

CHOOSE ONE: HEAD OR PHRASAL MOVEMENT IN THE SAME DOMAIN

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Cross-linguistic and language internal word order variations are often analysed within generative syntax as instances of syntactic movement of lexical categories. This is particularly true for verbs. For instance, it is proposed that in Italian and French the head verb undergoes movement, while in Malagasy it is the VP as a whole that undergoes movement. In this paper, we attempt to answer two main theoretical questions. First, do we find the same variation within the DP? That is, can head movement of the N as well as XP movement of the NP account for DP internal word order variations? Second, are there languages that exhibit a choice between head movement and phrasal movement within the same domain? That is, can we find a language that exhibits V and VP movement within the IP or a language that exhibits N and NP movement within DP?

In this paper, we show that head movement of N as well as NP movement are necessary to account for word order variations in DPs. Moreover, we provide evidence that there are indeed languages where the syntax can choose between moving the targeted head or a phrase containing it within the same domain. Here, we put forward two important restrictions on movement. (A) The type of phrasal movement available is restricted to roll-up movement. That is, only phrases that are on the spine of the structure may move – no movement from left branches is allowed. (B) The choice between head movement and phrasal movement of the targeted category can only be made once per domain. That is, within a domain, we encounter either head movement or phrasal movement – not both. Evidence for this proposal comes from movement in Romanian DPs and Malagasy I/VPs. We demonstrate that the present analysis is best equipped to account for the attested surface word orders and their corresponding interpretations, while still blocking unattested word order – interpretation pairs.

1. Nominal movement in the Romanian DP

We begin with a brief overview of the data that suggest nominal movement in Romanian DPs and the proposals accounting for them. In the literature on Romanian DPs, certain word order variations are analysed as DP internal nominal movement. Furthermore, it is proposed that two landing sites are available for nominal movement in the DP: to the left edge of the DP in constructions with the definite article suffix and to an intermediate, lower, position in all DPs. We will refer to the former movement as movement in the higher domain and to the latter as movement in the lower domain. While it is widely accepted in the literature that movement in the higher domain is head

movement of N^0 to D^0 , it is still debated whether movement in the lower domain is head movement or phrasal movement. As the present paper attempts to determine if languages allow head and phrasal movement in the same domain, our investigation centers on movement in the lower domain. Still, movement in the higher domain will be considered, albeit in less detail.

Evidence for nominal movement in the higher domain of DPs comes from word order variations between DPs with an overt definite article suffix, as in (1a) and DPs where the definite article suffix is absent, as in (1b). In (1a), the noun surfaces in DP-initial position and precedes the demonstrative and the cardinal, while in (1b) the noun follows the demonstrative and the cardinal.¹ It is widely accepted that the surface position of the noun in (1a) results from head movement of N^0 to D^0 , given that the complement of the noun (and any modifiers) stay behind. Head movement of N^0 to D^0 is proposed by Dobrovie-Sorin (1987), Grosu (1988, 1994), Cornilescu (1992, 1995), Giusti (1991, 1993, 1995), Dimitrova-Vulchanova and Giusti (1998) and Ungureanu (2004, 2006).

- (1) a. copii_i -i acestia trei t_i ai Mariei
 children-the these three of Mary
 ‘these three children of Mary’
- b. acesti trei copii ai Mariei
 these three children of Mary

In the lower domain of DPs, nominal movement targets an intermediate position that is below the left edge of the DP and demonstratives. Here, movement is most easily observed in non-definite article constructions that do not exhibit noun movement to DP-initial position. One type of data that suggests noun movement in the lower domain involves discontinuous constituencies as in (2a), where the AP intervenes between the noun and its complement.

