronouns/nouns + numerals:

[***Trzej lingwiści***] *czytali mój artykuł.*
three linguists read my article
'Three linguists read my article.'

[***My trzej***] *czytaliście mój artykuł.*
we three read my article
'The three of us read my article.'

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Progovac (1998) argues that the DP hypothesis provides an **elegant explanation** for similar noun/pronoun asymmetries in Serbian, if we assume that personal pronouns reside in the D° node, whereas nouns occupy the N position (this idea stems from Postal (1969)). Cardinaletti (1993) and Progovac (1998) also suggest that personal pronouns are actually **generated in N°** (similarly to regular nouns) but move to D° in overt syntax for referential reasons.

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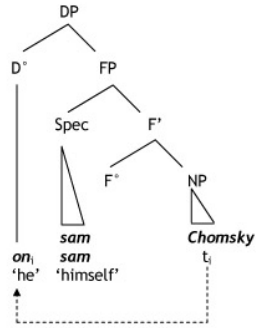
N°-to-D° movement of personal pronouns:



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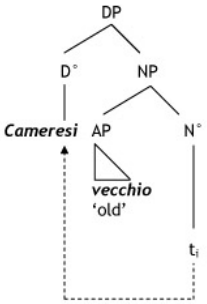
Analogy: Longobardi's (1994) account of the syntax of proper names in Italian



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Evidence for pronouns being generated in N°:

[***Pięciu lingwistów***] *czytało mój artykuł.*
five linguists:**GEN** read my article
'Five linguists read my article.'

[***Nas pięciu***] *czytało mój artykuł.*
us:**GEN** five read my article
'The five of us read my article.'

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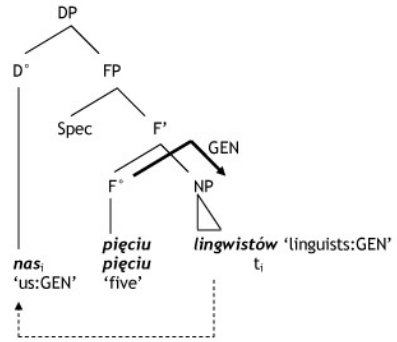
Personal pronouns/nouns + numerals:

[***Trzej lingwiści***] *czytali mój artykuł.*
three linguists:**NOM** read my article
'Three linguists read my article.'

[***My trzej***] *czytaliście mój artykuł.*
we:**NOM** three read my article
'The three of us read my article.'

N°-to-D° movement in numeral constructions:

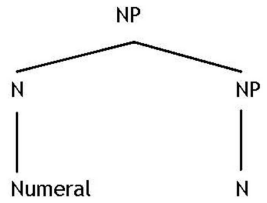


The above analysis **crucially** depends on the presence of the N°-to-D° movement of pronouns. Without postulating such a movement, the fact that the element that **precedes** the numeral has a genitive marking could not be explained.

To summarize the discussion so far: the DP layer must be postulated in Polish in order to account for the **initial** position of personal pronouns (which are assumed to occupy D°).

The syntax of numerals:

Corver and Zwarts (2006), and Ionin and Matushansky (2005) have argued that numerals are **nominal** rather than functional heads,



This could mean that in languages such as Polish, there is **no need** to postulate functional projections above the noun.

However, this approach does not find support in the syntax of Polish **Q-numerals**.

Three classes of Polish numerals:

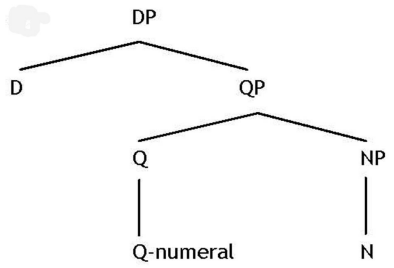
- 1-4 (*A-numerals*) are adjectival and always agree in case with the quantified noun
- high cardinalities, such as 'thousand' or 'million' (*N-numerals*) behave like nouns: they always assign genitive to the quantified noun
- others (*Q-numerals*) assign genitive to the noun in structural-case contexts, however, they agree with the noun in oblique-case contexts.

