

(In)flexibility in Adjective Ordering

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Abstract

The present thesis investigates adjective ordering across languages, with an emphasis on Greek and Cypriot Maronite Arabic (CMA). Cross-linguistically, attributive adjectives are argued to be ordered according to their semantic class (Hetzron 1978; Dixon 1982; Cinque 1994, 2010, among others). Given that the orders attested cross-linguistically are very similar, it is claimed that all orders have the same underlying order, which is imposed by syntax as in Cinque 2010.

If adjective ordering restrictions are indeed syntactic, the question that arises is how to account for violations of the order. I defend the view that the order can be affected by various factors. Following Sproat and Shih (1991) and Cinque (2010), I assume that there is an *indirect* vs. *direct* distinction in adjectival modification, and I claim that Greek *polydefinites* are an instance of the former, whereby the adjective merges inside a Reduced Relative Clause – a PredP as in Bhatt 2000. The additional definite article is not a true article, but the realisation of Pred⁰.

Moreover, I argue that adjective ordering phenomena give us an insight into whether adjectives modify the noun as heads or phrases. The claim is that both are necessary; adjectives that are structurally closer to the noun combine with it as heads, while structurally higher adjectives, e.g. adjectives with complements or adjectives that have a predicative source, are phrasal-modifiers. The ability of adjectives to have access to both types of modification also leads to apparent violations of the order.

Finally, I discuss new data from CMA, which allows both prenominal and postnominal adjectives. Adjectives borrowed from Greek are found in either position, while native Arabic adjectives are strongly preferred postnominally. I argue that adjective ordering and placement is inflexible in CMA, and that the facts follow by the need of phrases in the extended nominal projection to inherit a nominal feature.

Acknowledgements

David Eagleman in his book *Sum: Forty tales from the afterlives* presents different scenarios of what afterlife might be like. In the first tale, *Sum*, you relive your past, but this time around all of your life events are reshuffled by category. If I had to relive my time as a PhD student under this scenario, I'd probably spend about 18 months thinking about adjectives, 10 months staring blankly at my computer screen, 4 months eating chocolate, 3 months drinking coffee, another 3 months drinking tea, a month having mini-breakdowns, and I'd spend surprisingly little time writing. This was not what I expected when I first started my PhD, and there are many people who deserve my thanks for helping me go from the thinking-part to the writing-part, and to eventually finishing this thesis.

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Chapter 1

Introduction

1.1 Adjective ordering across languages

The subject of adjective ordering is a popular one among linguists (Barrit 1952; Lance 1968; Hetzron 1978; Dixon 1982; Sproat and Shih 1991; Cinque 1994, 2010; Scott 2002, among others). The interest in the topic stems from the fact that attributive adjectives follow similar patterns across languages. In languages in which nominal modifiers appear before the noun, adjectives generally follow the unmarked order given in (1).

(1) Quality \succ Size \succ Shape \succ Colour \succ Nationality \succ N¹

The above order suggests that quality adjectives like ‘ugly’ come before size adjectives such as ‘big’, which in turn have to precede a shape adjective like ‘round’, and so forth. The order in (1) is found in Sproat and Shih 1991:565 and Cinque 1994:96.² It is, nevertheless, very similar to the orders introduced in other works. Some have suggested more elaborate orders, for example, Value \succ Dimension \succ Physical Property \succ Speed \succ Human Propensity \succ Age \succ Colour (Dixon 1982:24–26).³ Scott (2002) goes into even more detail and, while he keeps the order in (1), he decomposes the Size class into four more classes, namely, Length \succ Height \succ Width \succ Weight. He also introduces additional semantic

¹The symbol \succ has the meaning of ‘precedes’ throughout the thesis. It is used to describe linear order rather than hierarchical. See also section 1.2 for a brief discussion on the distinction between the two types of orders.

²Sproat and Shih (1991:565) use the term *Provenance* instead of *Nationality*.

³The adjective class of Value corresponds to the Quality class and it includes adjectives like ‘good’ and ‘bad’. The class of Physical Property consists of adjectives like ‘hard’, ‘clean’ and ‘hot’, while Human Propensity contains adjectives such as ‘jealous’, ‘rude’, and ‘happy’ (Dixon 1982:16).

categories such as Age, Speed and Temperature.

The examples in (2)–(6) support the idea that there is a unique adjective order across languages with prenominal adjectives. The size adjective ‘big’ must appear before the colour adjective ‘white’ in all of the following five languages. The reverse order is still acceptable in the cases of Greek, Swedish and German, but is a marked order. By ‘marked’ I mean that it is either used in a context where the colour adjective is used contrastively, or in a context where the colour adjective modifies the set of big bowls, and not just any bowls.⁴ A similar pattern is also observed in non-Indo-European languages like Tigrigna and Chinese. In Tigrigna the noncanonical order is unacceptable, and so it is in Chinese unless the particle *de* intervenes between the two adjectives as illustrated in (6b).

(2) *Greek*⁵

- a. to meyalo aspro bol
the big white bowl
- b. #to aspro meyalo bol
the white big bowl

(3) *Swedish*

- a. den stora vita skålen
the big white bowl
- b. #den vita stora skålen
the white big bowl

(4) *German*

- a. die grosse weisse Schüssel
the big white bowl
- b. #die weisse grosse Schüssel
the white big bowl

(5) *Tigrigna*

- a. nəti ʔabi tsaʔda bijati
the.ACC big white plate
- b. *nəti tsaʔda ʔabi bijati
the.ACC white big plate

(6) *Chinese*

- a. na ge da bai wan
that CL big white bowl

⁴The involvement of Focus is discussed in section 3.4 of chapter 3.