- (2) a. o/această poză (foarte) frecventă a Madonei
 a/this picture (very) frequent of Madonna
 ‘a/this very frequent picture of Mary’
- b. o/această (foarte) frecventă poză a Madonei
 a/this (very) frequent picture of Madonna
 ‘a/this very frequent picture of Mary’

Assuming that the noun and its complement are merged as sisters, the surface word order in (2a) must be derived by movement. Based on examples like (2a) and additional observations on the sequencing of APs, Cinque (1994) proposes that the word order in (2a) is derived from that in (2b) by obligatory head movement of the noun to the head of an intermediate functional projection (say XP) that is higher than the position in which the AP is merged. That is, the

¹ The examples in (1) have the same meaning. Similar data are discussed in section 3.4.

adjective is merged to the left of the noun and the noun head moves leftwards to X^0 , thus bypassing the AP.² Similar accounts positing intermediate head movement of the noun have been proposed for other Romance languages by Bernstein (1991, 1993), Cinque (1994, 1996), Cornilescu (1992, 1995), Giusti (1993, 1995, 2002), Valois (1991) and Ungureanu (2004, 2006). In more recent proposals, Cinque (2000, 2003a, 2004, 2005) reanalyzes head movement as phrasal movement. Under this type of an account, the word order in (2a) should be derived by remnant NP movement, where the complement of the noun moves out of the NP to a position below the merged position of the AP and then the remnant NP moves to the left of the adjective. It is this issue of X^0 versus XP movement that is at the center of the present paper.

A second type of DP that is taken to suggest nominal movement in the lower domain involves APs that follow the complement of the noun, as in (3). Based on the word order in (3) alone, there is no need to posit N head movement; rather, two alternative accounts emerge. Either the AP is merged to the left of the noun and the (entire) NP undergoes leftward movement to a position that is higher than the merged site of the AP; or, the AP is adjoined to the right of the NP. Phrasal movement is proposed by Cinque (2000, 2003a, 2004, 2005) and right adjunction is proposed by Ungureanu (2005, 2006).

- (3) ?o poză a Madonei (foarte) **frecventă**
 a picture of Madonna (very) frequent
 'a very frequent picture of Mary'

The word order variation in (2) and (3) should be ideally accounted for by a unified movement analysis. Two such proposals are available. A head movement account is proposed in Ungureanu (2006), where (2) is derived by head movement and (3) by right adjunction of the APs. A phrasal movement account is proposed by Cinque (2004), where (2) and (3) are derived by NP movement. Other recent accounts that propose NP movement, include Cinque (2000, 2003a, 2005) and Shlonsky (2004).

2. Analyses of movement in the lower domain

In the previous section, we showed that Romanian APs can surface in two postnominal positions. Crucially, there is a one to one correlation between the position of APs and their scope interpretations, as discussed in Ungureanu (2005, 2006), where the scope directions of APs are determined by a truth value judgement test, which considers DPs with a "picture noun" that takes a complement and two scope bearing adjectives. Two assumptions are made here: APs semantically compose with their sisters and APs are interpreted in their

² While the noun can bypass APs that are generated in the lower domain of the DP, it can not bypass APs that are generated in the higher domain of the DP. For a more in-depth description and discussion on the difference between APs that surface prenominaly and APs that surface postnominaly see Cornilescu (1992, 1995), Ungureanu (2006).

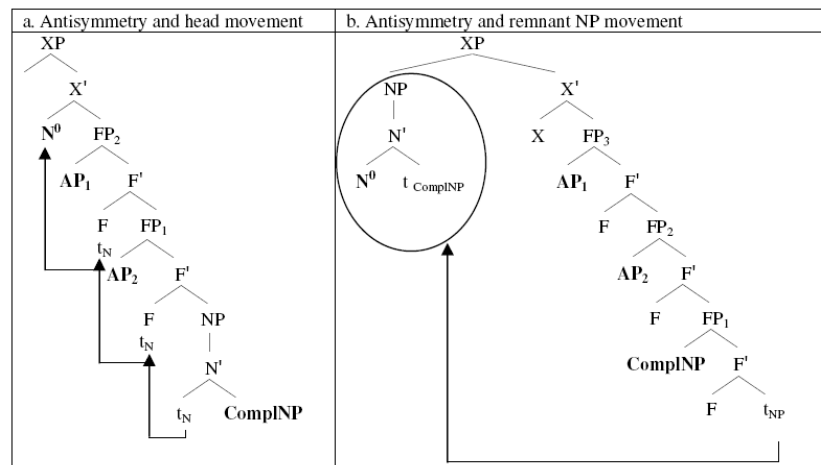
underlying position, as proposed by Sternfeld (2003). Under these assumptions, the interpretations of APs indicate their (merged) structural position, which helps us determine the derivations of the word order scope interpretation pairs. The test found that when APs intervene between the noun and its complement they exhibit a left to right scope interpretation; and, when the APs follow the complement of the noun, they exhibit a right to left scope interpretation.

