

MODIFICATION COURSE – RITA MANZINI

DAY 1: LINEAR ORDER: GREENBERG'S UNIVERSAL 20

Object of the course

The structure of modification (as opposed to complementation) e.g., adjectival modifiers

- In generative grammar, this is inextricably connected with the issue of whether linear order is defined in the syntax (Kayne 1994) – or just at Externalization (EXT, Chomsky 2005, 2013, 2024).
- The choice of either option has consequences for whether the structure of modification/adjunction is highly constrained (Kayne, Cinque 1994ff.) or not necessarily so (Chomsky 2013, 2024)

On which side does the empirical evidence fall? E.g. with adjectival modification?

Kayne's Antisymmetry

Kayne (1994)

- proposes that a linear order of terminals is defined in the syntax under the Linear Correspondence Axiom (LCA)
- The linear order of terminals is universal (namely, Specifier-Head-Complement, SHC); variation in word order derives from movement operations

Kayne (1994: 4-6)

A linear ordering has three defining properties

- a. It is transitive; that is, $x > y$ & $y > z \rightarrow x > z$.
- b. It is total; that is, it must cover all the members of the set: for all distinct x, y , either $x > y$ or $y > x$.
- c. It is antisymmetric, that is, $\text{not}(x > y \text{ \& } y > x)$.

“Although the dominance relation itself is not total, it becomes total when restricted to the set of nodes dominating a given node. Let us say that it is locally total, ... a locally linear ordering. Asymmetric c-command ... is ... both transitive and antisymmetric. ... If we restrict ourselves henceforth to binary-branching phrase markers, it is locally total, and hence locally linear, in

the same sense as the dominance relation”.

For a given phrase marker P, consider the set A of ordered pairs of non-terminals $\{ \langle X_i, Y_i \rangle \}$ such that for each i, X_i asymmetrically c-commands Y_i . $d \langle X_i, Y_i \rangle$ (the image under d of $\langle X_i, Y_i \rangle$) is the set of ordered pairs of terminals $\{ \langle a, b \rangle \}$ such that (for each i) a is dominated by X_i and b by Y_i . $d(A)$ is the union of all $d \langle X_i, Y_i \rangle$. For T the set of terminals,

- (1) *Linear Correspondence Axiom*
 $d(A)$ is a linear ordering of T.

The LCA is compatible with standard X-bar theory (for languages like English) – but not with other logically possible phrase structure theories (e.g. no endocentricity, cf. Chomsky 2013; n-ary branching, cf. Chomsky 2024).

- endocentricity
- one adjunct/Spec per phrase
- complementation to the right, Spec/adjunction to the left (SHC). Other orders (e.g. Complement-Head) are derived via movement.

Greenberg's Universal 20: Cinque (2005)

Empirical prediction of the Antisymmetry framework: Left-right asymmetries in syntax.

Greenberg's (1963) Universal 20 (Hawkins's 1983 formulation)

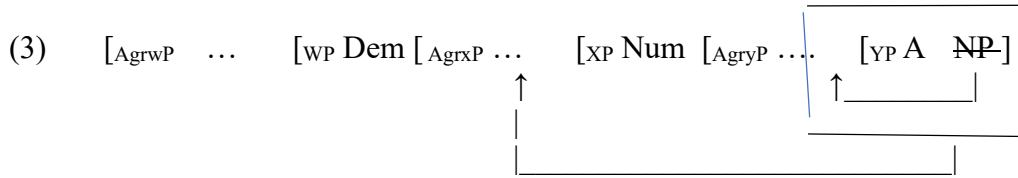
- (a) in prenominal position the order of demonstrative, numeral, and adjective conforms to the order Dem - Num - A
- (b) in postnominal position the order of the same elements conforms either to the order Dem - Num - A or to the order A - Num - Dem.

Cinque (2005)

- If nothing moves, the unique Merge order Dem-Num-A-N surfaces prenominally is
- If NP raises alone, from specifier to specifier (Spec to Spec) above each of the functional projections hosting A, Num, D, the order N-Dem-Num- A is derived

- (2) $[_{AgrwP} \text{ NP } [_{WP} \text{ Dem } [_{AgrxP} \dots [_{XP} \text{ Num } [_{AgryP} \dots [_{YP} \text{ A } \text{ ~~NP~~ }]]]]]]$
- $\uparrow \quad \quad \quad \uparrow \quad \quad \quad \uparrow \quad \quad \quad \uparrow$
 $\text{---} \text{---} \text{---} \text{---} \text{---} \text{---} \text{---} \text{---}$

- If NP pied-pipes the category that dominates it, in a “roll-up” fashion that reverses the order of the modifiers, the order is N-A-Num-Dem



24 orders are the mathematically possible combinations of the four elements Dem Num A N

- (4)
- _ Dem Num A N
 - _ Dem Num N A
 - _ Dem N Num A
 - _ N Dem Num A
 - * Num Dem A N
 - * Num Dem N A
 - * Num N Dem A
 - * N Num Dem A
 - * A Dem Num N
 - * A Dem N Num
 - _ A N Dem Num
 - _ N A Dem Num
 - * Dem A Num N
 - _ Dem A N Num
 - _ Dem N A Num
 - _ N Dem A Num
 - * Num A Dem N
 - _ Num A N Dem
 - _ Num N A Dem
 - _ N Num A Dem

- u. * A Num Dem N
- v. * A Num N Dem
- w. _ A N Num Dem
- x. _ N A Num Dem

Cinque's (2005) assumptions

- (5) a. Merge order: [. . . [_{WP} Dem [. . . [_{XP} Num [. . . [_{YP} A NP]]]]]]
- b. Parameters of movement:
 - i. No movement or
 - ii. Pied-piping of the *whose picture* type or
 - iii. Movement of NP without pied-piping or
 - iv. Pied-piping of the *picture of who* type
 - v. *Total* versus *partial* movement (in other words, NP raises all the way up, or just partially).
 - vi. Neither head movement nor movement of a phrase not containing the (overt) NP is possible
- (6) (a) (Dem Num A N) is derived if nothing moves.
- (b) (Dem Num N A) is derived from Dem Num A N if NP raises one notch, around A.
- (c) (Dem N Num A) is derived if NP moves two notches, around A and Num.
- (d) (N Dem Num A) is derived if NP moves three notches, around A, Num, and Dem.
- (e) *(Num Dem A N) cannot be derived. NP has not moved, and the modifiers to its left are in the wrong Merge order.
- (f) *(Num Dem N A) cannot be derived. Raising of NP without pied-piping implies a wrong Merge order of the modifiers (Num Dem A N) ...
- (g) *(Num N Dem A) cannot be derived through. Raising of NP without pied-piping implies that the Merge order is Num Dem A N, which is a wrong order ...
- (h) *(N Num Dem A) cannot be derived. Raising of NP without pied-piping implies a Merge order (Num Dem A N) ...
- (i) *(A Dem Num N) cannot be derived. NP has not moved, and the modifiers to its left are in the wrong Merge order