Q-numeral syntax:

Zobaczyłem [***pięć lingwistek***].
I saw five:**ACC** linguists:**GEN**
'I saw five linguists.'
(*zobaczyć* assigns accusative, a structural case)

Ufałem [***pięciu lingwistkom***].
I trusted five:**DAT** linguists:**DAT**
'I trusted five linguists.'
(*ufać* assigns dative, a lexical case)

Proposal: Q-numerals should be analyzed as heads of **functional** phrases, projected in the region between DP and NP (labelled QP).



By providing a **structural distinction** between Q-numerals (hosted in Q°) and N-numerals (hosted in N°), we account for the fact that their syntactic properties differ considerably.

Note also that Q-numerals **cannot** be analyzed as nouns because they have actually **evolved** from nouns in the diachronic sense – Rutkowski (2007a).

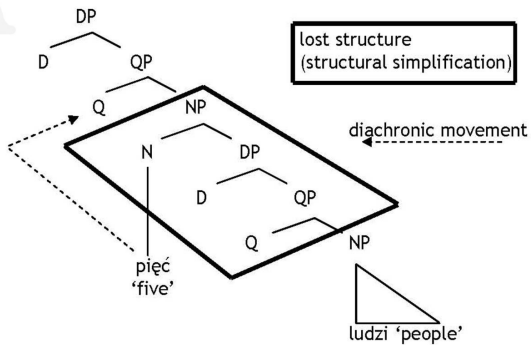
Old Polish cardinals were **regular nouns**. They assigned genitive case to the quantified noun in all syntactic contexts.

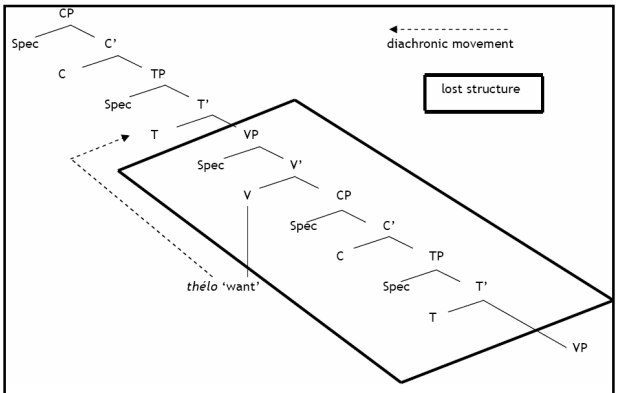
Case	Old Polish	Modern Polish
Nominative	pięć lat five-NOM years-**GEN**	pięć lat five-ACC years-**GEN**
Genitive	pięci lat five-GEN years-**GEN**	pięciu lat five-GEN years-GEN
Dative	pięci lat five-DAT years-**GEN**	pięciu latom five-DAT years-DAT
Accusative	pięć lat five-ACC years-**GEN**	pięć lat five-ACC years-**GEN**
Instrumental	pięcią lat five-INSTR years-**GEN**	pięcioma latami five-INSTR years-INSTR
Locative	pięci lat five-LOC years-**GEN**	pięciu latach five-LOC years-LOC

Proposal: the historical development of Q-numerals is an example of the **reanalysis** of a lexical head as a functional head.

Roberts and Roussou (1999):
grammaticalization means structural simplification

In the history of Polish, a complex expression consisting of two separate extended projections (the DP hosting the numeral and the quantified DP) gets reanalyzed as a single nominal construction.