In this section, we show that the attested word order scope correlations can be derived either by a phrasal movement account and an antisymmetric structure, as proposed by Kayne (1994), where APs are generated to the left of NP, or by an N head movement account and a symmetric structure, where APs can be generated to the left or to the right of NP. However, in section 2.3 we show that both accounts also predict unattested word order scope pairs .

2.1. Possible Derivations for [N AP₁ AP₂ Compl]

The left to right scope interpretation of the [N AP₁ AP₂ Compl] sequence is consistent with the structures in (4) where AP₁ is generated higher than AP₂. Moreover, the postnominal surface position of the APs suggests noun movement. Either N head moves past the APs, as in (4a), or the NP undergoes remnant movement, as in (4b). In (4b), Compl moves out of the NP to Spec/FP, a position below the two APs, and then the remnant NP moves to Spec/XP.³ Thus, the [N AP₁ AP₂ Compl] sequence and its left to right scope interpretation can be derived by N head movement or by remnant NP movement.

(4)

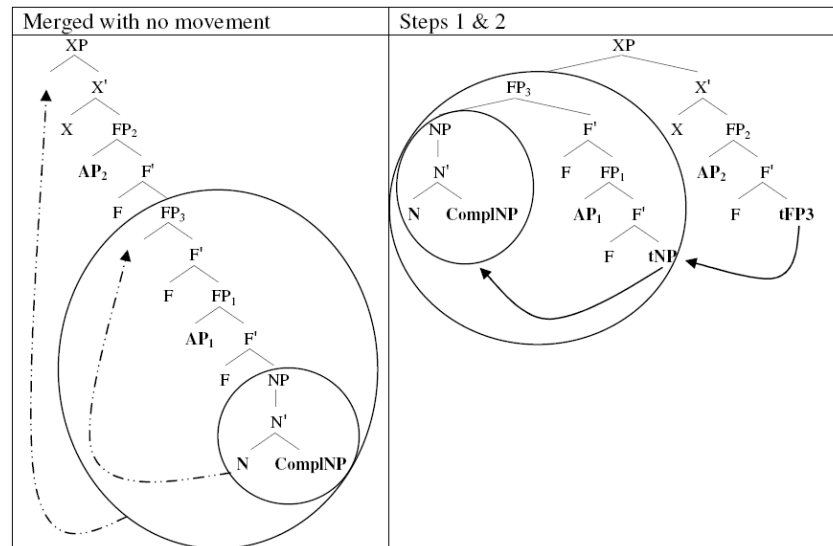


³ The surface order where APs intervene between the noun and its complement can also be obtained by positing that APs are generated to the right of the NP and the complement phrase moves to the right of the APs. Crucially, this derivation would predict the opposite scope for the APs – a word order interpretation that is unattested.

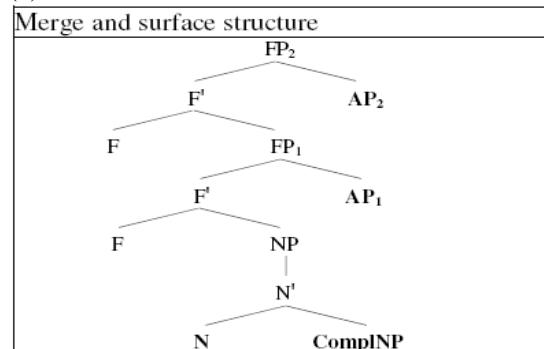
2.2 Possible Derivations for [N COMPL AP AP]

The right to left scope of the [N Compl AP₁ AP₂] sequence suggests that AP₁ is merged below AP₂. This word order interpretation pair can be captured either by the antisymmetric or the symmetric structures in (5) and (6) respectively. In (5), the APs are generated to the left of NP and AP₂ has scope over AP₁, since it is merged above it. The word order is derived by movement of the NP to a position above AP₁ but below AP₂ and subsequent movement of the functional phrase that contains NP and AP₁ to Spec/XP. In (6), the word order – interpretation facts are captured by the merged structure, where the APs are merged to the right of the NP and AP₁ is generated below AP₂.