- (j) *(A Dem N Num) cannot be derived. NP has moved one notch, but the two modifiers to its left are in the wrong Merge order ...
- (k) ([A N] Dem Num) has a well-formed derivation with raising of NP plus pied-piping of the *picture of who* type of the lowest modifier (A), followed by raising of [A N] without pied-piping around both Num and Dem
- (l) ([N A] Dem Num) has a derivation in which NP raises past A, followed by pied-piping of the *whose picture* type past Num, followed by raising of [N A] without pied-piping past Dem.
- (m) *(Dem A Num N) cannot be derived. NP has not moved, and the modifiers to its left are in the wrong Merge order
- (n) (Dem [A N] Num) has a derivation with partial raising of NP plus pied-piping of the *picture of who* type of [A N] around Num.
- (o) (Dem [N A] Num) has a derivation involving partial raising of NP plus pied-piping of the *whose picture* type (of [N A]) around Num.
- (p) (N Dem [A N] Num), if genuine its derivation would seem to involve a single raising of the *picture of who* type of [A N] around Num) and then extraction of the sole NP around Dem.
- (q) *(Num A Dem N) cannot be derived. NP has not moved, and the modifiers to its left are in the wrong Merge order
- (r) ([Num A N] Dem) has a derivation with partial raising of NP plus pied-piping of the *picture of who* type of A and Num ([Num A N]) around Dem.
- (s) ([Num [N A]] Dem) has a derivation with partial (marked) raising of NP around A, followed by raising plus pied-piping of the *picture of who* type of [Num N A] around Dem.
- (t) ([N Num A] Dem) has a derivation with raising of NP without pied-piping around A and Num, followed by raising plus pied-piping of the *whose picture* type of [N Num A] around Dem.
- (u) *(A Num Dem N) cannot be derived. NP has not moved, and the modifiers to its left are in the wrong Merge order
- (v) *(A Num N Dem) cannot be derived. Raising of NP without pied-piping implies a wrong Merge order of the modifiers ...

- (w) ([[A N] Num] Dem) has a derivation with raising of NP plus pied-piping of the *picture of who* type of A around Num followed by raising of [A N Num] around Dem.
- (x) ([[N A] Num] Dem) has a derivation involving raising of NP with successive pied-pipings of the *whose picture* type all the way up.

PS. Dryer (2018) claims that four orders that the account in Cinque (2005) excluded are actually attested in his sample. Cinque (2025) addresses the counter-examples to Cinque (2005) mentioned by Dryer, arguing that they prove to be only apparent or do not constitute clear counter-evidence, as they are not the only orders possible in those languages.

Cinque (2025) (cf. 1994, 2010)

Consider the three adjective classes of color, size, and quality. While pre-nominally only one order is possible post-nominally more than two orders are actually possible. These orders are derivable, with different combinations of the movement possibilities from a structure conforming to the principle of relative distance from the noun

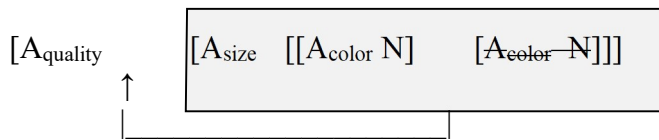
- (7) a. A_{quality} A_{size} A_{color} N
 b. a beautiful big red ball (English)
- (8) a. N A_{color} A_{size} A_{quality}
 b. una palla rossa grande brutta (Italian, Cinque 2010)
- (9) a. N A_{quality} A_{size} A_{color}
 b. ballun sabiħ kbir aħmar (Maltese)

- Only the Head of the projection, the “engine” of the movement, here the NP, can move along the hierarchy that respects the relative distance of the various adjectival classes from the noun.
- The “engine” of the movement, here NP, can move by itself, or by *whose pictures* pied piping, or *pictures of whom* pied piping.

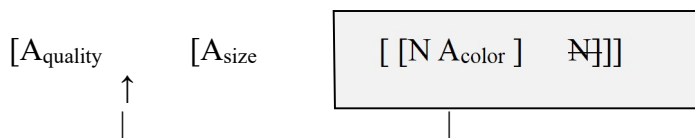
- (10) If NP moves to the top of the hierarchy by itself, the order that is obtained is the order of Maltese:

NP [A_{quality} [A_{size} [A_{color} NP]]]
 ↑_____

- (11) If it moves in the *pictures of whom* pied piping mode, whereby it drags along material immediately above it, the order that is obtained is the order of English in which the relative order of the different adjectives is not altered



- (12) If the NP moves in the *whose pictures* pied piping mode then the order that is obtained is the mirror image of the order of English and Bangla), in which the order of the different adjectives is reversed



The five possible post-nominal orders of adjectives correspond to the five possible post-nominal orders of DemP, NumP, and AP

- (13)
- | | | | | |
|----|-----|---------------|---------------|---------------|
| a. | NP | A_{color} | A_{size} | $A_{quality}$ |
| b. | N | $A_{quality}$ | A_{size} | A_{color} |
| c. | NP | A_{size} | A_{color} | $A_{quality}$ |
| d. | NP | A_{color} | $A_{quality}$ | A_{size} |
| e. | NP | $A_{quality}$ | A_{color} | A_{size} |
| f. | *NP | A_{size} | $A_{quality}$ | A_{color} |

“The above movement approach

First: It allows one to derive all attested orders from one and the same hierarchy that respects the semantic/cognitive principle of relative distance of different modifiers from the Head.

....

foremost: The movement approach naturally carries over to the other syntactic domains that display the same pattern of possible and impossible orders: a single order to the left of the Head, more orders to the right.”

Chomsky (2005, 2013), Chomsky and Berwick (2011)

Variation affects only Externalization (EXT, Berwick and Chomsky 2011: 35)

morphology and phonology— the linguistic processes that convert internal syntactic objects to the entities accessible to the sensory-motor system—might turn out to be quite intricate, varied, and subject to accidental historical events. Parameterization and diversity, then, would be mostly—possibly entirely—restricted to externalization.

where externalization includes the lexicon (Berwick and Chomsky 2011: 39)

[lexical items] are the conceptual atoms of thought and its ultimate externalization

The question whether syntax is parametrized or not involves the issue of linear order

Linear order in syntax or as part of Externalization?

- a. Linear order is syntactic and its parameters are movement parameters in syntax (Kayne 1994).
- b. Linear order and its parameters are part of Externalization (EXT, Chomsky 2005, 2013).

For Chomsky (2005: 15)

one asymmetry imposed by the phonetic interface is that the syntactic object derived must be linearized... If linear order is restricted to the mapping to the phonetic interface, then it gives no reason to require the basic operation Merge to depart from the simplest form ... unstructured Merge, forming a set.

E.g., Merge pairs {Head, Complement} are linearized so that Head precedes Complement or the reverse (essentially reflecting traditional ideas about the head-complement parameter).

