

# Merging Modifiers of an NP before Its Arguments

Ümit Atlamaz

## 1. Introduction

Whether arguments of an NP merge before its modifiers has largely gone unquestioned. The general view in the literature has been that arguments of a noun merge before its modifiers due to the strict locality of thematic relations (Alexiadou et. al., 2007). The prevalence of this view can be attributed to the conjunction of two dominant ideas in the field: lexicalist views of argument structure, and DP-CP parallelism. The idea that thematic relations are strictly local, hence arguments merge first, was transferred from VP to NP and remained unquestioned for a long time. Investigating the crosslinguistic asymmetries in the linear order of arguments, modifiers and nouns, I propose that modifiers of a noun merge before its arguments – even before its theme argument – in an antisymmetric syntax (à la Kayne, 1994; Cinque, 2005; 2010). All the surface variation can be derived from ARG>MOD>N order.

The organization of the paper is as follows: Section 2 presents facts and generalizations. Section 3 outlines the major assumptions and presents the analysis. Section 4 compares the analysis proposed here to some previous analyses. Section 5 concludes the discussion.

## 2. Facts

Across languages, when N is final, the unmarked order is consistently ARG>MOD>N. When N is initial, N>MOD>ARG and N>ARG>MOD are both attested as unmarked orders, depending on the language.

(1) <sup>1</sup>	a. ARG>MOD>N	Turkish, Bangla, Malayalam, Japanese
	b. MOD>ARG>N	[UNATTESTED]
	c. N>MOD>ARG	Hawaiian, Romance, Libyan, Hebrew, Scottish Gaelic, Persian
	d. N>ARG>MOD	Kurmanji, Hebrew construct and Arabic construct

This paper focuses on Turkish, Persian, Kurmanji, and English. All the examples reflect the default order in the language under question unless stated otherwise. I restrict my attention to possessors, agents and themes as arguments. As for modifiers, I focus on intersective adjectives only.

### 2.1. Turkish

The unmarked order of arguments, modifiers and the noun in Turkish noun phrases is ARG>MOD>N. All the arguments and modifiers precede the head noun. Under no circumstances can the modifiers be on the left of an argument.

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<sup>1</sup> Facts about Bangla, Malayalam, Japanese, Hawaiian, Romance, Libyan, Hebrew, Scottish Gaelic, and Hebrew construct come from Adger (2013). Arabic construct is from Mark Baker (p.c.).

- (2) Ali-nin yol-u kötü tarif-i  
 Ali-GEN way-ACC bad description-POSS  
 Ali's bad description of the way
- (3) (\*kötü) Ali-nin (\*kötü) yol-u kötü tarif-i  
 bad Ali-GEN bad way-ACC bad description-POSS  
 Ali's bad description of the way

In contrastive topic cases, the theme can precede the agent as in (4).

- (4) yol-u Ali-nin kötü tarif-i  
 way-ACC Ali-GEN bad description-POSS  
 Ali's bad description of the way (not Mehmet's)

## 2.2. Persian

Persian is quite different from Turkish on the surface. The order of the trio is N>MOD>ARG. Both modifiers and arguments are introduced by a morpheme called *ezafe*.

- (5) Tosif-e khoob-e Amir az raah  
 Description-ez good-ez Amir from way  
 Amir's good description of the way

## 2.3. Kurmanji

Kurmanji, an Iranian language spoken in southeastern Turkey, is similar to Persian in that it uses *ezafe* constructions and both ARG and MOD follow the noun. The crucial difference is in the order of MOD and ARG. In Kurmanji, ARG is always closer to the N. Additionally, *ezafe* morpheme in Kurmanji agrees with the head noun in gender.

- (6) Qelem-a Eşxan-e-ye sor  
 Pen-ez.FM.NOM Eşxan-OBL-ez.FM red  
 Eşxan's red pen

The modifier cannot intervene between the noun and the argument.

- (7) \*Qelem-a sor-e Eşxan-e  
 Pen-ez.FM.NOM red-ez.FM Eşxan-OBL  
 Eşxan's red pen

When there are multiple arguments the order can only be as in (8).

- (8) Terif-a mın-ê rê-yê neçe  
 description-ez.FM.NOM me.OBL-ez.FM way-ez.FM bad  
 My bad description of the way

## 2.4. English

The four languages discussed above are uniform in the order of ARG/MOD against N. English surfaces as a hybrid one with the possibility of ARG/MOD being on either side of the N.