(5)



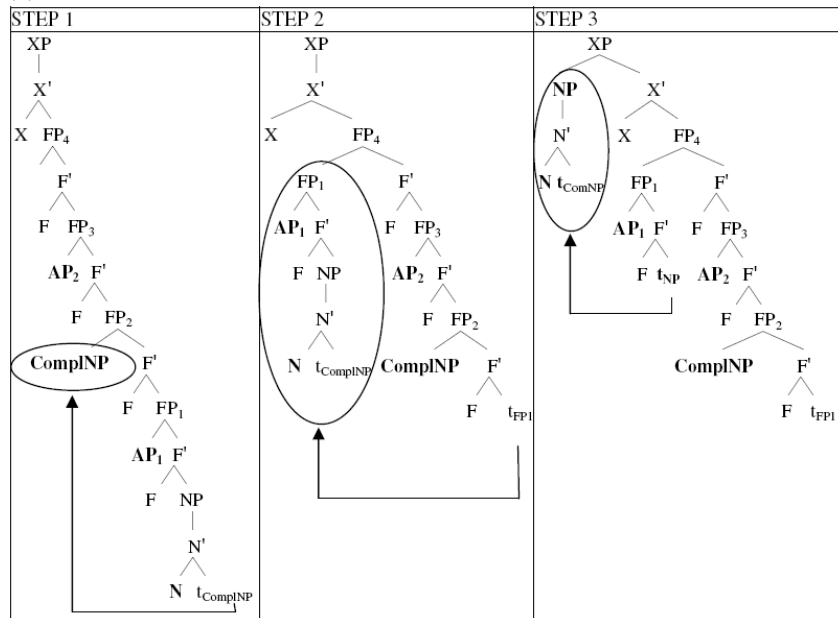
(6)



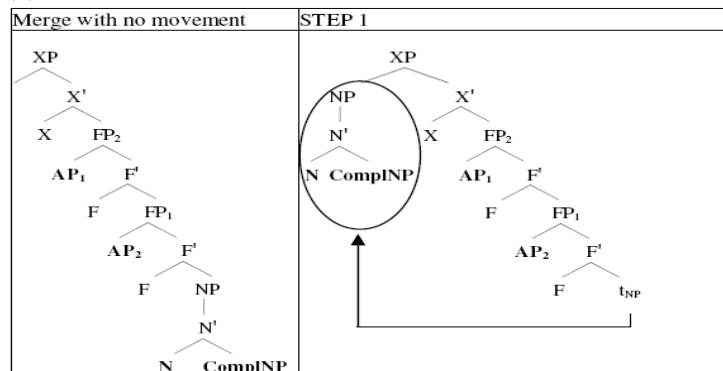
2.3 Possible derivations for unattested word order – scope pairs

Although both proposals presented above can derive the attested data, they are not sufficiently constrained, since the same types of movement used to derive the attested word order – interpretation pairs also derive unattested ones. The phrasal movement account generates both word orders under discussion with the opposite, unattested, scope. In (7), merger of AP₂ above AP₁ and remnant NP movement result in [N AP₁ AP₂ Compl] with right to left scope. In (8), [N Compl AP₁ AP₂] with left to right scope is derived by moving NP to Spec/XP.

(7)

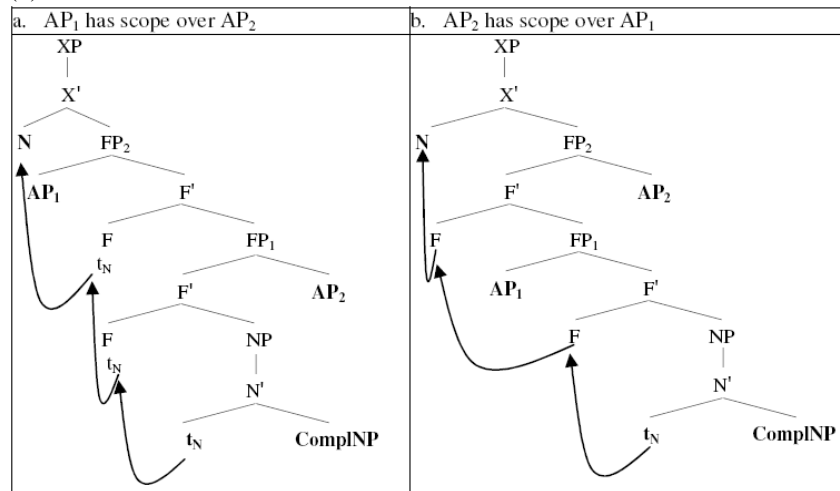


(8)