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Numerals as grammaticalized nouns:

Heine (1997): conceptual transfer 'hand' > 'five', 'man' > 'twenty', 'hair' > 'four hundred'

Lehmann (1982), Heine & Reh (1984), Croft (2000):

three groups of processes typical of grammaticalization:

a) phonological:

- attrition (reduction and erosion that, ultimately, leads to phonological loss)
- coalescence (grammaticalised free morphemes cliticise, become affixes or disappear)
- adaptation (including assimilation)

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b) morphosyntactic:

- obligatorification (a morpheme is obligatory in a given construction, no optimality)
- paradigmaticisation (an open-class element is moved to a closed lexical class and becomes invariant, its form becomes independent from the context)
- rigidification (the word order of a structure gets fixed due to loss of independent syntactic status of its elements, this often leads to morphological fusion or loss)

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c) functional (semantic/pragmatic):

- extension of semantic range and idiomaticisation (the meaning of the whole construction ceases to be a function of the meanings of its parts, it becomes noncompositional and unanalyzable).

Croft (2000): only invariant elements in a given construction may be phonologically eroded as a result of grammaticalisation.

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Phonological erosion and assimilation (*desęte* > *dźesęće* > *dźeśće* > *dźće* > *ście* – the most invariant element):

jedenaście 'eleven' (modern Polish) < *jedinъ na desęte* 'one on ten' (Old Slavic)

dwanaście 'twelve' (modern Polish) < *dъva na desęte* 'two on ten' (Old Slavic)

trzynaście 'thirteen' (modern Polish) < *tri na desęte* 'three on ten' (Old Slavic)

czternaście 'fourteen' (modern Polish) < *četyri na desęte* 'four on ten' (Old Slavic)

piętnaście 'fifteen' (modern Polish) < *pętь na desęte* 'five on ten' (Old Slavic)

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In terms of morphosyntax: loss of independent status (the words *na* 'on' and *desęte* 'ten' are fused in the modern Polish *-naście*).

a. *dъva na desęte koša*
two:NOM on ten baskets:NOM
'twelve baskets' (Old Slavic)

b. *pętь na desęte učenikъ*
five: NOM on ten students:GEN
'fifteen students' (Old Slavic)

c. *dwanaście koszy*
twelve:NOM basket:GEN
'twelve baskets'

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Semantically, the meaning of the whole construction changes from compositional to unanalyzable (the expression is perceived as a fixed unit, the meaning has become conventionalised, it is not a function of the elements that the numeral is composed of).

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Rigidification: numerals always follow pronouns (whilst they normally precede nouns). This word order is rigid and cannot be changed (unless under an emphatic reading):

Siedmiu chłopców płakało.
seven boys:GEN cried
'Seven boys cried.'
Ich siedmiu płakało.
they:GEN seven cried
'Seven of them cried.'
**Siedmiu ich płakało.*
seven they:GEN cried

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Croft (2000) mentions an example of paradigmatisation that involves numerals. In many Austroasiatic languages (such as Wa), a numeral has to be combined with a particular numeral classifier, depending on the noun class that the quantified noun belongs to. However, in some languages of this family (e.g. Vietnamese), one classifier is used with all noun classes. This means that one classifier has become an invariant element of all numeral constructions.

A somewhat similar phenomenon in Polish:

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Numeral case endings

Case Context	Old Polish	Modern Polish
Nom	*pięć*	*pięciu*
Gen	*pięci*	*pięciu*
Dat	*pięci*	*pięciu*
Acc	*pięć*	*pięciu*
Instr	*pięcią*	*pięciu/pięcioma*
Loc	*pięci*	*pięciu*
Gloss	'five'	'five'

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Grammaticalization in progress:

N-numerals do not conform to the Q-type pattern:

Cezary lubi milion osób.
Cezary likes million:ACC people:GEN
'Cezary likes one million people.'
**Cezary lubi milion osoby.*
Cezary likes million:ACC people:ACC

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Cezary doradza milionowi osób.
Cezary advises million:DAT people:GEN
'Cezary advises one million people.'
**Cezary doradza milionowi osobom.*
Cezary advises million:DAT people:DAT