Universal 20: Abels and Neeleman (2012)

Caveat (on typological generalizations)

The scope of Cinque's generalizations must be restricted in order to accommodate examples where orders different from the unmarked one appear in circumscribed domains. In English, Italian there is a set of structures in which adjectives precede pronominal numerals

- (14)
- a. the most interesting five books (that John has read)
 - b. i bei/ nuovi tre libri di Paolo

the beautiful/new three books by Paolo

There is another way of representing the same data as Cinque. The members of the pairs in the symmetric part of the table are either both attested or both unattested, whereas the pairs in the asymmetric part of the table have one attested and one unattested member

	Symmetry		Asymmetry	
	I	II	III	IV
a.	Dem ₁ Num ₂ A ₃ N ₄	N ₄ A ₃ Num ₂ Dem ₁	Dem ₁ N ₄ Num ₂ A ₃	A ₃ Num ₂ N ₄ Dem ₁
b.	Dem ₁ Num ₂ N ₄ A ₃	A ₃ N ₄ Num ₂ Dem ₁	N ₄ Dem ₁ Num ₂ A ₃	A ₃ Num ₂ Dem ₁ N ₄
c.	Dem ₁ A ₃ N ₄ Num ₂	Num ₂ N ₄ A ₃ Dem ₁	A ₃ N ₄ Dem ₁ Num ₂	Num ₂ Dem ₁ N ₄ A ₃
d.	Dem ₁ N ₄ A ₃ Num ₂	Num ₂ A ₃ N ₄ Dem ₁	N ₄ Num ₂ A ₃ Dem ₁	Dem ₁ A ₃ Num ₂ N ₄
e.	A ₃ Dem ₁ Num ₂ N ₄	N ₄ Num ₂ Dem ₁ A ₃	N ₄ Dem ₁ A ₃ Num ₂	Num ₂ A ₃ Dem ₁ N ₄
f.	A ₃ Dem ₁ N ₄ Num ₂	Num ₂ N ₄ Dem ₁ A ₃	N ₄ A ₃ Dem ₁ Num ₂	Num ₂ Dem ₁ A ₃ N ₄

We can base-generate eight of the fourteen attested linear strings, simply by allowing crosslinguistic variation in the linearization of sister nodes in the hierarchical structure Dem - Num - A - N. These eight orders are the grammatical members of the symmetrical pairs

- (15)
- | | | | |
|------------------|------------------|------------------|--------------------|
| Dem ₁ | Num ₂ | A ₃ | N ₄ |
| Dem ₁ | Num ₂ | N ₄] | A ₃] |
| Dem ₁ | N ₄] | A ₃ | Num ₂] |
| N ₄] | A ₃ | Num ₂ | Dem ₁] |
| A ₃ | N ₄] | Num ₂ | Dem ₁] |
| Num ₂ | N ₄] | A ₃ | Dem ₁] |
| Dem ₁ | A ₃ | N ₄] | Num ₂] |
| Num ₂ | A ₃ | N ₄] | Dem ₁] |

The remaining six attested orders are derived by leftward movement of a constituent containing the noun. These are the grammatical members of the asymmetric pairs

- (15')
- | | | | | |
|------------------|------------------|------------------|------------------|--------------------|
| N ₄ | Dem ₁ | Num ₂ | A ₃ | N ₄ |
| Dem ₁ | N ₄ | Num ₂ | A ₃ | N ₄ |
| N ₄ | Num ₂ | A ₃ | N ₄] | Dem ₁] |

N ₄	Dem ₁	N₄]	A ₃	Num ₂]
A ₃	N ₄]	Dem ₁	Num ₂	[A₃—N₄]
N ₄	A ₃]	Dem ₁	Num ₂	[N₄—A₃]

In order to derive the word-order typology in the table, it suffices to limit the asymmetry of syntax to movement (movement is leftward). The stronger assumption that phrase structure theory itself is asymmetric is unwarranted, as it does not further limit the set of derivable strings.

DAY 2: ADJECTIVES: ORDER AND STRUCTURE OF MODIFICATION

The basic hierarchy

The idea that adjectival modifiers are ordered with respect to one another in the syntax according to the semantic class they belong to ultimately goes back to typological research (Dixon 1977), and to Sproat and Shih’s (1991) structural encoding. In the cartographic implementation (Cinque 1994, 2010), classes like color, size, shape are encoded as functional F heads, while APs belonging to that class are hosted in Spec, FP.

- (16) a. [FP AP_{quality} [FP AP_{size} [FP AP_{age} [FP AP_{shape} [FP AP_{color} [FP AP_{origin} [NP]]]]]]]]]
b. Scott (2002)
Evaluation > Size > Length > Height > Speed > Depth > Width > Weight > Wetness >
Age > Shape > Colour > Nationality/origin > material

In English, *size > color* and not *color > size*, because of the hierarchy. The ANA configuration of Romance mimics English in allowing the order *size > color* with *size* prenominal and *color* postnominal, but not the reverse.

- (17) a. a big blue box/(*)a blue big box
b. un grosso cane nero/*un nero cane grosso
‘a big dog black/a black dog big’

Undergeneration problem

Already Dixon 1977: 38 mentions that *slow new* and *new slow* are equally acceptable in English, though only the former is predicted by the hierarchy.

Truswell 2009: 527 (cf. Svenonius 2008: 39):

Only some adjective classes are rigidly ordered with respect to one another– which is not captured by a Cinquean LCA-complying hierarchy.

- (18) a. a big black dog size > color
b. #a black big dog #color > size

- | | | |
|----|------------------|------------------|
| c. | wooden red clogs | material > color |
| d. | red wooden clogs | color > material |
| e. | new big cuts | age > size |
| f. | big new cuts | size > age |

Trainin and Shetreet (2021), consider sequences of size, color, pattern in English. In production, in a naturalness ranking task and in a forced choice task, they find a preference for size>color>pattern and a secondary preference for size > pattern > color. Other sequences are below chance or unattested. This is consistent with the generalization size > (color, pattern).

In Italian, multiple prenominal adjectives in ANA configurations are also freely ordered, as in (19).

- (19) a. dei grossi nuovi tagli governativi
 some big new cuts governmental
- b. dei nuovi grossi tagli governativi
 some new big cuts governmental

Overgeneration problem

There is also a potential overgeneration problem. This is because of the possibility of partial movements – i.e. not all the way to the top of the hierarchy.

The ANA configuration of Italian mimics English in allowing the order size > color with size prenominal and color postnominal, but not the reverse.

According to Cinque (1994) Italian is characterized by movement of NP to the left of the shape > color > origin part of the hierarchy (abstract from the fact that roll-up movement is involved according to Cinque 2010).

- (20) a. un grosso cane nero / *un nero cane grosso
 a big dog black a black dog big
 ‘a big black dog’
- b. ... [FP AP_{age} [NP [FP AP_{shape} [FP AP_{color} [FP AP_{origin} NP]]]]]]
- ↑ _____|

Are there as many languages as there are possible splits in the hierarchy? Better known Romance languages have the same rough distribution of adjectives as Italian (e.g. Abeillé and Godard 1999, Bouchard 2002 for French, Bosque 1999, Demonte 1999 for Spanish).

Bernstein (1993) documents Walloon (a Romance language in contact with Flemish) where most adjectival classes appear prenominal. The only adjectives that resist prenominal placement are nationality ones. Bernstein concludes that obligatory NP movement in Walloon stops immediately 'nationality/origin' in the hierarchy.

- (21) a. on neûr tchapê (Walloon)
 a black hat
 b. lu peûpe italyin
 the people Italian

Jones (1993: §2.14) provides a restricted list of adjectives that can appear in prenominal position: *bellu* 'nice, beautiful', *bonu* 'good', *bravu* 'good', *bruttu* 'ugly', *poveru* 'poor', *santu* 'holy'. These adjectives appear to be evaluative or to be used as evaluatives. Thus 'poor' is obligatorily postnominal when it denotes lack of riches (as opposed to commiseration by the speaker). It is therefore possible to conclude that in Sardinian NP movement stops immediately below the highest category in the hierarchy, i.e. 'value'.