⁵All the Greek examples in the thesis are transcribed in IPA.

- b. na ge bai/baise *(de) da wan
 that CL white/white-colour DE big bowl

With regard to postnominal adjectives, there are (at least) two orders attested across languages.⁶ In the first attested order, adjectives appear as the mirror image of the order in (1). If a language adheres to the postnominal order in (7), then colour adjectives have to appear before shape adjectives, which in turn have to come before size adjectives, and so forth.

- (7) N > Nationality > Colour > Shape > Size > Quality

The mirror image order is evinced, among other languages, in Hebrew and most Arabic dialects. The Hebrew data in (9) shows that a nationality adjective must appear to the left of a colour adjective, and in the Standard Arabic example in (10) the colour adjective is found to the left of a size adjective.⁷

- (9) *Hebrew*
 a. para švecarit xuma
 cow Swiss brown
 b. *para xuma švecarit
 cow brown Swiss
 ‘a brown Swiss cow’

(Shlonsky 2004:1485, (42))

⁶More orders are possible postnominally and in N-medial orders. In chapter 2, section 2.4.2 we will see how Cinque (2010) accounts for this possibility.

⁷Cinque (2009:166) lists Indonesian as another language that obeys the mirror image order. However, Indonesian differs from Semitic with respect to adjectival modification. Semitic patterns with the languages in examples (2)–(6), in that it permits stacked attributive adjectives. Indonesian, on the other hand, only allows a single attributive adjective to modify the noun, while the second adjective has to appear in a relative clause as shown in (8). Nevertheless, the unmarked order of the two adjectives still respects the mirror image order, as witnessed from the ordering Colour > Size in (8a). The reverse order in (8b), in which the colour adjective is part of a relative clause and the size adjective modifies the noun attributively, is only felicitous in contexts where the colour adjective is contrastively focussed.

- (8) *Indonesian*
 a. piring putih yang besar itu
 plate white which big that
 b. #piring besar yang putih itu
 plate big which white that
 ‘the big white plate’

We will not be concerned with the Indonesian data, as the discussion of ordering in this section is focussed on how attributive adjectives are ordered with respect to one another.

- (10) *Modern Standard Arabic*
- a. al-kitab al-aḥmar al-kabiir
the-book the-red the-big
 - b. ??al-kitab al-kabiir al-aḥmar
the-book the-big the-red

The second postnominal order is given in (11). In this case the adjectives are ordered as in the prenominal order, with the only difference being that they follow the noun.

- (11) N > Quality > Size > Shape > Colour > Nationality

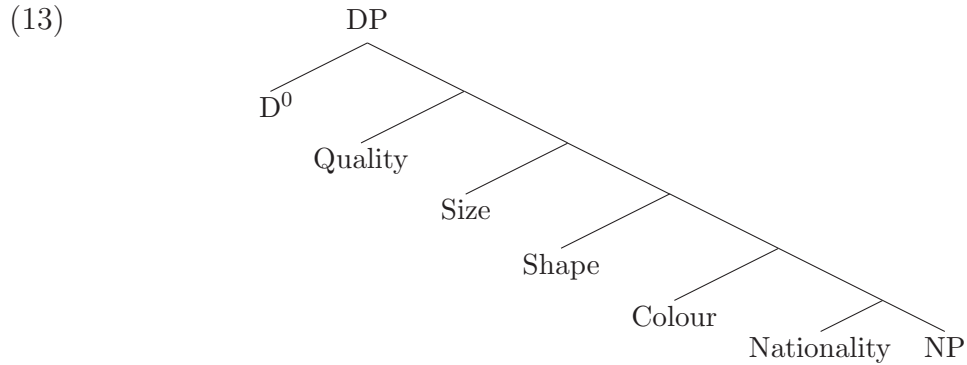
Examples of languages that obey the non-mirror image postnominal order are Welsh and Irish. As witnessed in the Welsh example in (12), a nationality adjective must appear after a colour adjective, which in turn has to follow a size adjective. This order is identical to the order of adjectives in examples (2)–(6).⁸

- (12) *Welsh*
- a. cwpan mawr gwyrdd Sieineaidd
cup big green Chinese
- (Rouveret 1994:213)
- b. *cwpan Sieineaidd mawr gwyrdd
cup Chinese big green
 - c. *cwpan Sieineaidd gwyrdd mawr
cup Chinese green big
'a large green Chinese cup'

A conclusion drawn from the above data is that there is cross-linguistic variation when it comes to the ordering of postnominal attributive adjectives, but not with the ordering of prenominal adjectives. This property of adjectival ordering is an instance of what Cinque (2009) calls a left-right asymmetry. Cinque observes that when complements, modifiers and functional heads surface to the left of a lexical head they appear in a unique order, but when found to the right of the head they are either in the same order or the exact opposite. For this reason, Cinque (2005, 2009, 2010) concludes that the prenominal order corresponds to the underlying

⁸Willis (2006) argues that both the non-mirror and mirror image orders are attested in Welsh. Specifically, Willis shows that while size, colour and nationality adjectives appear in the non-mirror image order as in the above example, adjectives of quality and age appear in the mirror image order. Willis' analysis and the relevant Welsh data are presented in chapter 5, section 5.5.3.