Let us now consider the account that posits N head movement and a symmetric generation of APs. In (9), the possibility of adjoining APs to the left and to the right of NP in conjunction with N head movement predicts the [N AP₁ Compl AP₂] sequence with bidirectional scope. Crucially, this word order is not attested in Romanian, irrespective of the scope direction, as shown by the ungrammaticality of (10) below.⁴⁵

(9)



- (10) *o **poză** *frecventă* **a** **Madonei** *unică*
 a picture frequent of Madonna unique
 ‘a frequent unique/unique frequent picture of Madonna’

In this section we considered two different accounts on nominal movement in the lower domain of Romanian DPs: a XP/NP movement account and a X^0/N^0 movement account. These proposals also differ in the merger sites of APs. Under the former account APs are left adjoined, while under the latter APs can be left or to the right adjoined. Crucially, both accounts also generate unattested

⁴ For the purposes of this paper we ignore the *N de N* sequences as in (i) as it is not clear that they behave structurally as a noun and its complement. Rather, it is possible that *N de N* are compounds that involve adjunction at different points in the derivation, including late adjunction.

- (i) față (albă) de masă (murdară)
 face (white) of table (dirty)
 ‘(white dirty) table cloth’

⁵ To block the unattested *[N AP ComplNP AP] word order, Ungureanu (2006) stipulates that APs must be consistently generated either on the left **or** on the right of NP, but not on both sides.

data. This suggests that the two accounts are not sufficiently constrained, and that Romanian DPs cannot be accounted for by proposing only phrasal movement or only N head movement. Next, we show that nominal movement in the lower domain can be either head movement or phrasal movement, but not both. The unattested data are blocked by constraining phrasal movement to roll-up movement, by assuming an antisymmetric structure and by limiting the choice between head movement and phrasal movement to one time per domain.

3. Head movement or Phrasal movement

In this section, we present an account for nominal movement in the lower domain of the DP. The table in (11) summarises the attested word order – scope correlations that our account derives as well as the unattested word order pairs that our account blocks. We propose an antisymmetric structure, where APs are adjoined to the left of NP. The [N AP AP Compl] sequence and its corresponding interpretation are derived by head movement of the noun. The [N Compl AP AP] sequence and its corresponding interpretation are derived by phrasal movement. We also show that this account can derive the attested word order – scope pairs and block the unattested ones, provided that the following two restrictions on movement hold. (A) Phrasal movement is restricted to roll-up movement. (B) The choice between head movement and phrasal movement is only made once per domain/phase.

(11)

surface word order	scope interpretation
[N AP₁ AP₂ Compl]	AP ₁ has scope over AP ₂
	*AP ₂ has scope over AP ₁
[N Compl AP₁ AP₂]	*AP ₁ has scope over AP ₂
	AP ₂ has scope over AP ₁
*[N AP₁ Compl AP₂]	*AP ₁ has scope over AP ₂
	*AP ₂ has scope over AP ₁

3.1 Antisymmetric AP attachment

As we saw in the previous section, a symmetric structural account for the merging of APs in conjunction with head movement of N generates the word order [N AP Compl AP], which is unattested irrespective of the scope direction. Thus, to constrain the derivational options so as to block the unattested word order, a reanalysis of the data is necessary.