- (22) a. una tassa manna/*manna tassa
 a cup big/ big cup
 b. una domo minore/*minore domo
 a house small/ small house
 c. una bella femina/femina bella
 a beautiful woman/woman beautiful

Manzini and Savoia (2005, vol III: 575-660), cf. Savoia et al. (2025), exemplify adjectives in their survey of nominal inflections in around eighty Italian varieties. In all varieties, adjectives corresponding to Italian *bello* ('beautiful'), *bravo* ('good'), *buono* ('good'), *brutto* ('ugly') are found only prenominal. Other adjectives are found only postnominally, including those corresponding to Italian *vecchio* ('old'), *nuovo* ('new'), *grosso/grande* ('big'), *giovane* ('young'). The emerging picture is consistent with that of Sardinian.

In order to exclude that Cinque's (1994, 2023b) model overgenerates, it would be necessary to show that there are as many languages as there are possible splits in the hierarchy. As far as I can tell, this claim has never been made for Romance or other languages. The potential overgeneration problems multiply as (i) the hierarchy is enriched and (ii) the various types of pied-piping are brought into the picture.

If we accept that the movement Cinque (2005, 2025) postulates (NP movement, and various kinds of pied-piping) are independently available in grammar, the source of potential overgeneration is the universal base hierarchy.

Larson (2021)

In an article devoted to 'rethinking cartography', Larson (2021) addresses the empirical problem of undergeneration, while retaining semantic classes – and locally total order in the syntax.

- The features identified by cartographers are borne by a single head, for instance N, where they “undergo agreement in order from lowest ranked to highest ranked” (Larson 2021: 256-257) determining the surface order of the APs that they enter Agree with.
- The order of features is not pre-encoded, but rather determined by the SUBJECTIVITY ($\leq_{\text{SUBJ}}$) relation (Scontras et al. 2017, 2019)
- It follows that for any given pair of adjectives, the relation may be well-defined or not – and if it is not, the order of the relevant adjectives is arbitrary.

What matters here is that

→ undergeneration is taken care of if subjectivity only a partial order

→ overgeneration/ANA orders are not discussed. But overgeneration is not as severe a problem as undergeneration (one can always add a constraint)

There are theoretical reasons why this proposal is doubtful

- properties such as [color] or [shape] or [size] are treated as Formal Features (FFs) since they enter into Agree exactly like FFs such as ϕ -features or Q features. However, note that unlike what happens with ϕ -features or Q features, there is no Minimality effect based on [color], no EPP effect whereby [color] is obligatorily spelled-out at some phase, and so on.

Note also that in the absence of subjectivity ranking order is imposed arbitrarily therefore for the sole purposes of Externalization. For Chomsky (2001, 2013 a.o.) this is the thumbprint of an Externalization process surreptitiously imported into Core syntax.

Svenonius (2018), Truswell (2019)

Another option is reducing the functional inventory

- Truswell (2009) offers the conclusion that where an order between two adjectives is strongly preferred, the higher adjective is subsective, while the lower one is intersective
- Svenonius (2008: 38), on the basis of a structure of NP, including a lower nominal class head (*n*) and a higher count head (Sort), concludes that “modification of *n*P is essentially intersective”. Vice versa, “SortP modification occurs in a different way from *n*P modification: it is crucially subsective”.

→ undergeneration taken care of (only a restricted number of orders are enforceable)

→ overgeneration taken care of (ANA orders severely restricted by the lack of possible landing sites)

However,

- Intersectivity and subsectivity, are defined by Kamp and Partee (1995) in terms of the inferences they license. In a strictly modular grammar, we do not expect syntax to encode semantic properties – not any more than phonological ones.
- the example below is naturally interpreted with the first adjective (‘beautiful’) denoting an intersective property (i.e. beautiful as well as a linguist) and the second adjective a subsective one (i.e. ‘good as a linguist’). Therefore the order is intersective > subsective.

(23) It is not true that there are no beautiful good linguists

The minimal(ist) structure of nP

I will suggest partially ordering adjectives without recourse to (more or less) ad hoc functional heads (Manzini 2025a, 2025b). To do so, I need an introduction to the minimal(ist) structure of the nP phase.

The fundamental structure of the Noun Phrase consists of the lexical category N and of its phase head *n*, cf. (a) The nP phase (minus its edges) is closed when the higher phase head is merged, let’s say a *v** head. At every level of the nP structure, there could in principle be one or more modifiers (XP, YP,

etc.) adjoined to it (c). I adopt the view that syntax is ordered by dominance, as implicit in the set notation, and that Linearization is part of EXT.

- (24) a. $\{n, N^{\min/\max}\}$
 b. $v \dots \{n, \{N^{\min/\max}\}\}$
 c. $v \dots \{XP^*, \{n, \{YP^*, N^{\min/\max}\}\}\}$

I propose reinstating the classical labelling of adjunctions as belonging to the same category as the constituent they modify:

- If N is computed as a head, the NP label is assigned to the constituent $\{YP, N\}$ by the head-complement clause of LA, cf. (a).
- The same clause of LA also determines the nP label for the constituent $\{n, NP\}$ cf. (b).
- The crucial step is the labelling of $\{XP, nP\}$, cf. (c). I assume that LA applies when a phase is shipped to the interface (Chomsky's 2013: 43). Therefore, it is possible for it to reflect selectional constraints without this implying a look ahead. The constituent $\{XP, nP\}$ is an nP, not an XP, because of selectional restrictions imposed by D (cf. (re)labeling by selection in Cecchetto and Donati 2015).

- (25) a. $\{_{NP} YP, N^{\min/\max}\}$
 b. $\{_{nP} n, \{_{NP} YP, N^{\min/\max}\}\}$
 c. $\{_{DP} D \{_{nP} XP, \{_{nP} n, \{_{NP} YP, N^{\min/\max}\}\}\}\}$

As for Linearization, given any Merge pair $\{\alpha, \beta\}$, Linearization may in principle yield either precedence order. English adjectives are turned leftward of the projection they modify, yielding the linear order AAN.

- (26) *English AAN*
 $[AP \ [n \ [AP \ N]]]$

The ANA order of Romance adjectives could in principle be derived at Linearization or via amalgamation of the N head into n, with the amalgam pronounced in n (in essence head movement, as in Cinque 1994). I have no evidence one way or the other.

- (27) *Italian ANA*

- a. [AP [*n* [N AP]]]
- b. [AP [N-*n* [AP ~~N~~]]]

Evidently the basic structure of the nP phase makes two adjoined AP slots available (like the intersective/subjective slots of Truswell – or the nP and sortP slots of Svenonius).

DAY 3: PARTIALLY ORDERED ADJECTIVES

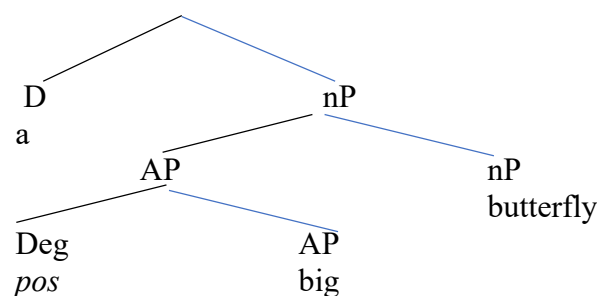
Gradability

Adjectives high in the adjectival hierarchies (evaluative, size, age) are gradable. Adjectives lower in the hierarchies (relational, shape, color) are nongradable:

- (28) a. *That is a more chemical/atomic reaction than this one.
 b. *That is a more purple dress than this one.
 c. *That is a more octagonal table than this one.