order, while any other order is derived via movement of a phrase that contains the lexical head. In Cinque’s system adjectives are merged as specifiers which, following Kayne (1994), are assumed to be leftward. The hierarchical order of the adjectives is thus as illustrated below:

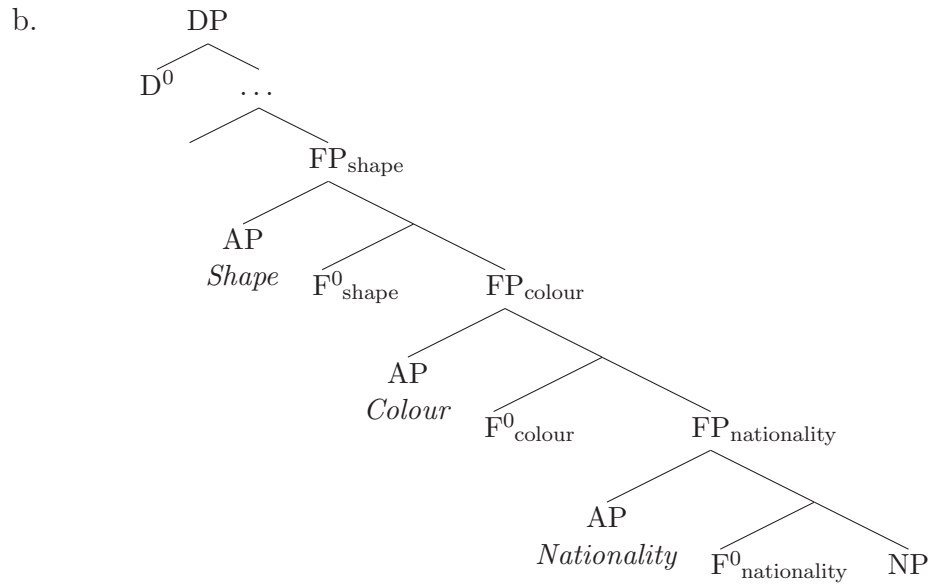


The hypothesis that movement is responsible for deriving all other orders can account for why we find variation in the order with postnominal adjectives or in N-medial sequences across languages: the lexical head N^0 can move as part of the NP or as part of a larger phrase that contains the NP, and movement can be total or partial.⁹ These options, therefore, give rise to different orders.

Cinque’s position that the prenominal order is also the underlying order of adjectives is adopted in this thesis. I refer to this order as *universal order*. Moreover, following Cinque (1994, 2010), I assume that the universal order is encoded in the syntax and is not the outcome of a semantic or processing constraint. In Cinque’s (1994; 2010) analysis adjectives are merged in the specifier of a functional projection (FP) with which they are semantically related. For instance, a size adjective such as *big* is merged in the specifier of an FP that is related to size, while *red* is merged inside an FP that is related to colour. These FPs are hierarchically merged in the extended nominal projection, and as a direct outcome, the adjectives are also hierarchically merged as represented in (14b).

- (14) a. *Universal order*
 Quality > Size > Shape > Colour > Nationality

⁹The restrictions on movement will be discussed further in chapter 2, section 2.4.2, but also throughout the thesis.



The details of Cinque’s (2010) analysis and its implications will be elaborated on as we progress.¹⁰ This analysis will be the cornerstone of my own analysis in chapters to follow. In the remainder of this introductory chapter, I first discuss the distinction between linear and hierarchical order, and then I give an overview of the thesis.

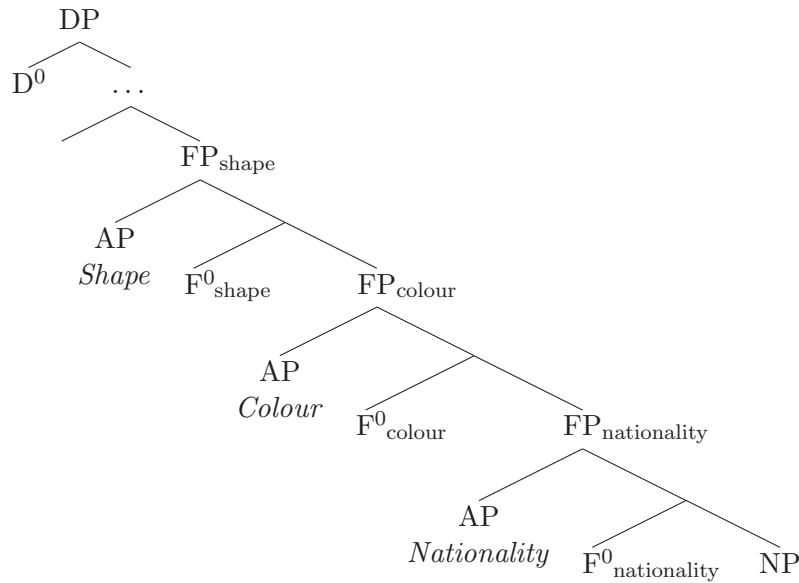
1.2 A note on linear vs. hierarchical order

Considering that the topic of the present thesis is the *ordering* of adjectival modifiers, it is important to clarify the distinction between *linear* and *hierarchical* orders. The linear order of adjectives is the order in which adjectives surface in a given language. The hierarchical order, on the other hand, is the order in which adjectives are merged in the structure.