However, they cannot be argued to be fully regular nouns. In Polish, the main verb typically agrees in gender, number and person with the nominal head of the phrase in the subject position (modifiers such as adjectives, A-numerals, as well as genitival phrases attached to the head noun do not influence this agreement):

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trzej/mądrzy lingwiści spali
three:NOM/wise:NOM linguists:NOM slept.MASC
'three/wise linguists were sleeping'

brygada/setka lingwistów spała
brigade:NOM/hundred:NOM linguists:GEN slept.FEM
a brigade/a hundred of linguists were sleeping'

This is not so in the case of Q-numerals and N-numerals:

*pięciu lingwistów spało/*spali*
five:NOM linguists:GEN slept:NEUTER/MASC
'five linguists were sleeping'

*miliard lingwistów spało/*spał*
billion:NOM linguists:GEN slept:NEUTER/MASC
'one billion linguists were sleepin

Grammaticalization – a continuum:

"<" stands for 'is more grammaticalized than'

pięć 'five' < *tysiąc* 'thousand' < *setka* 'a hundred'

Conclusion wrt Polish numerals:

Corver and Zwarts's (2006) and Ionin and Matushansky's (2005) approach would not explain why and how the syntax of Polish cardinals has changed between the Old Polish period and today.

The assumption that Polish **does** project **functional** layers above the NP lets us account for the unusual syntax of Q-numerals.

The syntax of adjectives:

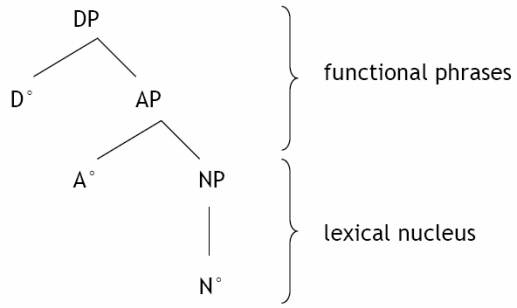
Two types of adjectival modifiers in Polish:

- **qualifying** adjectives describe the entity;
- **classifying** adjectives categorize the entity as belonging to a certain class/type/kind.

Classifying vs. qualifying adjectives:

green tea	[classifying]
green trousers	[qualifying]

Adjectives in Abney (1987):



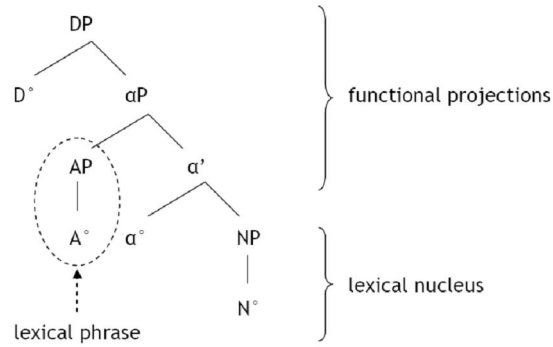
The above model is still used by, e.g., Bošković (2005):

A strong argument for A headedness of the traditional NP in English, noted by Abney (1987), is provided by constructions like the following:

too big of a house

The adjective appears to be assigning genitive Case to the following NP, which is realized through *of*-insertion.

Predominant view on qualifying adjectives:



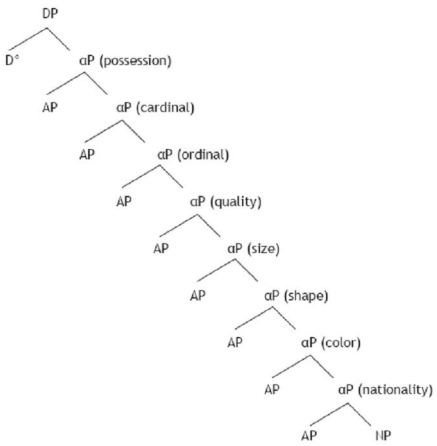
Cinque (1994): hierarchically ordered functional projections associated with different semantic categories of adjectives (the symbol > means 'is higher in structure than'):

possessive > cardinal > ordinal > quality > size > shape > color > nationality

numerous big black American cars

**American black big numerous cars*

(see also Laenzlinger (2000), a.o.)