- (9) John's bad description of the city.  
 (10) Bad description of the city by John

## 2.5 Overview of the empirical patterns

Summarizing the facts listed above, we get the empirical pattern in (11). In the remainder of the paper, I discuss how all the word orders in (11), which are representatives of the typology in (1), can be derived from ARG>MOD>N order.

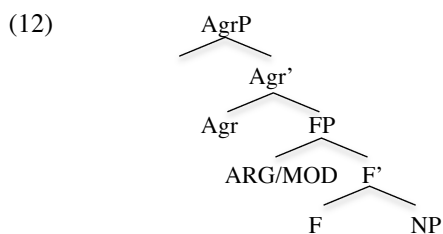
(11)	a. AGENT	THEME	ADJ	NOUN	<i>Turkish</i>
	b. AGENT	ADJ	NOUN	THEME	<i>English</i>
	c. NOUN	AGENT	THEME	ADJ	<i>Kurmanji</i>
	d. NOUN	ADJ	AGENT	THEME	<i>Persian</i>

The empirical pattern in (11) shows that when both ARG and MOD precede the N, ARG cannot intervene between MOD and N. When both ARG and MOD follow N, both orders are fine. The asymmetry in (1) is very much reminiscent of Cinque's work on the order of Dem, Num, Adj, N. This asymmetry can best be captured by Cinque's (2005; 2010) theory of nominal phrase structure and movement. The crucial question investigated is the base merge order in the DP. Assuming a universally shared base order, what should be the order of merge between arguments and modifiers of an N? In the next section, I list my assumptions and show how the typology in (1) is captured.

## 3. Analysis

### 3.1. Assumptions

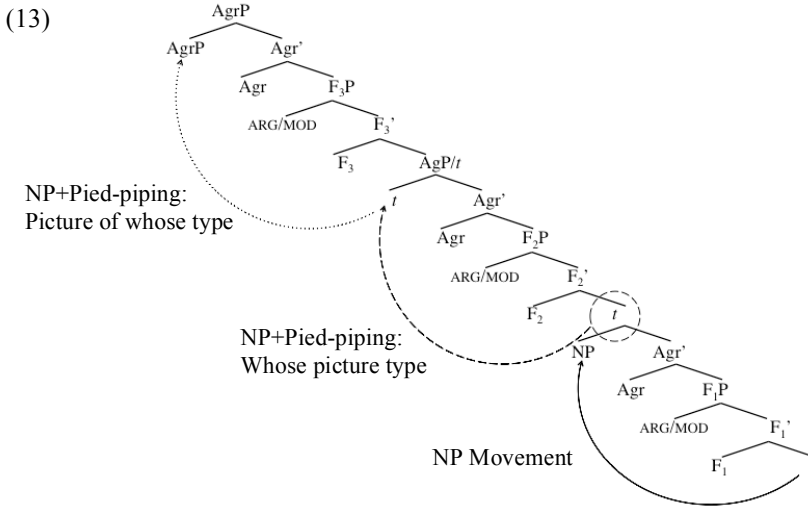
The asymmetry highlighted in the previous section is very much reminiscent of Greenberg's Universal 20 as discussed by Cinque (2005). Hence, the core assumptions are based on Cinque (2005; 2010). The assumptions are as follows: All modifiers are introduced in the specifiers of dedicated functional (F) phrases. Similarly, arguments are introduced by functional projections, in Spec, FPs. They cannot be introduced as complements of the lexical noun (Borer, 2003; Adger, 2013). Each argument/modifier-introducing FP is dominated by an AgrP, which plays a pivotal role in the extended projection of the NP by transferring the [+nominal] feature of the N via movement. Gender agreement in Kurmanji ezafe constructions supports AgrPs. (12) represents the core structure in which an argument or a modifier is introduced.



Surface word order variation is the result of phrasal movement guided by parametric variation on movement. There are four possibilities. The first possibility is *no movement*. In languages where *no movement* is active, the surface structure reveals the base merge order. The second possibility is movement of the NP only. Languages where only the NP moves, the surface structure reveals the base merge order of all the elements except for the NP. The two other possibilities are NP movement plus pied piping of different types. These are *whose picture type* [NP[XP]] and *picture of who type* [XP[NP]] movements. In the former case, NP is in the specifier of a larger phrase and that larger phrase moves, while in the latter case, NP is the complement of a larger phrase and that larger phrase moves.