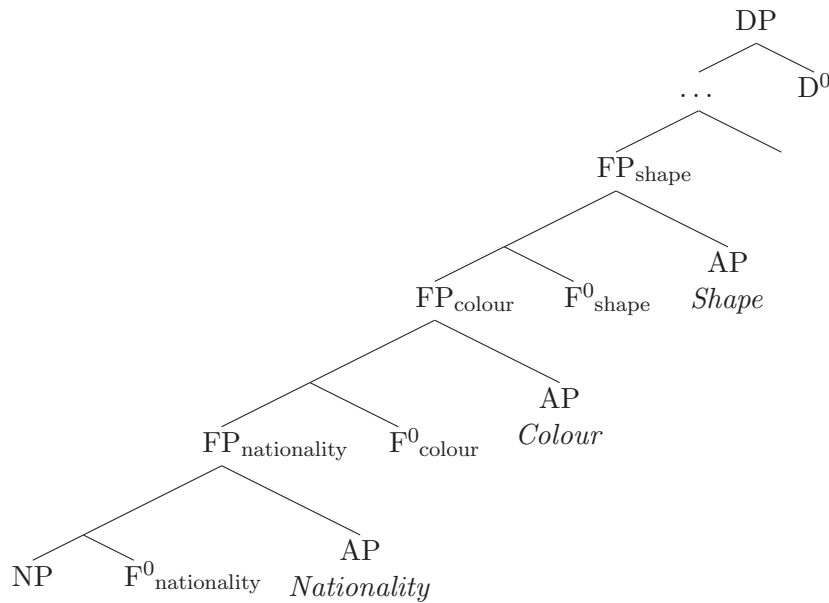
While linear and hierarchical orders might coincide at times, this is not always the case. For instance, let us assume an analysis similar to Cinque’s (2010), in which adjectives are merged in the specifiers of dedicated functional projections that are hierarchically merged in the extended nominal projection. Let us also suppose that specifiers can either be left or right branched. What becomes clear from the structures in (15) and (16) is that while the modifiers follow the same hierarchical structure, the linear order of the modifiers differs. In particular, the linear order of (16) is the mirror image of the order in (15).

¹⁰The analysis is presented in section 2.4 of chapter 2, but I also keep coming back to it throughout the thesis.

- (15) Shape > Colour > Nationality > N *Hierarchical order*
 Shape > Colour > Nationality > N *Linear order*



- (16) Shape > Colour > Nationality > N *Hierarchical order*
 N > Nationality > Colour > Shape *Linear order*



As is evident from the above examples, I mark each type of order with a different symbol. If $B \succ C$ I take this to mean that, linearly, B surfaces to the left of C. However, if $B > C$ this means that B is structurally merged higher than C in the extended nominal projection. In most cases in this thesis, the term ‘order’ is used in the former sense, i.e. linear order. Whenever I talk about hierarchical order,

this is explicitly mentioned in the text, and is also marked with the symbol > in the examples.

1.3 Thesis overview

The position I take in the present thesis is that adjective ordering is encoded in the syntax. The aim, therefore, is to discuss apparent violations in the order and to demonstrate that these can be accounted for while maintaining this position.

The thesis was conceptually conceived in the reverse order in which it is presented. The question of whether there is a universal underlying adjective order arose while I was looking at the distribution of adjectives in Cypriot Maronite Arabic (CMA). While trying to decipher the CMA data, I reached the conclusion that an analysis which either treats adjective ordering as being free or derives it from semantic constraints could not capture the facts. The investigation of CMA adjectives led me to look for similarities in Greek polydefinites, as the language has been under intense contact with Greek for an extensive period of time. The examination of adjective distribution in both CMA and Greek stirred up more questions about when and why adjective ordering restrictions are lifted.

In the course of considering the above issues I also had to look into general theoretical questions about adjective syntax. The thesis begins with a review of these questions in chapter 2. I discuss some well-known puzzles, for example, the semantic ambiguity of adjective+noun combinations such as *beautiful dancer* and *old friend*. These phrases have the readings ‘beautiful as a dancer’ or ‘beautiful as a person’, and ‘aged friend’ or ‘friend for a long time’, respectively. The two available readings are associated with distinct surface positions in some languages, but not in others. The chapter presents previous analyses that attempt to account for these interpretational differences and cross-linguistic variation. I conclude that Cinque’s (2010) analysis, which assumes that there are two sources of adjectival modification, an attributive and a predicative, is able to capture many of the properties of adjectival syntax. For this reason I adopt Cinque’s analysis as the foundation of my thesis.

Chapter 3 begins by arguing that there is a fixed underlying adjective order, and continues by considering several factors that can affect the rigidity of the order. The topics covered in this chapter include the distinction between direct, indirect, and parallel modification, level of modification (A⁰ or AP), and information structure. As noted by Sproat and Shih (1991) modifiers in indirect and

parallel modification have flexible ordering, while direct modifiers appear in a rigid order. The investigation of whether adjectives modify the noun as heads or phrases leads to the conclusion that both types of modification are found in the extended nominal projection. I argue that this possibility of adjectives to modify the noun either as APs or A⁰s often results in violations of the fixed order. I further claim that we can distinguish unmarked orders from marked: the former come with two interpretations, while the latter have a unique reading. With regard to information structure, I follow previous analyses in assuming that Focus can also have an effect on adjective ordering.