Under Kennedy's (1999, 2007) analysis of gradable adjectives, they are modified by a DegP (Corver 1990), whose content is conventionally designated as *pos* in the positive (non-comparative) form.

- (29) a. a big butterfly
 b.



pos introduces a relation between the degree *x* at which the referent of the DP ('a butterfly') has the AP property and the degree *y* at which the standard comparison group ('butterflies' as a default) has the property.

Order is imposed by phase structure

We now need to ask why gradable adjectives appear higher than non-gradable adjectives (to their left), both in English AAN and in Italian ANA. In the kind of syntactic framework adopted here, it is natural to assume that the organizing principle may simply be phase structure.

Gradable adjectives are merged at the edge of nP and non-gradable ones in the complement of *n*.

- (30) a. [_{nP} big [_{nP} *n* [_{NP} black dog]]]]
 b. [_{nP} grosso [_{nP} *n* [_{NP} cane nero]]]]]

As for why a DegP (or gradable AP) should be merged at the edge of nP, the key observation is that Deg introduces a relation between two variables, stating for instance, that the degree of bigness of x ('the butterfly') is greater than (or equal to) the degree of bigness of y ('butterflies' or other).

- it seems natural to connect the positioning of gradable adjectives at the *n* phase edge to the fact that operators introducing variables generally are at the phase edge (in syntax or in LF).
- technically, an AP with a Deg modifier merged at the nP phase edge yields a structure parallel to that obtained when a DP with a wh-determiner merges at the CP edge. The constituents at the nP phase edge is a DegP, in the same way as it is a WhP that we find at the CP phase edge.

- (31) a. [nP [AP/DegP Deg [AP big]] [nP *n* [NP butterfly]]]
 b. [CP [DP_(wh) D_{wh} nP] [CP C ...]

If we push the parallel between wh- and Deg, the latter may be conceived as a Formal Feature of *n* – and therefore act as an Edge Feature determining placement of the gradable adjective at the edge of phase.

Since by hypothesis non gradable adjectives do not have a Deg modifier, they are allowed in the complement of *n*. I assume that they are forced to do so by Economy, this being the default option.

In the same way as under a Svenonius/Truswell reduced functional structure

- ☐ undergeneration is taken care of
- ☐ ANA orders are restricted to a subclass of Adjectives at the left (higher than N)

Lack of order

the important point for present purposes is: what happens to adjectives that are not ordered by

- by the subjectivity relation
- by impoverished functional hierarchies
- by phase structure

E.g., in English, two gradable adjectives or two non-gradable ones are free to occur in any order.

- (32) a. wooden red/red wooden clogs

- b. new big/big new cuts

There are two logically possible accounts:

- Adjectives that are not ordered (by subjectivity) are arbitrarily ordered by syntax (Larson 2021) – but then syntactic order serves only the properties of the PHON interface, without any SEM reflex (the hallmark of an EXT phenomenon)
- Or they are merged as unordered sets

I develop the second option.

Chomsky (2019, 2021, 2024) proposes that Unbounded Unstructured Sequences (UUS) of modifiers are generated by an operation of FormSet (FS). According to Chomsky (2024) “binary FS is distinct from Merge in lacking its special theta-related properties”. Furthermore, “within sentence grammar, sets formed by FS are introduced into derivations in the position of single XP’s”. Chomsky’s statement that “order is imposed in Externalization” implies that Linearization can work with syntactic structures that are not pre-ordered by dominance.

(33) FormSet

Select $X_1, \dots, X_m$ from WorkSpace (WS) and form $Y = \{X_1, \dots, X_m\}$.

- (34) a. $[_{nP} n [_{NP} \{_{AP} \text{wooden, red}\} [_{NP} \text{clogs}]]]$
 b. $[_{nP} \{_{AP} \text{new, big}\} [_{nP} n [_{NP} \text{cuts}]]]$

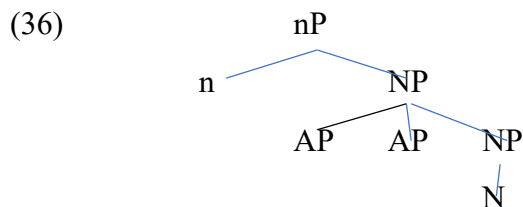
The underlying syntax is the same when surface linear order of modifiers is free. The linear order between the two adjectives is determined by EXT and therefore is expected to be insensitive to semantic classes, though it may be sensitive to phonological properties (e.g. shorter vs. longer adjective, Bosković 2009: 191) or to usage-based considerations (e.g. frequency of occurrence of A with N, Dyer et al. 2023).

Similarly, in the Italian ANA order, two gradable adjectives in prenominal position are unordered with respect to one another. In present terms, they form a two member set merged with nP as a single object, and their precedence order is not fixed by syntax, but only by EXT.

- (35) a. dei grossi nuovi/ nuovi grossi tagli governativi
 some big new/ new big cuts governmental

- b. $[_{nP} \{_{AP} \text{nuovi, grossi}\} [_{nP} \text{tagli} [_{NP} N \dots$

Once linear order is factored in, FormSet structures are equivalent to non-binary branching (n-branching) trees. This kind of structure is explicitly proposed and motivated by Neeleman et al. (2023) for coordinations, including (coordinated) adjectival modifiers.



Intermediate conclusions

- Syntactic objects are only partially (locally) ordered by asymmetric c-command – unless we admit that some orders are arbitrary
- There is no syntactic procedure determining linear order from asymmetric c-command
- Linear order is a property of EXT

DAY 4: PREDICTIONS – FURTHER ISSUES

Coercion

The analysis I am suggesting is much weaker than those I reject – yet it is not empirically void, giving rise to various issues and predictions. I use Italian examples, where by hypothesis, the gradable class is easily isolated by its linear position to the left of N.

Relational adjectives, including nationality ones, are normally postnominal. However, as noted by Svenonius (2008) they can be plied to a meaning whereby ‘Italian’ does not mean ‘from/of Italy’ but rather ‘Italian-like’ – in which case they are gradable. Adding superlative morphology to a nationality adjective forces this second meaning and makes the adjective compatible with prenominal position.

- (37)
- a. un vizio italiano
a defect Italian
 - b. *un italiano vizio
an Italian defect
 - b. un italianissimo vizio
a very Italian defect
 - a'. un genio italiano
a genius Italian
 - b'. *un italiano genio
an Italian genius
 - c'. un italianissimo genio
a very Italian genius

The discussion of origin/nationality adjectives extends to color adjectives that can appear in prenominal position, and correspondingly be associated with Deg modifiers.