Movement can be total or partial. For example, in a language where only the NP moves, the NP can move all the way up or it can move up to a certain position in the tree and remain there without moving any further. Whether movement is total or partial is due to existence/lack of trigger for

movement. Finally, the engine of the movement is the NP. Nothing moves without the NP (topic/focus/etc. aside). The three possible movement types are illustrated in (13) below.



### 3.2. The proposal

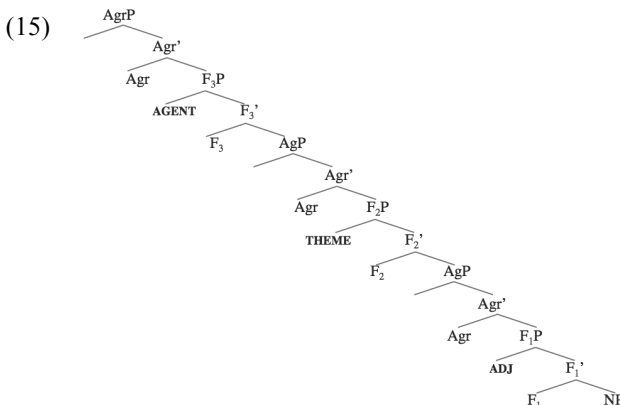
Given the theoretical tools above, one needs to determine the base merge order from which all the surface forms listed in section 2 can be derived. I entertain two possibilities, MODIFIER FIRST and ARGUMENT FIRST, and show that MODIFIER FIRST does better than ARGUMENT FIRST.

#### 3.2.1. Modifier first

First of all, a base structure where modifiers of a noun merge before its arguments yields all the desired word orders discussed in section 2. Indeed, this is the only possible way to account for the typology in (1) in the anti-symmetric view adopted here. In the following, I show how Turkish, Kurmanji, Persian, and English word orders are derived by merging modifiers lower than arguments. The surface orders that need to be accounted for are summarized in (11) repeated below as (14).

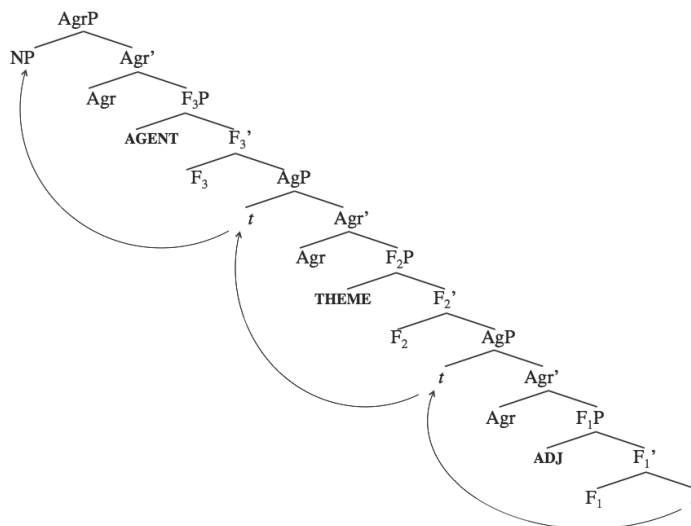
(14)	a. AGENT	THEME	ADJ	NOUN	<i>Turkish</i>
	b. AGENT	ADJ	NOUN	THEME	<i>English</i>
	c. NOUN	AGENT	THEME	ADJ	<i>Kurmanji</i>
	d. NOUN	ADJ	AGENT	THEME	<i>Persian</i>

By merging modifiers lower than arguments, we get languages like Turkish for free. No movement yields the desired order.