Chapter 4 looks at polydefinite constructions in Greek. Adjectives in these constructions have free ordering and can appear both before and after the noun. Moreover, each adjective in the construction appears with its own definite article. The interpretation of a phrase in a polydefinite construction remains unaffected regardless of the order or the placement of the adjectives in relation to the noun. After presenting previous analyses on the subject, I present my own analysis which captures this phenomenon, while maintaining the idea that adjective ordering is encoded in the syntax. I propose that adjectives in polydefinites have a predicative source instead of a direct/attributive source, hence the freedom in their ordering. As for the additional definite articles, I claim that these are not true definite articles, but the realisation of a Pred⁰ head.

In chapter 5, I examine adjective ordering in CMA, which unlike the ordering of adjectives in Greek polydefinites, is inflexible. At first blush, the ordering and placement of adjectives in CMA appears to be relatively flexible as most adjectives can surface both before and after the noun. Furthermore, colour adjectives are found both to the left and right of nationality adjectives when postnominal. However, I show that these facts are not unsystematic and I suggest that there is a correlation between the origin of an adjective and the position in which it will surface: lexical items that have been borrowed from Greek have access to both the prenominal and the postnominal position, while native lexical items are strictly postnominal.¹¹ The ordering of colour adjectives is also related to whether the colour term is borrowed or not. Borrowed colour terms always surface in the universal order (N) > Colour > Nationality > (N), while native colour terms must appear in the mirror image order N > Nationality > Colour.

The main claim of the analysis for CMA is that variation in the language stems from the different options of licensing each Agr phrase in the extended

¹¹In chapter 5 we will see that this generalisation is in fact more complex.

nominal projection with a nominal feature. Following Cinque (2005), I propose that the nominal feature can either be merged directly with each Agr phrase in the projection, or that the Agr phrases are licensed via movement. I argue that there are three types of DP-internal movement at CMA's disposal: Spec-to-Spec NP-movement, roll-up, and head movement. This chapter also compares two approaches for deriving the postnominal mirror image order: an antisymmetric analysis that employs movement, and a symmetric analysis that assumes that the order is base generated. While no strong claims are made in favour of one analysis over the other, I conclude that the CMA data is best captured under the antisymmetric approach.

Finally, in chapter 6, I summarise the main conclusions of the thesis, and raise residual questions which need further investigation.

Chapter 2

Adjective Syntax

2.1 Introduction

The aim of this chapter is to introduce and discuss some background literature on attributive adjectival modification. The question of what the syntax of attributive adjectives is has puzzled linguists since the early days of generative grammar, as the cross-linguistic distribution of adjectives appears to be far from uniform.

The chapter begins by considering some widely known puzzles concerning the syntax and semantics of attributive adjectival modification in section 2.2. The three issues presented in this section are: semantic ambiguities of adjectives, the positioning of adjectives with respect to the noun, and finally the categorisation of adjectives into different semantic classes.

In section 2.3 I present some of the literature on the topic. The first subsection introduces the traditional transformational analysis of adjectives, while the second subsection explores three different analyses of the early 90s that take cross-linguistic variation to arise from N-movement.

Finally, section 2.4 examines Cinque 2010 which assumes that adjectival modification has two sources: a predicative one, similar to what was assumed in the traditional transformational analysis, and a direct modification source, where adjectives are merged as specifiers of dedicated functional heads found in the extended nominal projection. Cinque's approach will form the foundation for the remainder of the thesis.

2.2 The puzzles

2.2.1 The beautiful dancer and other ambiguities

One of the puzzling properties of adjectival modification is the fact that the same combination of adjective+noun can sometimes result in ambiguity. Bouchard (2002) argues that this is perplexing if we take for granted that adjective+noun combinations are compositional. Bouchard (2002:5) adopts Frege's (1923) notion of compositionality which asserts that the meaning of a complex expression is determined by the meaning of its constituents and their combination.

A famous example of such ambiguity is *beautiful dancer* (Vendler 1968; Siegel 1976, 1979; Larson 1995, 1999). The adjective+noun combination can either pick out an individual who is a dancer and who happens to be beautiful, or a dancer who dances beautifully. As Larson (1995, 1999) points out, the adjective+noun combination in the first case is intersective, as the interpretation is a simple intersection of the set of dancers and of the set of beautiful people or things. The dancing abilities of the dancer are irrelevant in this case. For all we know, the dancer might be really bad at dancing. Vendler (1968:88) compares this reading to phrases like *red balloon* where again the adjective+noun combination has an intersective relationship. Vendler (1968:88, (I)) assumes that these adjective+noun combinations are derived from the transformation in (1) which translates as 'dancer who is beautiful' or 'balloon which is red'.

(1) AN – N wh... is A

The second reading of *beautiful dancer*, on the other hand, is nonintersective. In this case it appears to be that *beautiful* modifies the dancing, rather than the dancer. As a result, if Natalia is a beautiful dancer and this is interpreted nonintersectively, then it is not necessarily the case that Natalia is also good-looking. Vendler (1968:88) correlates this reading with other adjective+noun combinations such as *fast runner* and *slow speaker*. The transformation associated with the last two phrases and the nonintersective reading of *beautiful dancer* is given in (2) (Vendler 1968:88, (III')). The reason Vendler uses the notation N_V rather than N is because the nominals involved in this transformation are formed from a verb, for example *dancer* from *dance*. D_A in this case denotes the adverb formed from the adjective, for instance *beautifully* from *beautiful*. The transformation in (2), then, gives us *dancer who dances beautifully*, *speaker who speaks slowly*, and so on.