If we are to abandon head movement of N in favour of phrasal movement, the system still overgenerates the unattested [N Compl AP AP] word order with a left to right scope (and possibly the [N AP Compl AP] word order), as previously illustrated in (8). As Ungureanu (2006) shows, the data discussed here are not amenable to an account that excludes head movement of N. Whether we adopt the right adjunction theory or the antisymmetric theory, NP phrasal movement is not sufficient to account for the attested data while also

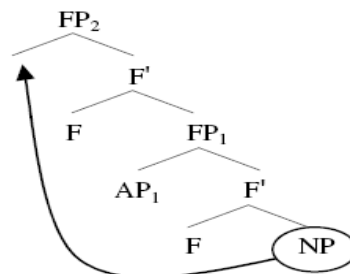
blocking the unattested word order – scope pairs. It follows that to block the unattested data we must propose an antisymmetric structure, where APs are only generated to the left of NP and the surface orders are obtained only by head movement of N. This account successfully blocks the unattested [N Compl AP AP] word order with a left to right scope, the [N AP AP Compl] word order with a right to left scope and the [N AP Compl AP] word order. However, this account fails to generate the attested [N Compl AP AP] word order with a right to left scope interpretation, since it does not allow NP movement. A solution to the present conundrum is to maintain the antisymmetric adjunction of APs, but to also allow phrasal movement in addition to head movement of N. Of course, such a proposal would be required to constrain phrasal movement substantially in order to block the unattested data. In the next section, we show that by proposing a very restricted type of phrasal movement, roll-up phrasal movement, we can derive the [N Compl AP AP] word order and its attested interpretation while still blocking the unattested interpretation. We will later show that, the system we propose only permits one type of movement within a domain – head movement or roll-up movement, but not both.

3.2 Roll-up Phrasal movement

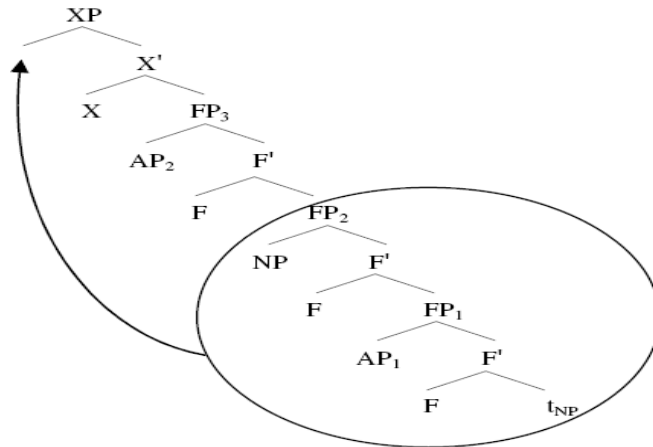
In order to create an account that generates the wanted structures and excludes the unwanted structures, we have to assume a version of phrasal movement that is quite restricted. Pearson (2001) proposes that movement of a projection of the main category of a phrase (verbal within VPs, nominal within NPs) is restricted in the same ways that head movement is restricted. Iterative head movement within an extended projection is forced by the means of feature-triggered movement that creates stepwise movement. We assume that roll-up movement precedes similarly with a feature triggering movement of the relevant projection into the Spec position. To make the structure as simple as possible, we will assume that this movement will always proceed from complement position to a Spec position that skips at most one Spec position (this is reminiscent of Chomsky's (1995: 184-186) extension of a minimal domain to contain two Spec positions). As the structures below show, roll-up movement will have the effect of reversing the order of the constituents. With the first movement, one phrase, NP, will leap-frog over another phrase, AP₁. In the next step, those two phrases, NP AP₁, will leap-frog over another phrase, AP₂.