Scott (1998):

Ordinal (*last*) > Cardinal (*numerous*) > Subjective Comment (*boring*) > Evidential (*famous*) > Size (*big*) > Length (*short*) > Height (*tall*) > Speed (*slow*) > Depth (*shallow*) > Width (*broad*) > Weight (*heavy*) > Temperature (*cold*) > Wetness (*dry*) > Age (*modern*) > Shape (*round*) > Color (*black*) > Nationality/Origin (*Mongolian*) > Material (*wooden*)

Scott (1998):

different positioning influences the interpretation:

What a cool long red dress!

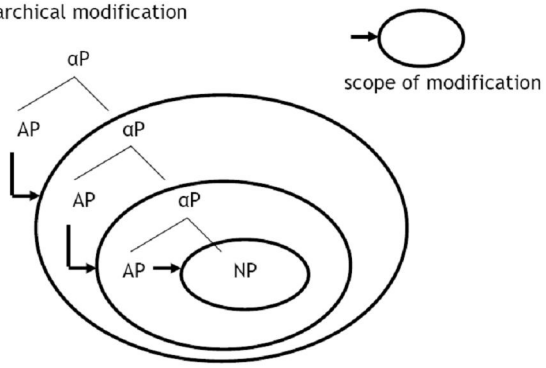
= *What a nice long red dress!*

What a long cool red dress!

= *What a long cold red dress!*

Sproat and Shih (1991):
hierarchical modification vs. parallel modification

Hierarchical modification



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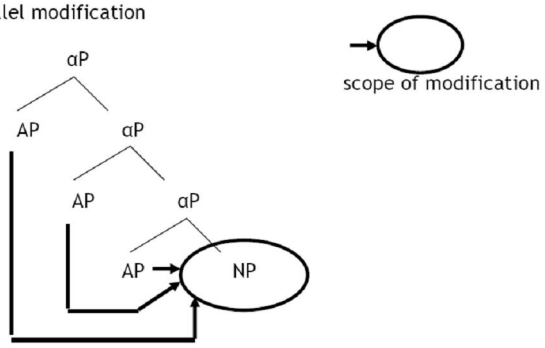
Parallel modification



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Trugman (2005): an adjectival expression can have a classifying (kind-referring) function only if it refers to a "well-established kind".

The function of adjectives in languages such as English or Spanish might be ambiguous between classification and qualification:

actor cómico
actor comic
'comic/comedy actor'

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Some languages resolve such ambiguities by means of morpho-syntax.

Polish – different word order:

niedźwiedź biały [classifying]
bear white
'a polar bear'('Ursus maritimus')

biały niedźwiedź [qualifying]
white bear
'a white bear'
('a bear that happens to be white')

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Serbian – morphology on the adjective:

beli medved [classifying]
white-<u>LA</u> bear
'a polar bear' ('Ursus maritimus')

beo medved [qualifying]
white-<u>SA</u> bear
'a white bear'
('a bear that happens to be white')

"LA" and "SA" stand for "long adjective" and "short adjective", respectively

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Proposal (Rutkowski and Progovac 2005):

- classifying adjectives are base generated in the **specifier of NP** (see also Bosque and Picallo 1996);
- regular qualifying adjectives are located in **iterative functional projections** above NP, labelled **αPs** (see also Pereltsvaig (2007));
- classifying expressions involve N-movement to a functional projection located above NP, labelled nP.

I refer to that functional projection as nP, in order to remain neutral with respect to its semantics.