- (38)
- a. Ho comprato un cappotto verde/#un verde cappotto
I have bought a coat green/a green coat
 - b. Ho visitato le verdi/verdisime colline della Toscana
I have visited the green/very green hills of Tuscany

In present terms, an adjective in prenominal position in Italian is coerced into gradable meaning. In the case of color adjectives, the intuition of native speakers is that tropes are involved. Thus ‘the green hills’ is truly ‘the greenness of the hills’ (cf. Delfitto 2025, Delfitto and Melloni 2025). Note that Cinque (2010: 72) simply states that the prenominal position of color and other adjectives remains to be understood.

For English, Svenonius (2008) mentions the expectation that *very French* may be merged in a higher position than French. Assuming that value and nationality adjectives are rigidly ordered in English, we expect that adding a Deg modifier to the nationality adjective should allow flexible order.

- (39) a. this is an expensive French wine
 b. # ... a French expensive wine
 c. .. a very French expensive wine

Adjectival and passive participles

Participial adjectives are generally postnominal in Romance (e.g. Abeillé and Godard 1999 on French, Demonte 1999: 189, Bosque 1999: 299-300 on Spanish). However, some prenominal participial adjectives are possible. Bosque (1999) observes that the very same participial adjectives may be unacceptable in prenominal position in different contexts. Traditionally, these lexically identical modifiers are described as having an adjectival vs. passive interpretation.

- (40) a. uno smarrito testimone
 a confused witness
 b. un ombrello smarrito/ *uno smarrito ombrello
 an umbrella lost/ a lost umbrella

What is relevant for present purposes is that the ‘passive’ participle is non-gradable. By contrast, the same participle as a psych predicate can enter comparisons, which I take to be the operational definition of gradability relevant for syntax.

- (41) a. *un ombrello più smarrito del mio
 an umbrella more lost than mine

- b. un testimone più smarrito di me
a witness more lost than me

Open and closed scales

A possibly connected avenue of research has to do with what Kennedy and McNally (2005) call open and closed scales. A property scale can be open (e.g. big, small) or closed (e.g. full, empty or indeed open, closed). Properties on a closed scale do admit some Deg modification, which is however often incompatible with that of open scale predicates. Closed scale predicates are treated by the syntax of Italian as non-gradable, i.e. constrained to postnominal position.

- (42)
- a. a half full/empty cup
 - b. *a half big/small butterfly
 - c. una bottiglia piena/*una piena bottiglia
a bottle full/ a full bottle
 - d. una vittoria piena/una piena vittoria
a victory full/ a full victory

Again, tropes may be involved in the possibility for the same predicates to be prenominal when denoting non-physical attributes. Enjoying a full victory is enjoying ‘the fullness of the victory’ – but of course handing me a full bottle is not handing me ‘#the fullness of the bottle’.

Functional adjectives

Another class of adjectives can be argued to require the same edge of nP positioning as gradable adjectives, but for independent reasons. This is a small class of adjectives, which can only appear prenominally in Italian. An example is *mero* ‘mere’ or *semplice* ‘simple’ which is synonymous of *mero* only in prenominal position. Prenominal *mero/semplice* are focalizers, like their adverbial counterpart *solo* ‘only’.

- (43)
- a. E’ un mero/semplice errore di calcolo
it is a mere/simple error of calculation
‘It is a mere miscalculation’

- b. E' un errore *mero/#semplice di calcolo
it is an error mere/simple of calculation
cf. 'It is a simple/non-complex miscalculation'
- c. E' solo/semplicemente un problema di calcolo
It is only/simply a miscalculation

Focus operators sit at phase edges, as do Wh-operators, Neg operators, i.e. the operators that Chomsky (2013:46) suggests unifying under a F (Force) feature. The connection between these operators and phase edges is provided by the postulate that phase heads host FF probes, including [Q], [neg], [F] that may trigger EPP effects. Overt realizations of operators (Question particles/wh-phrase, Neg clitics/adverbs, etc.) are therefore hosted by phase edges. This standardized picture is sufficient to force focalizer adjectives to be merged at the nP edge.

- (44) a. ... [nP mero [nP problema NP]]
b. ... [nP problema [NP mero N]] →*

Reversing the gradable > non-gradable adjective order in prenominal position in English yields a well-formed reading if the leftmost adjective is focused. In present terms, focusing is construed at the edge of the phasal head n allowing the non-gradable adjective (normally attached to NP) to surface in leftmost position.

- (45) a BLACK big dog

Sardinian

The present distinction between adjectives at the edge and in the complement of the n phase head, predicts that all ANA languages have the same bipartition of adjectival classes as in Italian. So, any language with a different distribution poses a potential problem of undergeneration.

Now, the set of Sardinian pre-N adjectives mentioned by Jones (1993) does not contain the antonym of 'good', i.e. 'bad'. This undermines the idea that the notion of valuation is sufficient to define the prenominal set. Vice versa, in North Italian varieties (Manzini and Savoia 2005) 'big' is excluded from prenominal position when normally inflected, but it is not when associated with special inflectional morphology. This shows that the prenominal set is not necessarily evaluative, since 'big'

retains its size meaning.

- (46) a. na gran/*granda buza (Emilian)
a big/big-fsg pothole
b. na buza *gran/granda
a hole big/big-fsg

Dixon (1977: 20-23) points out that “languages that have only a limited class of adjectives show considerable similarity in the concepts that are expressed through adjectives”. In the sample of languages collected by Dixon, the following adjectives were most like to be included (in decreasing order of frequency): 'large, small, short, long, new, old, bad, good, white, black’.

According to Dixon, “in some languages that have a major class Adjective, a few members of the class [large, small, short, long, new, old, bad, good, white, black] are set off from the rest by virtue of a certain morphological property”. In fact, in Italian, a small group of adjectives have a different inflection in prenominal and in postnominal position. A salient example is *bello* ‘beautiful, nice’ which is never found in its quotation form in prenominal position, while prenominal forms are excluded in postnominal position (Cardinaletti and Giusti 2015, Giusti 2015: 202ff.). Similar data hold of *grande* ‘big, great’ and of *buono* ‘good’ (see above, Bonet 2015 on Spanish).

- (47) a. Vedrai una gran/grande chiesa vuota
you.will.see a big church empty
‘You will see a big empty church’
b. ... una chiesa grande/*gran vuota
a church big empty
c. Cerco un buon/*buono vino locale
I.look.for a good wine local
‘I am looking for a good local wine’
d. ... un vino buono/*buon locale
a wine good local

I would argue that the restricted set of adjectives occurring prenominally in some Italo-Romance varieties does not coincide with value adjectives. Rather, the relevant class may be lexically determined.

Walloon

Walloon is a different matter. Nationality adjectives, as exemplified by Bernstein (1993), form part of a larger class of relational adjectives. As stressed by Marchis Moreno (2018), these relational adjectives share the property of alternating freely with nominal compounds in English or with di/de ('of') phrases in Romance. In English, all three structures freely alternate (compounding, adjectival modification, PP modification).

- (48) a. una ragazza parigina
a girl Parisian
b. *una ragazza Parigi
a girl Paris
c. una ragazza di Parigi
a girl of Paris
- (49) a. a Parisian girl
b. a Paris girl
c. a girl from Paris

According to Harley (2009), compounding instantiates complementation or modification at the root level. Thus, in nurse shoes the modifier N is merged with the root of the modified N, and the final compound is derived via incorporation. For Fabregas (2020) the adjectival suffix is an exponent of the same Case category as the di 'of' head and both are essentially a way of avoiding incorporation (hence compounding).