(2) $AN_V - N_V \text{ wh... } VD_A$

Another example of ambiguity is *old friend* which can either mean ‘an aged friend’ or ‘a long-time friend’. The first reading, which is the intersective one, is again associated with the transformation in (1), but the second reading cannot be derived from the transformation in (2), as *friend* is not formed from a verb. Even though Vendler does not discuss this specific example, he argues that there are more transformations than the two presented above. One such transformation is given in (3) (Vendler 1968:95, (II)). The nonintersective reading of *old friend* can thus be derived from this transformation, which translates as ‘a friend who is old for/as a friend’.

(3) $AN \leftarrow N \text{ wh... is A for N}$

While Vendler assumes that the ambiguity is the result of distinct transformations, Larson (1995, 1998, 1999) argues that the ambiguity of such adjective+noun combinations arises from the semantics of the noun. As a starting point, Larson adopts Davidson’s (1967) semantics for the combination of verbs and adverbs. Davidson assumes that intransitive action verbs like *dance* contain two arguments; an individual x and an event argument e . Taking this a step further, Larson proposes that nouns like *dance* and *friend* also include an individual x and an event e . As a result, in *Natalia is a beautiful dancer* the individual is Natalia, while the event is ‘dancing’. The ambiguity arises from the ability of the adjective *beautiful* to either modify the individual or the event. The former option, which gives rise to the intersective reading is illustrated in (4a), while the second option which is associated with the nonintersective reading is given in (4b).

(4) a. $\exists e[\text{dancing}(e) \ \& \ \text{Agent}(\text{Natalia},e) \ \& \ \text{beautiful}(\text{Natalia})]$
b. $\exists e[\text{dancing}(e) \ \& \ \text{Agent}(\text{Natalia},e) \ \& \ \text{beautiful}(e)]$

An alternative view, which also takes for granted that meaning differences in adjective+noun combinations arise from the complexity of nouns rather than the ambiguity of adjectives, is given by Pustejovsky (1995). In a nutshell, Pustejovsky claims that the meaning of a lexical item includes several subparts, which he calls *qualia structure*. One such subelement of the qualia structure is what the purpose and function of the meaning of the word is (Pustejovsky 1995:76). To see how this works consider (5), where adjectival modification does not appear to be a simple

intersection between two sets. While some analyses would attempt to explain this by making additions to the semantics of the adjective ‘fast’, in Pustejovsky’s analysis this is the result of the adjective modifying different qualia in each case. One aspect of the meaning of ‘typist’ is ‘the action of typing’, while ‘book’ has a specification for ‘reading’, and ‘boat’ for ‘movable entity’. The adjective modifies different qualia in each case, hence the apparent differences in the meaning of ‘fast’.

- (5)
- a. a fast typist = a person who performs the act of typing quickly
 - b. a fast book = one that can be read in a short time
 - c. a fast boat = a boat that is inherently fast

(Pustejovsky 1995:44)

Another analysis that takes ambiguity to be the result of the complexity of the noun is put forward by Bouchard (2002). Bouchard’s (2002:23) main objection to Pustejovsky’s analysis is that qualia are not grammatical notions and, consequently, there is no independent linguistic motivation for them. This is because qualia are dependent on context and they assume some shared background knowledge between speakers. This, according to Bouchard, is problematic for compositionality as the analysis cannot account for how it is possible for humans to understand sentences never heard before. For his own analysis, Bouchard adopts the theory of Montague Semantics in assuming that nouns always come with the functions in (6). Together, these elements determine the set of things that the noun denotes. When an adjective modifies a noun it picks a subset of the set determined by all these elements.

- (6)
- a. a characteristic function f which provides the property that interprets the N
 - b. a specification for a time interval i which tells us at what moment f holds
 - c. an indication of the possible world w which allows us to know whether f holds in the *actual* world or in some other imagined world in which f is not necessarily false
 - d. a variable assignment function g that allows us to determine the truth value of the final formula by associating each variable with a particular entity in the model

(Bouchard 2002:7–8)

The differences in the semantics arise from the possibility of adjectives to either modify all the subfunctions of the noun, or just some of them. For instance, consider again *old friend*, which is ambiguous between the meanings of ‘aged friend’ or ‘long-time friend’. Bouchard assumes that in the first reading the adjective modifies the whole extension of *friend*, while in the second reading the adjective only modifies the time interval *i*.

While Larson’s, Pustejovsky’s, and Bouchard’s analyses attribute the ambiguity of adjective+noun combinations to the semantic complexity of the noun, the picture becomes less clear if one looks across languages. In particular, if we look at Romance languages we find that adjective+noun combinations that are ambiguous in English are not in Romance, as each interpretation is associated with a different position of the adjective in relation to the noun (Bernstein 1993; Bouchard 2002; Laenzlinger 2005; Cinque 2010, among others). The examples in (7) and (8) lead us to the conclusion that the intersective reading is associated with the postnominal position, while the prenominal position is restricted to the nonintersective interpretation.