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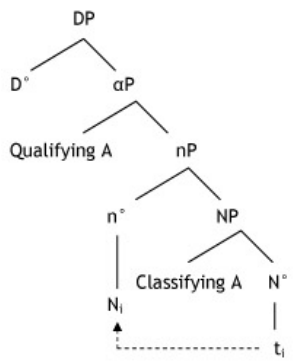

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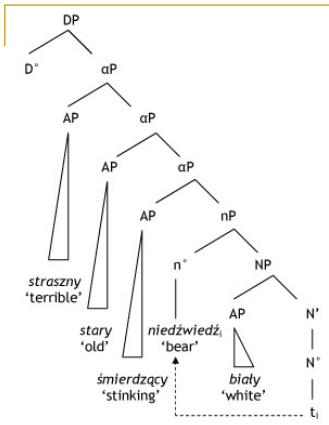

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The idea that classifying adjectives are NP-internal is supported by the fact that complexes consisting of a classifying adjective and a noun seem to form a closer unit than complexes which involve a qualifying adjective - see e.g. the structure of compounds in English:

tea-drinker
green-tea-drinker [classifying]
**good-tea-drinker* [qualifying]

(as pointed to me by Dave Pesetsky)

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It may be argued that nP is activated syntactically in many different ways. It is involved in the following structures (see Rutkowski (2007b)):

- classifying adjectival expressions in languages such as Polish;
- pseudo-partitive constructions in languages such as Greek;
- numeral structures with classifiers in languages such as Japanese;
- diminutive phrases in languages such as German.

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If present, the n head hosts a classifying/ individuating feature (*n-feature*) that can be checked in one of the following ways:

- by merging a classifier,
- by merging a pseudopartitive head,
- by N-raising in classifying adjectival structures,
- by N-raising in diminutive structures.

Possibly, there are other n-related constructions.

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Pseudopartitives:

Languages such as Greek or German differentiate partitives from pseudo-partitives (cf. Stickney 2004, Koptjevskaja-Tamm 2001):

mia kouta me ta vivlia [partitive]
a box with the books
'a box of the books'
mia kouta vivlia [pseudo-partitive]
a box books
'a box of books'
(Greek)

72

In terms of semantics, partitives refer to a part/subset of a superset, whereas pseudo-partitives indicate an amount (quantity) of some substance.

eine Dose von diesen Kekse [partitive]
a box of those cookies
'a box of those cookies'
eine Dose Kekse [pseudo-partitive]
a box cookies
'a box of cookies'
(German)

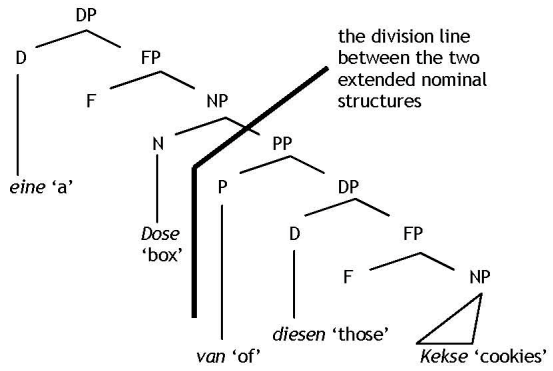
73

In terms of syntax, pseudo-partitives are generally less complex than partitives:

partitive: D N P D N
pseudo-partitive: D N N

Similarly to Stickney (2004), I propose that pseudopartitive elements occupy the head of a functional projection. Therefore, the pseudopartitive structure is "lighter" than the partitive structure (the pseudopartitive measure element is not a regular noun, unlike its partitive counterpart).

74



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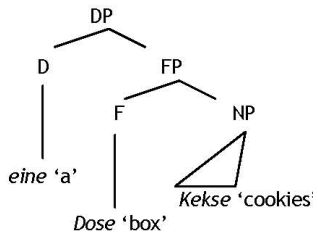


Being base generated immediately above NP, the measure element cannot be followed by other functional elements (such as prepositions or determiners). I propose that it is located in nP.