It is therefore possible to conclude that Walloon individuates a class of relational adjectives, even lower than N modifiers. Therefore, relational adjectives need not be conceived as a cut on the conceptual scale in (50), but can be defined in structural terms.

A further problem: Undergeneration in Italian

Scontras, Manzini and Mazzaggio (2025) run the experiment of Scontras et al. (2017, 2019) on Italian adjectival sequences in the three conditions AAN, ANA and NAA. The experiment simply consists in eliciting native speakers preference for one of the two possible orders of any given pair of adjectives. Scontras et al. find that in English the resulting ranking is predicted by subjectivity (cf.

Larson 2021), measured as the likelihood of faultless disagreement. Subjectivity is as good a predictor of order in Italian ANA, as in English AAN. In the NAA condition, the experiment yields a flattened scale.

Trainin and Shetreet (2021) provide experimental evidence both in production and in comprehension with postnominal sequences involving A_{size} , A_{color} and A_{pattern} in Hebrew. In English they find the preferred order to be Size > Color > Pattern (SCP) in keeping with the prediction of adjectival hierarchies. In Hebrew, they find that two orders are above chance in production, namely N-Size-Color-Pattern and N-Color-Size-Pattern. The mirror order (N-PCS) is at chance level, on a par with the N-CPS order. The remaining orders are below chance.

The data as to the absence of a discernible order in post-N adjectives in Italian are not in question – cf. Cinque (2010: 74). The pattern predicted for the three adjectives considered in Cinque (2025) in Italian postnominal position is in (a); in reality, all of the logically possible orders are acceptable in Italian – including (f) that the grammar of Cinque (2025) cannot generate.

- | | | | |
|------|----|----------------------------|---------|
| (50) | a. | un cane nero grosso brutto | N-1-2-3 |
| | | a dog black big ugly | |
| | b. | un cane brutto grosso nero | N-3-2-1 |
| | | a dog ugly big black | |
| | c. | un cane grosso nero brutto | N-2-1-3 |
| | | a dog big black ugly | |
| | d. | un cane nero brutto grosso | N-1-3-2 |
| | | a dog black ugly big | |
| | e. | un cane brutto nero grosso | N-3-1-2 |
| | | a dog ugly black big | |
| | f. | un cane grosso brutto nero | N-2-3-1 |
| | | a dog big ugly black | |

The logic of Cinque's (2005, 2025) system prevents him from saying that the various post-N orders of Italian (Hebrew etc.) are simply the result of the application of different combinations of movement. Each language must be associated with a unique parametrization (i.e. leftward movement) pattern or else all languages would be associated with all (derived) word orders.

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Overgeneration in English

Let us grant to Cinque that by having recourse to reduced RCs, the problem of undergeneration in Italian post-N position is overcome.

In English, in Cinque's terms, English has the same structure of External Merge as Italian. Now, if postnominal adjectives in Italian are easily reordered using the reduced RC strategy, we predict a similar ease of reordering in prenominal English examples, given that English also has reduced RCs. This is not possible in English, except under special conditions of Focus, while no such conditions attach to Italian.

In short, I see no way of predicting order flexibility in NAA but not in AAN since ultimately these reduce to the same structure (via movement or lack thereof).

Does the same meaning always map to the same structure?

Cinque (2010) is constrained by two postulates of his cartographic model:

- Structures of first merge are universal; but more importantly
- The same meaning always corresponds to the same structure (Uniformity, cf. Culicover and Jackendoff 2005). For Cinque, reduced RCs are mapped to a predicative semantics (intersective, restrictive, stage level interpretations of the adjectival modifiers) as opposed the non-predicative semantics of bare APs (subsective, non-restrictive, individual level). Therefore English, which displays predicate interpretations, must have reduced RCs.

The facts are that

- reduced RCs can be a source of both meanings. For, Chinese *de*, typically embeds core non-predicative adjectives (e.g. former, see Paul 2012: 103 for Chinese examples involving *de*).
- direct modification APs can be a source of both meanings as well – see below.

Let us consider Italian. Cinque's prediction is that prenominal adjectives can only have a non-predicative semantics – since the structures that are responsible for predicative semantics, namely reduced RCs are obligatorily postnominal.

Cinque argues that prenominal adjectives are non-restrictive. But plenty of adjectives which normally occur in prenominal position in Italian clearly restrict the meaning of the noun they modify.

- (54) a. Ho smarrito un piccolo/grande cane nero
I-have lost a small/big dog black
b. I grandi patrimoni vanno tassati, quelli piccoli no
the big holdings must be taxed, those small not

Delfitto (2025) seeks to account for prenominal adjectives which Cinque (2010) as non-restrictive in terms of tropes, so that the reading of (b) is something like “those boring things that are the lectures of Rossi”.

- (55) a. le lezioni noiose di Rossi
the lectures boring of Rossi
b. le noiose lezioni di Rossi
the boring lectures of Rossi

Cinque argues that prenominal adjectives in Italian are restricted to the individual level reading. But several participial adjectives, which are obviously stage-level, can occur prenominally.

- (56) a. la sorridente signora alla tua destra
‘the smiling woman on your right’
b. lo smarrito testimone della difesa
the confused witness of the defence

Cinque’s claim that the prenominal position in Italian can only host non-intersective adjectives (see Kamp and Partee 1995) does not seem to be correct either. For instance, *stupendo ballerino* ‘beautiful dancer’ is ambiguous exactly as its English counterpart, meaning that I saw somebody who is beautiful besides being a dancer – or somebody who dances beautifully.

- (57) a. Ho visto uno stupendo ballerino, biondo, alto, muscoloso (anche se non bravo)
I.have seen a beautiful dancer: blond, tall, muscular (though not good)
b. Ho visto uno stupendo ballerino, tecnicamente perfetto (anche se non bello)
I.have seen a beautiful dancer: technically perfect (though not good looking)

In conclusion, syntactic properties of structure (APs vs. RCs) are dissociated from semantic properties (predicative vs. non-predicative interpretation). Hence the presence of predicative interpretations of adjectives in English does not force the presence of reduced RCs in that language.

Hence, we can tentatively conclude:

- Reduced RC adjectives – free order (Italian)
- No reduced RC adjectives – no free order (English)

DAY 5: UNORDERED ADJECTIVES

What are reduced RCs?

Cinque (2010ff.) does not explicitly illustrate the internal structure of a reduced relative clause. In Italian, participial adjectives would be the prototypical example of reduced clausal structures. In Kayne (1994), Participial relatives are analyzed as involving a relative operator which is licensed in the specifier position of a functional projection headed by a complementizer-like functional head. the functional projection hosting the relative operator is identified with CP; The only peculiarity of participial clauses under this view is that they do not contain a tense node.

(58) il [ragazzo] [_{FP} Op_i F° [t_i arrivato tardi]]
the boy arrived late

- An obvious problem of Kayne's proposal is that it does not explain why overt complementizers are systematically banned from participial relatives.
- Another problem with assuming a full-fledged structure for participial relatives is that it does not explain why these relatives are only possible with unaccusatives and passives (in other words the subject of the participial predication must be a promoted IA, cf. Burzio 1986).

In Burzio's (1986:150) analysis, a reduced relative involves a null PRO – the unaccusative generalization is not explained either.