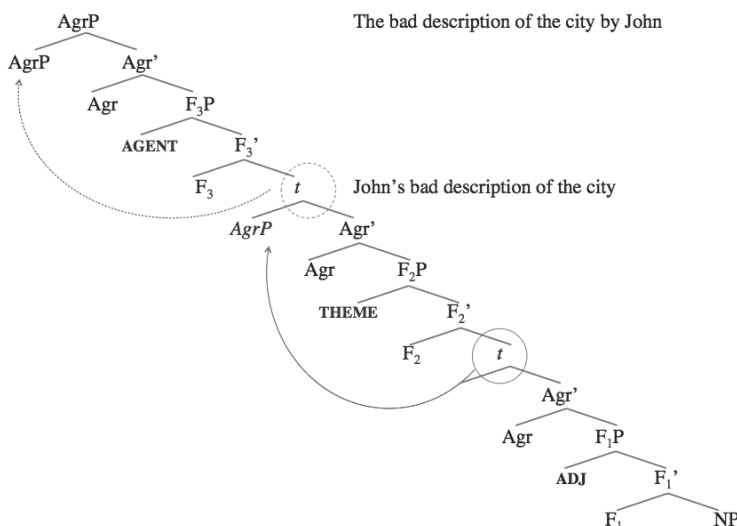
Languages like Kurmanji can be generated by moving the NP all the way up through the specifiers of AgrPs.

(16)

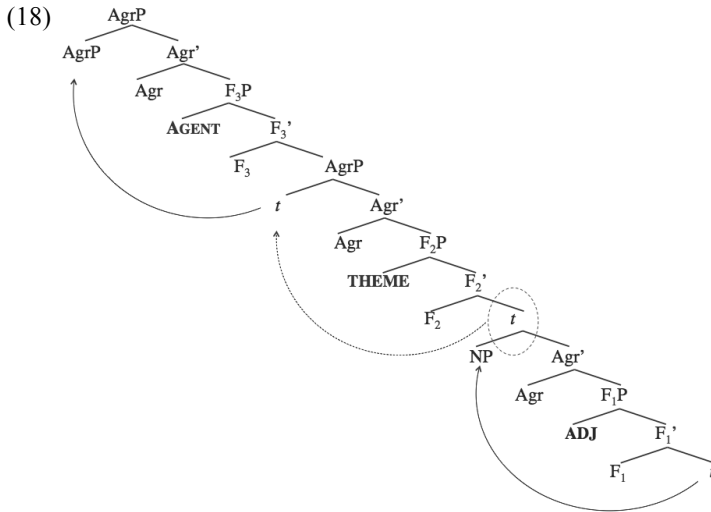


In section 2, I discussed two possible word orders for English: *John's bad description of the city* and *bad description of the city by John*. MODIFIER FIRST approach can generate both word orders. English does NP movement plus pied-piping. Movement of the AgrP that dominates both the modifier and the NP results in *John's bad description of the city*. In the second round, movement of the whole AgrP that dominates the first argument, the modifier, and the noun yields the second possible order which is *bad description of the city by John*.

(17)



Finally, MODIFIER FIRST approach can also generate Persian. Persian has NP>MOD>AGENT>THEME order. This order can be established by moving the NP around the modifier and then moving the AgrP that dominates the modifier and the noun through the specifiers of other AgrPs.



The derivations in (15)-(18) show that all the desired word orders can be generated by merging modifiers before arguments and then applying different types of movement. The theory is strong enough to derive all the desired word orders.

The second strength of the MODIFIER FIRST approach is that it cannot generate the unattested MOD>ARG>NP order. In this system, the engine of the movement is the NP. Therefore, nothing moves to the exclusion of the noun. Hence, movement of a modifier around an argument is impossible. This restriction on movement rules out the unattested MOD>ARG>NP order.

To summarize, MODIFIER FIRST approach can generate all the attested word orders while it rules out the unattested word order(s). In the next section, I show how ARGUMENT FIRST approach fails short of accounting for these facts.