76

Stavrou (2003) points out that only classifying adjectives can intervene between two nouns in pseudo-partitive constructions in Greek:

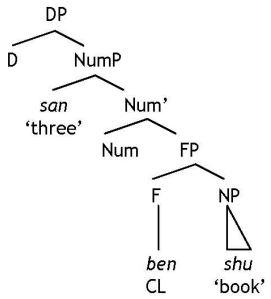
ena paketo elafria tsigara [classifying]
a pack light cigarettes
'a pack of light cigarettes'
**ena paketo frixta tsigara* [qualifying]
a pack terrible cigarettes
'a pack of terrible cigarettes'

This can be accounted for if the pseudo-partitive head of nP (*paketo*) is assumed to select an NP complement: only classifying adjectives are NP-internal.

77

Classifiers:

Similarly to Li 1999 and Cheng and Sybesma 1999, a.o., I analyze East Asian classifiers in numeral expressions as located in a functional phrase above NP. However, I do not assume that there is a special "Classifier Phrase", projected solely for the sake of being occupied by adnumeral classifiers.



78

In some studies, such constructions have been analyzed as parallel to the pseudo-partitive structure discussed in the previous subsection (see e.g. Chierchia 1998).

However, Watanabe (2006) shows that the analogy between pseudo-partitives and classifiers is not strightforward because the measure noun is itself accompanied by the numeral+classifier combination.

Example:

Roger-wa gohan donburi-ni yon-hai-o tabeta.
Roger-top rice big.bowl-dat 4-CL-acc ate
'Roger ate four big bowls of rice.'

When the Japanese noun *donburi* 'big bowl' denotes a container it requires a specialized classifier *hai*.

79

According to Watanabe (2006), the fact that the measure element requires a classifier in Japanese means that it is a separate DP, and not a functional element above NP. Therefore, I argue that languages such as Japanese do not have pseudo-partitives, i.e. structures in which the measure element is the head of a functional projection.

80

The Japanese equivalents of expressions such as *a bottle of wine* must be treated as partitives proper. This means that, in languages such as Japanese, the presence of classifiers implies the lack of pseudo-partitives. Therefore, I propose that classifiers and pseudo-partitive measure nouns compete for the same syntactic spot, namely the head of nP.

81

Diminutives:

Wiltschko (2006) notices that German diminutive suffixes turn mass nouns into count nouns:

viel Wein
much wine
'much wine'
viele Weinchen [diminutive]
many-PL wein-DIM
'many little (good) wines'

82

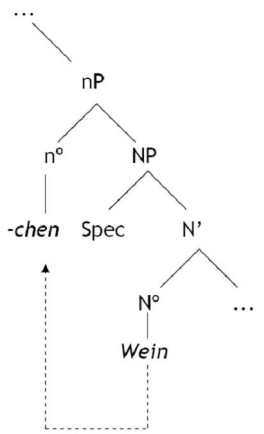
The individuating function seems to be associated with the diminutive cross-linguistically (cf. Jurafsky (1996)):

sukli
sugar
'sugar'
sukli-ví [diminutive]
sugar-DIM
'piece of sugar'
(Ewe)

83

According to Wiltschko (2006), diminutive affixes are associated with countability because they reside in a functional projection above NP. I adopt this analysis and unify it with the data discussed above. Therefore, the diminutive should be interpreted as one of (at least) four different ways in which nP may be active syntactically.

84



85

This proposal predicts complementary distribution of nP-related constructions. Since there is only one nP we should not have structures which are, for instance, both pseudo-partitive and diminutive, or classifying and diminutive.