(59) il ragazzo [PRO arrivato tardi]

Recently Cecchetto and Donati (2024) propose an analysis within their relabeling model. Movement of NP provides the external determiner with the NP it selects and "relabels" the structure, -- i.e. in [NP VP] structure NP projects.

(60) Conosco [_{DP} il [_{NP} ragazzo [_{VP} rimproverato ~~ragazzo~~]]]
I know the boy reproached
'I know the boy reproached'

- The landing site of NP movement is a position in the VP periphery in reduced relatives, while

it is in the CP area in full relatives

- Reduced relatives never contain *wh*-determiners such as ‘which’ or the complementizer ‘che’, which can be analyzed as a *wh*-determiner
- An EA is not compatible with relabeling – if *v* does not provide the label, the configuration for the Agent theta role assignment is not created.

Linkers

Linker embedded adjectives contrast with non-Linker embedded adjectives wrt to

- pre-N vs. post-N position,
- internal order (or not) of the adjectival sequence,
- availability with all or with just a subset of adjectives.

Greek: post-N adjectives must be embedded under a Lkr if the NP is definite. Alexiadou and Wilder (1998), Campos and Stavrou (2005) agree that no order effects are observed with post-N adjectives.

- (61) a. to vivlio to kokkino to megalo/to megalo to kokkino *Greek*
 the book LKR red LKR big/ LKR big LKR red
 b. ena vivlio kokkino megalo/megalo kokkino
 a book red big/ big red

Pre-N adjective can either be embedded under a Lkr or not. Order effects are observed with adjectives not embedded under Lkrs, but at least according to Campos and Stavrou (2005) not with those embedded under Lkrs.

- (62) a. to megalo to kokkino/ to kokkino to megalo to vivlio *Greek*
 LKR big LKR red/ LKR red LKR big the book
 b. ena megalo kokkino/ #kokkino megalo vivlio
 a big red/ red big book

Persian: post-N modifiers are embedded under Lkrs (the so-called *ezafe*), but not pre-N material, including determiners and quantifiers, but also superlatives or adjectives in the literary style (Khanemuyipour 2014). The *ezafe*, though phonologically enclitic, forms a constituent with the modifier that follows it (Larson and Yamakido 2008:60, Philip 2012: 37-38).

- (63) a. *pre-N determiners vs. post-N modifiers* *Persian*
 in do ketaab-e qatur-e jaaleb
 this two book-LKR thick-LKR interesting
 ‘these two interesting thick books’
- b. *pre-N superlatives vs. Post-N comparatives*
 bad-tarin ketaab a’. ketaab-e bad(-tar)
 bad-SUPER. book book-LKR bad-COMP.
 ‘the worst book’ ‘bad/worse book’
- c. *pre-N adjectives (in literary style) vs. post-N adjectives*
 bichaare xalq b’. xalq-e bichaare
 poor/pitiable people people-LKR poor/pitiable
 ‘poor people’

Albanian: adjectives are typically post-N, but they may be preposed in some case (Campos 2009). The linker is obligatory both in post-N and in pre-N position – yet different allomorphs are involved.

- (64) a. vajz-at e mir-a
 girl-PL.DEF.NOM LKR.NOM good-PL
 ‘the good girls’
- b. të mir-at vajz-a
 LKR good- PL.DEF.NOM girl-PL

In this sample of languages (Balkan and Iranian), both pre-N and post-N modifiers can present the Lkr (Albanian) or the post-N modifier can present it to the exclusion of the pre-N modifier (Persian, Greek) – but not the other way round.

Lkr structures

Analyses of Lkr structures include at least the following.

- (i) N-N sensitive analyses: identity avoidance (Persian, Ghomeshi 1997, Richards 2010); Case assigner (again Persian, Larson & Yamakido 2008, Larson & Samiian 2021);
- (ii) Predication analyses: copula (den Dikken and Singhapreecha 2004, den Dikken 2006; Balkan languages, Campos and Stavrou 2005, Campos 2009); subject of predication/ subject clitic

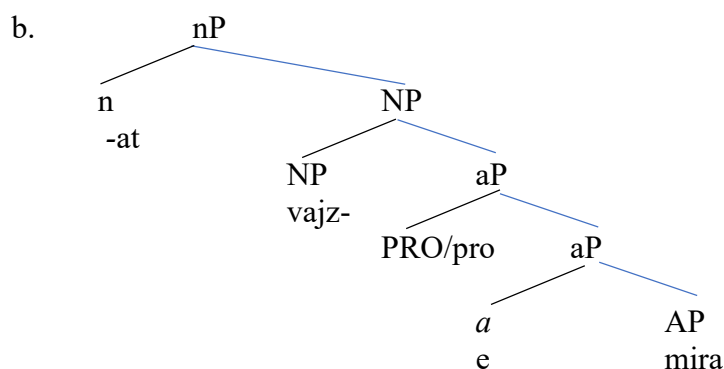
(Balkan languages, Indo-Iranian languages Franco, Manzini & Savoia 2015, Manzini, Savoia and Franco 2015); reduced relative clause (RC) pronoun (Greek a.o., Alexiadou 2014)

- (iii) Agr analyses: Agree probes (Iranian, Toosarvandani and van Urk 2014); cartographic heads (Persian, Kahnemuyipour 2014ff.)

Following Franco Manzini and Savoia (2015):

- the Lkr is a clitic -- hence it merges with the phase head (Roberts 2010), *a* for adjectives
- the clitic licenses an empty category PRO/pro (Jaeggli 1981, Sportiche 1996).
- PRO/pro is controlled by the superordinate D/n

- (65) a. vajz-at e mir-a
 girl-PL.DEF.NOM LKR.NOM good-PL
 ‘the good girls’



Reduced relatives = Linker structures

Following standard practice, assume that there is a phase head *a* associated with the lexical head A. Assume further that *a* can in principle be defective (a) or a phase head proper (b). The phase head introduced an argument notated as *nP* in (b).

- (66) a. [_{aP} *a* [AP]]
 b. [_{aP} *nP* [_{aP} *a* [AP]]]

What is *nP* in (66b)?

- A controlled empty pronoun (Franco, Manzini and Savoia Linker structure – but also small clause analysis à la Burzio)

(67) [DP il [nP cane [aP PRO grosso]]]

- An actual lexical N/n ‘relabeling’ the structure as nominal (Cecchetto and Donati)

(68) [DP il [nP cane [aP grosso]]]

- An NP/nP raised from a small clause structure (IM as in the ‘raising’ analysis of relative clauses, cf. Kayne 1994, but without unmotivated empty functional structure)

(69) [DP il [nP cane [aP ~~eane~~ [grosso]]]

- A NP/nP undergoing Copy (control) with an identical head of DP (as in matching analyses of relative clauses, and in control analysis of adjectival structures/small clauses). Under the Copy analysis of control (Chomsky 2021) this structure supersedes the PRO structure.

(70) [DP il [nP cane [aP cane [grosso]]] Copy <cane, ~~eane~~>

Whatever structure turns out to be correct, I suggest reduced RCs be identified with phasal aPs – while direct modification APs are identified with non-phasal ones.

The derivation whereby gradable aPs must be positioned at the edge of nP holds for non-phasal adjectives. Phasal gradable adjective avoid placement at the edge of nP, given the opacity of the structure.

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