(12) a. AP₂ AP₁ NP → NP AP₁ AP₂

b. AP₁ NP → NP AP₁



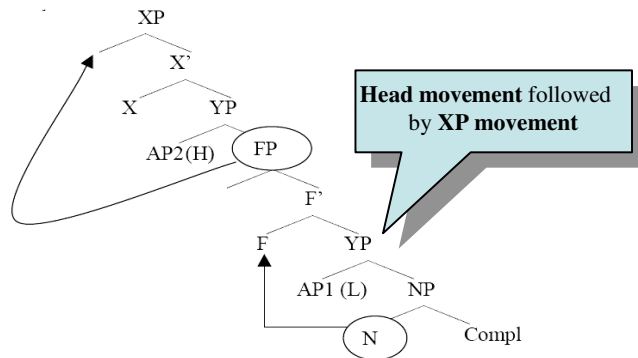
c. AP₂ NP AP₁ → NP AP₁ AP₂

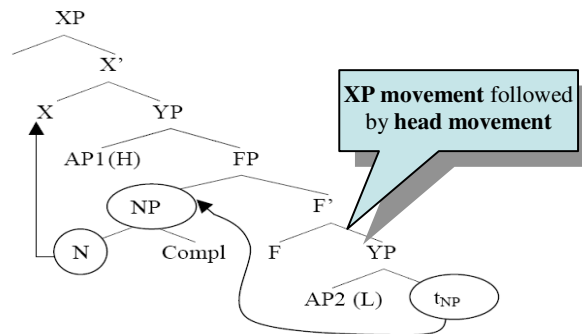


3.3 Head movement OR roll-up movement – not both

The system proposed thus far successfully derives the [N AP AP Compl] and the [N Compl AP AP] word orders with their respective attested scope interpretations, while blocking the unattested interpretations of these word orders. However, if both head movement and XP movement are possible, we still derive the unattested [N AP Compl AP] word order, as shown by the derivations in (13) and (14) below.

(13) *N AP_{1L} Compl AP_{2H}



(14) *N AP1_H Compl AP2_L

The ungrammaticality of the word order and scope interpretations obtained by the derivations in (13) and (14) suggests that the syntax can only choose one type of movement. Either it chooses to move the N head or it chooses to move the NP by means of roll-up movement, but it cannot perform both types of movement. Thus, if the system is constrained such that it can only choose one type of movement, head movement or roll-up phrasal movement, the attested word orders and their corresponding scope interpretations can be derived while the unattested pairs are successfully blocked. At this point we can account for the word order and scope interpretations of the lower domain of the Romanian DP. What remains to be established is whether the restriction on only one type of nominal movement, head movement or phrasal movement, applies in the entire DP or only in the lower domain of the DP.

3.4 Restrictions and Phases

The last step in our analysis of nominal movement in the Romanian DPs consists of determining the domain to which the restrictions on nominal movement apply. Here, we show that the “only one type of movement - head or phrasal” restriction applies to the lower domain and not to the DP as a whole. Specifically, we show that roll-up movement in the lower domain can be followed by head movement in the higher domain.

In section 1, we showed that Romanian also exhibits nominal movement in the higher domain of the DP and that this movement is generally analyzed as N^0 to D^0 head movement. Specifically, we showed that in DPs that have an overt definite article suffix, the noun moves to DP initial position and serves as host for the definite suffix, as in (15a) below. Here, noun movement is suggested by the fact that, on its way to DP initial position, the noun bypasses the demonstrative. In (15a), N occurs DP initially, it bears the definite article suffix and precedes the demonstrative. Unless N^0 moves to D^0 , it cannot precede the demonstrative, it can only follow it, as in (15b, c). Moreover, only the noun can move to DP initial position, while its complement and modifiers stay behind, as

illustrated by the ungrammaticality of (15d). These data suggest that nominal movement in the higher domain is in fact head movement of N.

- (15) a. poz **-a** aceasta a Madonei foarte frecventă
 picture-the this of Madonna very frequent
 ‘this very frequent picture of Madonna’
- b. *poză aceasta a Madonei foarte frecventă
 picture this of Madonna very frequent
- c. această poză a Madonei foarte frecventă
 this picture of Madonna very frequent
 ‘this very frequent picture of Madonna’
- d. *poz **-a** Madonei foarte frecventă aceasta
 picture-the Madonna very frequent this

Particularly relevant to the present proposal is the data in (15a), where the AP follows the complement of the noun. According to our account, this AP position is derived by roll-up phrasal movement. Crucially, here, the noun surfaces in DP initial position, bears the definite article and precedes the demonstrative. If the DP initial position of the noun in (15a) is derived by N head movement, it means that roll-up phrasal movement in the lower domain can be followed by N head movement in the higher domain. Thus, the constraint on only one type of movement – head or phrasal – does not apply to the DP as a whole but only to the lower domain. In the next section, we will see that Malagasy, another language for which roll-up movement is proposed, also shows roll-up movement in one domain followed by head movement in another domain.