86

The above prediction seems to find confirmation in the following examples from German:

Glas Wein [pseudo-partitive]
glass wine
'a glass of wine'
**Glas Weinchen* [pseudo-partitive/diminutive]
glass wine-DIM
**Rotweinchen* [clssifying/diminutive]
red-wine-DIM

87

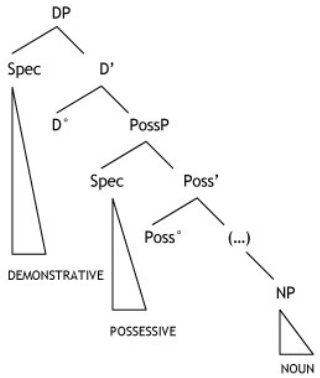
Back to Polish:
The Syntax of Demonstratives and Possessives

Polish demonstratives and possessives are **adjectival** elements: they agree in case, gender and number with the modified noun. They do **not** compete for the same syntactic slot.

ta moja siostra
this:FEM,SING,NOM my:FEM,SING,NOM sister
'this sister of mine'

88

Their surface syntactic position:



89

The relative ordering of demonstratives and possessives with respect to numerals:

te trzy siostry
these three sisters
'these three sisters'

moje trzy siostry
my three sisters
'my three sisters'

90

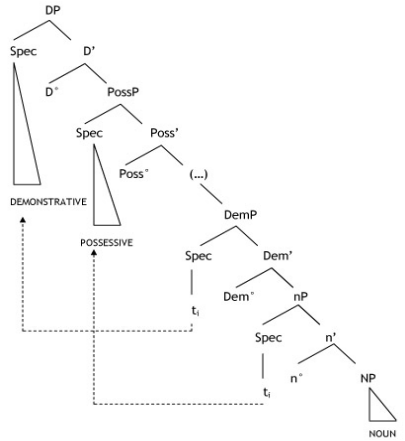
Problem: case marking with Q-numerals!

tych pięć sióstr
these:GEN five sisters:GEN
'these five sisters'

moich pięć sióstr
my:GEN five sisters:GEN
'my five sisters'

Proposal: demonstratives and possessives are base generated relatively low in the nominal complex (in DemP and nP, respectively).

91



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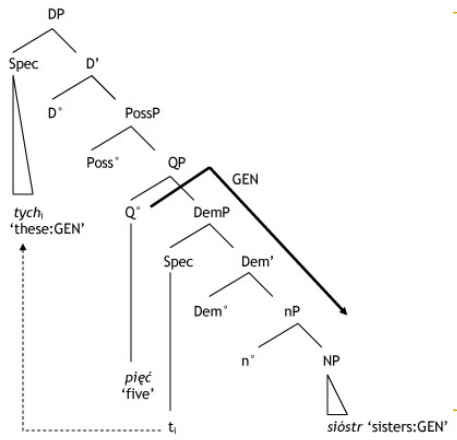


93

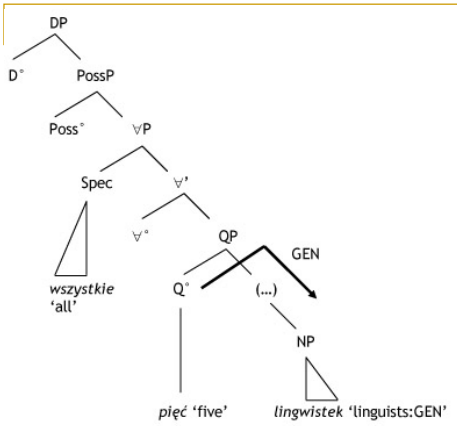
Note that the above analysis does not apply to general quantifiers. When combined with Q-numerals, they do not take genitive morphology. This means they cannot be base generated below QP. Therefore, another functional projection must be postulated in the Polish nominal structure: ∀P.

**wszystkich*$_i$ *pięć* t_i *lingwistek*

all:GEN five linguists:GEN

'all five linguists'

94



95

Conclusion:

The DP approach seems to be applicable to Polish nominals. The following syntactic architecture could be proposed:

DP > PossP > ∀P > QP > αP* > DemP > nP > NP

* iterative

96

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