- (7) *Italian*
- a. il pover’uomo
the poor-man
‘the pitiable man’
 - b. l’uomo povero
the-man poor
‘the impoverished man’

(Bernstein 1993:24, (40))

- (8) *French*
- a. homme pauvre
man poor
‘not rich man’
 - b. pauvre homme
poor man
‘pitiful man’

(Bouchard 2002:6, (2))

What the above data suggest is that ambiguity in adjective+noun combinations might not be a simple case of semantic complexity, as syntax appears to play an important role in disambiguating these combinations. The next section looks at

the syntactic distribution of adjectives in more detail, in order to explore and further motivate this idea.

2.2.2 Postnominal, prenominal, or both?

As was mentioned in chapter 1 some languages, for example Hebrew and most dialects of Arabic, allow attributive adjectives to only come after the noun:

- (9) *Hebrew*
- a. ha-bait ha-gadol
the-house the-big
 - b. *ha-gadol ha-bait
the-big the-house

Other languages only allow adjectives to come before the noun. English and Greek appear, at first blush, to be instances of such languages:

- (10) *English*
- a. the chubby alien
 - b. *the alien chubby
- (11) *Greek*
- a. o paxulos eksojiinos
the chubby alien
 - b. *o eksojiinos paxulos
the alien chubby
'the chubby alien'

In English, however, there are exceptions to this rule when it comes to a small number of adjectives like *present* and *visible* as in (12). Both the prenominal and postnominal positions are available to these adjectives. In Greek, on the other hand, the same adjectives must still appear before the noun as witnessed in (13).

- (12) *English*
- a. the (present) students (present)
 - b. the (visible) stars (visible)
- (13) *Greek*
- a. i paruses kopeles (*paruses)
the present girls present

- b. ta (orata) asterja (*orata)
 the visible stars visible

As one might expect, the two positions for the English adjectives in (12) are not interchangeable and are associated with different meanings. When the adjective is prenominal it denotes a characteristic property of the noun, while it denotes a temporary property when found postnominally (Bolinger 1967; Sadler and Arnold 1994; Svenonius 1994; Larson 1999; Cinque 2010). This distinction is also known as individual-level vs. stage-level interpretation, where the former corresponds to the prenominal reading and the latter to the postnominal one (Larson 1999; Cinque 2010).

The contrast between the two positions becomes obvious when considering the examples in (12). When *present* is prenominal as in (12a) it has the reading of ‘current students’, while in postnominal position the interpretation changes to ‘the students who are present at the moment’. Similarly, in (12b) *visible stars* is understood to mean the set of all stars that are generally visible from the Earth, while *stars visible* refers to the stars that are visible at a specific moment. The fact that there are two distinct meanings associated with each position is what makes a sentence like (14), where visible surfaces in both positions, acceptable. Such a sentence is felicitous if, for example, it is uttered on a typical foggy night in London.

- (14) There are no visible stars visible tonight.
 visible stars = {Sirius, Canopus, Arcturus, Vega,}
 visible stars visible = \emptyset

Bolinger (1967:9) argues that stage-level adjectives, in his terminology *temporary* adjectives, are predicative and restricted to a postnominal position. In support of this, he provides the example *the man is ready* and argues that the meaning of this sentences is not available to *the ready man*, where *ready* is found in an attributive position.

Larson (1999), however, notes that the stage-level reading is not limited to a postnominal position. Indeed, the sentence in (15), where both adjectives are prenominal, is grammatical and its meaning is identical to that of (14). In this case, it is the leftmost adjective that has a stage-level interpretation, while the adjective closest to the noun is read as individual-level (Parsons 1990:12; Larson 1999:lesson 1).

- (15) There are no visible visible stars tonight.
 visible stars = {Sirius, Canopus, Arcturus, Vega, ...}
 visible visible stars = \emptyset

Cinque (2010) brings together Bolinger's and Larson's points by arguing that stage-level adjectives always have a predicative source, which is available either prenominal or postnominal. The exact mechanism of how this works will be discussed later in this chapter in section 2.4.

As was briefly mentioned in the previous section, Romance languages use adjectives both prenominal and postnominal. The two positions are often associated with different interpretations, as with stage-level and individual-level adjectives in English. We have seen examples of this in (7) and (8), where the adjectives for 'poor' in both Italian and French were interpreted as 'pitiable' prenominal, but as 'impoverished' postnominal. Another example where it is obvious that adjective placement is somehow related to the semantics of the adjective is given in (16).

- (16) *French*
- a. *église ancienne*
 church old
 'church that is old'
 - b. *ancienne église*
 old church
 'former church'

(Bouchard 2002:73, (17))

Unlike in English, in Romance the postnominal position is not limited to just a small number of adjectives. In fact, the postnominal position of adjectives in most Romance languages is the rule rather than the exception. Nevertheless, there are still constraints when it comes to adjective placement. One factor that seems to determine the position of the adjective is its class. For example, colour adjectives in French usually surface after the noun, while other adjectives like 'future' and 'former', which restrict the interpretation of the noun to a specific time frame, are found before the noun:

- (17) a. *la boule rouge*
 the ball red
- b. *le futur président*
 the future president

As Bernstein (1993:25–27) points out, however, variation is found even within Romance. While French and Italian allow both prenominal and postnominal adjectives, adjectives in Walloon are mostly prenominal. In contrast, adjectives in Sardinian dialects, for example Campidanese, are almost always postnominal:

- (18) a. on neûr tchapê *Walloon*
a black hat
b. un chapeau noir *French*
a hat black
(Bernstein 1993:25–26, (43b) & (44b))