4. Crosslinguistic support

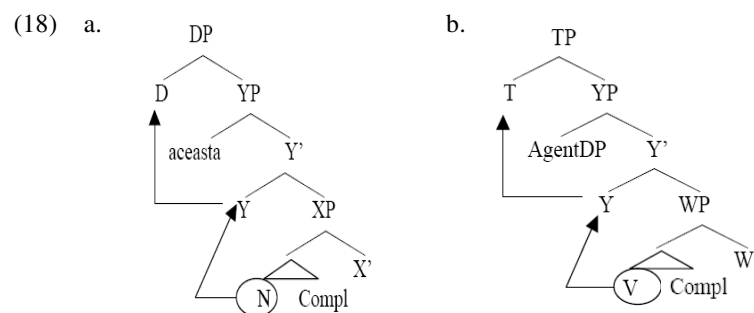
Roll-up movement of the type we have seen for the lower domain of Romanian DPs has also been proposed to account for the word order within VPs in Malagasy, an Austronesian language spoken in Madagascar. In fact, some of the earliest proposals for roll-up and remnant movement have appeared in accounts for Malagasy adverb ordering and the direction of object shift (Rackowski 1998, Pearson 2000). Similarly to the adjective order in Romanian DPs, the adverb order in Malagasy VPs suggests a roll-up account (in an anti-symmetric view of phrase structure). Below we see an example where a higher adverb, *foana* ‘always’, follows a lower adverb, *tsara* ‘good’.

- (16) Manasa ny lamba tsara foana ny lehilahy
 PRES.wash DET clothes well always DET man
 ‘The man always washes the clothes well.’

Further, it has been proposed that VP fronting over the subject accounts for the VOS word order of Malagasy. A problem arises, however, with respect to the relative ordering of the V and the non-subject agent. Malagasy, like its Austronesian cousins, has a rich voice system that allows a variety of VP internal elements to become subjects. Further, when the Agent is not the subject, it may remain in the Spec, vP (see Guilfoyle et al. 1992). An example where the instrumental is the subject is given below.

- (17) a. V AgentDP Theme Adv_L Adv_H Subject
- b. Nanasan'ny lehilahy lamba tsara foana ny savony
 PST.wash.CT'DET man clothes well always DET soap
 'The man always washed clothing well with the soap.'

As with Romanian DPs, even after roll-up movement (needed to account for the adverb ordering), the head appears to be able to separate from its complements. In the case of Malagasy VPs, the V moves across the Agent in Spec, vP. The relevant structures are given below. (18a) shows movement of the N across the demonstrative in Romanian DPs, and (18b) shows the movement of V across the Agent in Malagasy VPs.



5. Conclusions

In this paper, we have proposed an analysis of Romanian DPs that allows for both head movement and phrasal movement within the lower domain. First, we showed that analyses proposing only head movement or only phrasal movement cannot account for the word order interpretation correlations facts as they overgenerate word order scope interpretations that are not attested. This state of affairs seems counterintuitive as one would expect an account proposing only one type of movement to be more constrained than an account that proposes two types of movement. However, as we demonstrated here, by constraining the merger of APs to an antisymmetric structure, phrasal movement to roll-up movement and the choice between the two types of movement to once per

phase, we obtain a more constrained account, one that derives the attested data and blocks the unattested one. Crucially, the proposal presented here was substantially augmented by providing evidence of a similar syntactic phenomenon and the same type of constraints in Malagasy IPs. This additional evidence has a twofold significance. First, crosslinguistic support from a genetically unrelated language further validates the results and diminishes the likelihood that the account consists of a set of accidental stipulations restricted to a set of data in one language. Second, it provides further support for the increasingly larger body of evidence showing that IPs and DPs exhibit a vast amount of similarities in terms of syntactic structure and operations, e.g., movement, as well as in terms of the constraints thereon. Furthermore, the fact that the proposed constraints on movement (head or phrasal movement) apply within well defined domains of the DP and the IP, further supports the view that the extended projections of the lexical categories under discussion, nouns and verbs respectively, include clearly delimited phases that obey localized constraints on syntactic operations.

Finally, in this paper we provide additional evidence that the feature checking mechanism of lexical categories does not need to be restricted to one type of movement head or phrasal movement. Rather, the findings in the present paper suggest that the nominal or verbal features that must be checked can do so either by head movement or by phrasal movement, provided that the choice between the two types of movement is made once within a domain. Crucially, the choice between the two types of movement is available within the same language and within the same domain. However, clearly defined constraints on structure, movement and choice of movement type are at work.

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