### 3.2.2. *Argument first*

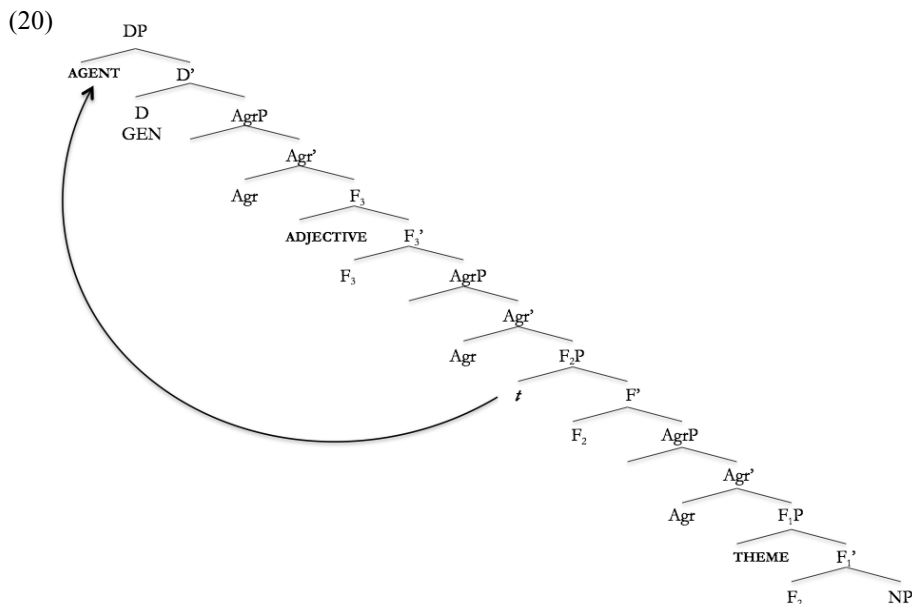
Merging arguments of a noun before its modifiers faces a number of challenges. First of all, one would expect to attest languages with MOD>ARG>NP order, as this is the base order predicted by the ARGUMENT FIRST approach prior to any movements. ARGUMENT FIRST approach has to bring in some extra precautions to ban the MOD>ARG>NP order while MODIFIER FIRST rules out this order automatically.

The second crucial point is that ARGUMENT FIRST approach cannot generate ARG>MOD>NP order, a widely attested order. In order to get ARG>MOD>NP order, arguments have to move around the modifiers while the noun has to stay in situ. Note that it is impossible in this system to move any of the arguments or modifiers to the exclusion of the NP unless motivated otherwise. Let me show how ARGUMENT FIRST approach fails to derive ARG>MOD>NP order even with some motivation to move the arguments without moving the noun.

Consider the following phrase from Turkish with AGENT>THEME>ADJ>N order.

- (19)    Ali-nin            yol-u            kötü            tarif-i  
          Ali-GEN           way-ACC        bad            description-POSS  
          Ali's bad description of the way

Let us assume that the hypothetical structure in (20) represents the base merge order of (19). The theme merges first, then the agent, and finally the intersective adjective.



One could argue that GEN in Turkish is in a position higher than the modifier (say D) and requires the agent to move into its specifier. This returns the AGENT>ADJECTIVE>THEME>N order. The theme is still below the adjective and it needs to be moved above the adjective to be linearized to the left of the adjective. There are two possible ways of moving the theme. Either the theme moves into the specifier of another head higher than the adjective, or both the agent and the theme move into multiple specifiers of the same head above the adjective.

The first option cannot be true as it leads to a reversal in the orders of the agent and the theme due to locality and intervention. It results in the THEME>AGENT>ADJECTIVE>N order which is a possible word order in Turkish with a topic/focus reading. Nevertheless, it is not the desired unmarked order.

The second option is problematic, too. Moving both the agent and the theme into multiple specifiers of the same head via tuck-in type movement (Richards, 2001) yields the correct AGENT>ADJECTIVE>THEME>N order. However, it results in morphological issues. If GEN is the head that triggers the movement, then GEN should appear on the theme rather than the agent as the theme is the closest specifier. If GEN is a case assigned by the head that triggers movement of the agent and the theme, it is not clear how two arguments in the specifier position of the same head get two distinct cases, namely GEN and ACC. The picture gets even more complicated with a goal element, which bears dative case. This yields the second option impractical.

Briefly, ARGUMENT FIRST approach cannot generate the ARG>MOD>NP order because there is no motivation for movement of an argument over a modifier without also moving the noun. It fails to account for Turkish facts even when some motivation for movement is stipulated. Note that in the MODIFIER FIRST approach, ARG>MOD>NP, hence Turkish, comes for free.

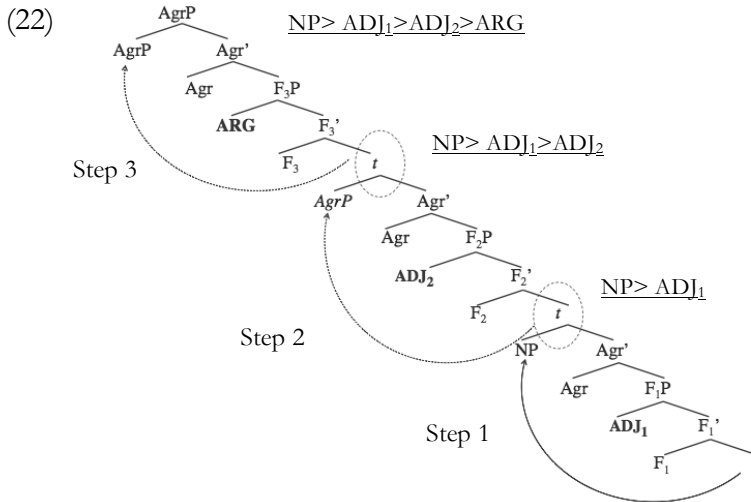
The third problem with ARGUMENT FIRST is that it cannot generate Persian roll-up facts. Direct modification adjectives in Persian have the mirror image order of English (Kahnemuyipour, 2014).

- (21) fizikdaan-e      hasteyi-ye      javaan  
 Physicist-ez      nuclear-ez      young  
 \*fizikdaan-e      javaan-e      hasteyi  
 ‘a young nuclear physicist’

In the anti-symmetric Cinquean framework adopted here, the only way to account for this fact is via roll-up movement. To obtain N>ADJ1>ADJ2 order from ADJ2>ADJ1>N order, the NP has to move around ADJ1, and then the AgrP that contains NP+ADJ1 has to move around ADJ2.

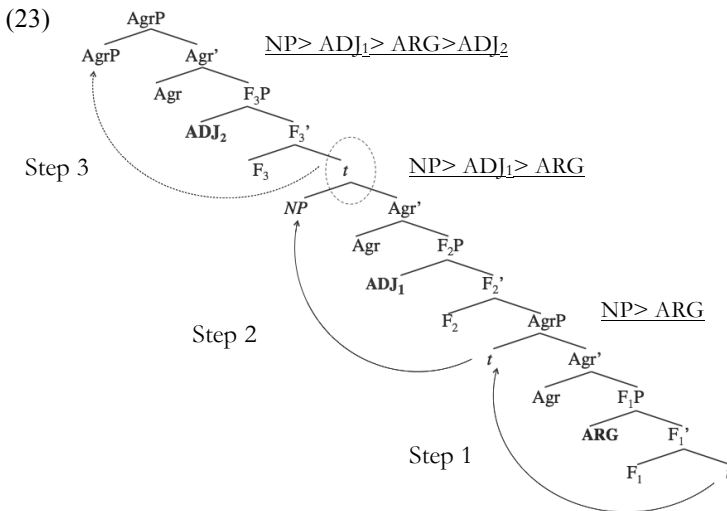
Now, consider a Persian phrase with two direct modification adjectives and an argument. The desired order is NP>ADJ1>ADJ2>ARG. In the following, I show how MODIFIER FIRST can generate this order while ARGUMENT FIRST fails to do so.

(22) is a MODIFIER FIRST structure.



To get the desired order, in Step 1, the NP moves around the first adjective yielding NP>ADJ1. In Step 2, AgrP moves around the second adjective yielding NP>ADJ1>ADJ2. In the final step, the second AgrP moves around the argument yielding NP>ADJ1>ADJ2>ARG, the desired order.

(23) is an ARGUMENT FIRST structure.



There is no possible way (23) would produce the desired NP>ADJ1>ADJ2>ARG order. In the first step, the NP moves around the ARG. In the second step, the NP has to move again (around ADJ1) so that we get the NP>MOD>ARG order in Persian. In the last step, NP has to move around ADJ2 pied-piping ADJ1. The only way to do so is by moving the whole AgrP dominating both the NP and the ADJ1. This, however, moves the argument as well, resulting in an undesired order like NP>ADJ1>ARG>ADJ2.

To summarize, MODIFIER FIRST approach can generate all the attested word orders listed in (1) while it disallows the unattested MOD>ARG>NP order. On the other hand, NP>MOD>ARG cannot generate the widely attested ARG>MOD>NP order. Additionally, it overgenerates by predicting the MOD>ARG>NP order to exist. Finally, MODIFIER FIRST can account for Persian roll-up facts while ARGUMENT FIRST cannot.



## 4. Comparison with previous work

Merging modifiers before arguments is not a new idea. Larson & Yamakido (2008), Larson (2014), and Adger (2013) claim that modifiers merge before arguments. In the following, I discuss the points in which the theory presented here differs from and fares better than the others.

### 4.1. DP-Shells

Larson & Yamakido (2008) and Larson (2014) argue that DPs have a shell structure similar to VP shells (Larson, 1988). In this theory, modifiers are oblique arguments of D, head of the extended projection (cf. Grimshaw, 2000). Oblique arguments merge as low complements of D heads. Evidence for this comes from NPI licensing in modifiers of VPs.

(24) Alice speaks few languages [with any fluency].

Since modifiers are oblique arguments, they need to be case licensed by a head in their base generated position. If they cannot be case licensed in their base position, then they have to move to a position where they can get case.

Larson & Yamakido (2008) analyze Persian *ezafe* as a case licenser. In languages like Persian, modifiers are case licensed in situ by *ezafe*. Therefore, they do not need to move. On the other hand, English does not have any such *ezafe*-like morphemes. Therefore, adjectives in English must move to a position where they can get case.

This theory makes a strong prediction about the universal base order. Languages like Persian represent the cross-linguistic base order for ARG, MOD, and N because nothing moves. Languages like English, on the other hand, are derived.

This theory predicts that languages with *ezafe* should represent the universal base as there is no movement. However, Persian and Kurmanji are two languages that both use *ezafe* and differ in terms of word order. One would expect not to see any variation in languages utilizing *ezafe*. Note that the theory presented here does better on predicting variation in languages where modifiers are post-nominal. The variety of movement types account for the difference between Kurmanji and Persian while predicting less variation in pre-nominal position.

### 4.2. PP-Peripherality

Adger (2013) proposes a symmetric syntax where modifiers of a noun merge before its PP arguments. He argues that PP arguments are peripheral to the NP, which is presented as the generalization in (25).

(25) *PP Peripherality* (Adger, 2013)

When (intersective) AP modifiers and PP “complements” both occur to one side of the N inside a noun phrase, the PP is separated from the N by the AP.

PP Peripherality is the direct result of a symmetric syntax where modifiers and PP arguments could be linearized to the left or the right of the noun. In this theory, then, when two phrases attached to a head are linearized to the same side of the head, the lower one is always closer to the head than the higher one. This predicts the typology in (23).

- (26)
- a. ARG>AP>N
  - b. N>AP>ARG
  - c. \* AP>ARG>N
  - d. \* N>ARG>AP

There are two problems with Adger’s PP-Peripherality. The first problem is about the generalization on how arguments are introduced in noun phrases. It is not true that cross-linguistically

all the arguments in DP are introduced via PPs. Kurmanji, Persian, and Hawrami use *ezafe* while Turkish uses genitive-possessive constructions for some of the arguments and nothing special for the others. Therefore, redefining PP Peripherality as Argument Peripherality is technically more precise.

The second and the most essential problem with Adger's (2013) theory is that it cannot capture the asymmetry presented in (1). Specifically, this symmetric theory rules out N ARG MOD order as the default order in a language. Note that N ARG MOD is the only possible word order in Kurmanji. The anti-symmetric theory presented here can easily account for the asymmetry in (1). Following the predictions of the anti-symmetric theory presented here in tandem with the empirical generalization in (1), then, PP-Peripherality should be modified as Argument Peripherality in the following way.

(27) *Argument Peripherality*

When modifiers and arguments both occur to the left of the N inside a noun phrase, the argument is separated from the N by the modifier.

### 4.3. A note on Abels & Neelman (2012)<sup>2</sup>

Abels & Neelman (2012) (A&N) criticize the anti-symmetric syntax adopted in Cinque (2005) and propose an alternative symmetric syntax restricted by leftward movement to account for the languages discussed by Cinque. A&N framework can be extended to the typology in (1). In fact, A&N's theory accounts for all the word orders in (11). However, there is a reason why I did not adopt that view, although I believe it does equally well on the typology discussed here. Cinque's theory makes a strong prediction about the base orders: all the prenominal elements are in their base position and this reflects the merge hierarchy (Cinque, 2014). For A&N, base order cannot be the prediction of the theory, it must be assumed. As this project focuses on the merge order between modifiers and arguments, Cinquean framework suits better with the primary goal of this project.

## 5. Conclusion

This paper argued that modifiers of a noun merge before its arguments in an anti-symmetric syntax. All modifiers and arguments are introduced by F(unctional) heads each of which is dominated by an AgrP. All surface orders can be derived from ARG>MOD>NP order via a series of movement. The cross-linguistic surface variation is due to parametric variation on movement.

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