- (19) a. one mouyi pîre *Walloon*
a wet stone
b. une pierre mouillée *French*
a stone wet
(Bernstein 1993:25–26, (43g) & (44g))

- (20) a. una dí trista *Campidanese*
a day sad
b. una triste giornata *Italian*
a sad day
(Bernstein 1993:26, (45))

The main question that arises is why languages display this syntactic and semantic asymmetry when it comes to adjectival modification. More specifically, the questions that emerge from the discussion up to this point are the following:

- (21) a. How can the correlation between semantics and adjective placement be accounted for?
b. Why is it that some languages only permit postnominal adjectives, others only prenominal, and others use adjectives in both positions?
c. Why do we find variation in languages that permit both positions? For instance, why does English only allow a very small number of adjectives postnominally, while in French most adjectives are found after the noun?
d. Do adjective classes play an important role in adjective placement, as suggested by the examples in (17)?

In section 2.3 we will see how previous proposals have approached these questions. Before presenting those proposals, however, I will first discuss the different categories of adjectives, a topic that pertains to the last question.

2.2.3 Adjective categories and interpretation

The discussion in section 2.2.1 was based on the idea that semantic ambiguity is sometimes attributed to the semantic complexity of the noun. Nevertheless, in section 2.2.2 we saw that syntax has the ability to disambiguate adjective+noun combinations, something that is unexpected if it is the semantics of the noun that is responsible for ambiguity.

Siegel (1976, 1979) argues that not all adjectives fall under the same category, and proposes that adjectives are divided into two classes. In particular, Siegel calls adjectives that only appear postnominally in English *absolute* as their meaning is not directly bound to the meaning of the noun they modify. An instance of such an adjective is *asleep*. Siegel's assumption is that these adjectives are derived from a predicative source. This means that the underlying form of *the person asleep* is some kind of relative clause like 'the person that is asleep'.

The second category that Siegel proposes consists of adjectives like *former* and *veteran*. She names this category *relative* as the meaning of the adjectives in this case is dependent on the meaning of the noun. The fact that these adjectives are excluded from a predicative position as witnessed in (22), suggests that they cannot be derived from a predicative source in the same way as absolute adjectives but, instead, they must be attributive.

- (22) a. this former president / *this president is former
b. this veteran soldier / *this soldier is veteran

With regard to ambiguous adjectives, like *beautiful* as in the infamous *beautiful dancer*, Siegel claims that they have access to both of the underlying forms. In the case where the interpretation of *beautiful* is 'beautiful as an individual' the adjective has an absolute reading, while in 'beautiful as a dancer' it has a relative reading. Other examples of adjectives that have access to both readings are *old* and *clever*. For example, an old footballer can be someone who is old and is a footballer, but it can also mean that it is someone who is aged as footballers go. Similarly, a clever lawyer can be interpreted as someone who is clever as a lawyer, or a lawyer who happens to be a clever person in general.

Cinque (2010:10–11) also makes use of the distinction between *relative* vs.

absolute readings, but he limits this to scalar adjectives like *big* and *tall*. The example given is *New York's very tall buildings* which can either have a relative reading where the buildings are tall in comparison to other buildings, or it can have an absolute reading where the buildings are tall objects. Cinque (2010:9–10) uses *intersective* and *nonintersective* readings in a way that corresponds to Siegel's absolute and relative readings, respectively. In the intersective reading the combination of an adjective and a noun is interpreted as a simple intersection of sets. For instance, *green alien* denotes the intersection of the set of things that are green and the set of things that are aliens:

$$(23) \quad \llbracket \text{green alien} \rrbracket = \llbracket \text{green} \rrbracket \cap \llbracket \text{alien} \rrbracket$$

The nonintersective reading of an adjective+noun is not to be confused with the category of nonintersective adjectives. The nonintersective reading is a reading that cannot be interpreted as the simple intersection of two sets. An example was given with *old friend*, which is nonintersectively interpreted as 'a long-time friend'. Nonintersective adjectives, on the other hand, are subcategorised to *subsective* and *intensional* (Kamp and Partee 1995). The adjectives belonging to these subcategories denote properties that are dependent on the property of the noun they modify. The difference between them, however, is that subsective adjectives, paralleling intersective adjectives, are predicative and can be interpreted in set theoretical terms, while intensional adjectives are nonpredicative and the adjective+noun combination is not interpreted as a set rule.¹ This is witnessed in (24) and (25), respectively.

(24) *Subsective*

- a. The room is big.
- b. $\llbracket \text{big room} \rrbracket \subseteq \llbracket \text{room} \rrbracket$

(25) *Intensional*

- a. *The president is former.
- b. $\llbracket \text{former president} \rrbracket \neq \llbracket \text{former} \rrbracket \cap \llbracket \text{president} \rrbracket$
 $\llbracket \text{former president} \rrbracket \not\subseteq \llbracket \text{president} \rrbracket$

The fact that intensional adjectives cannot be interpreted in set theoretical terms

¹The term 'predicative' should not be interpreted as 'predicative source'. By 'predicative' I mean that the adjective is allowed to appear in a predicative position, not that it has an underlying predicative derivation. Accordingly, 'nonpredicative' refers to adjectives that are excluded from a predicative position, e.g. *current*.

is what sets them apart from intersective and subsective adjectives. The last two categories are also known as *extensional* adjectives as they modify the *extension* of the noun, rather than its *intension*. Nevertheless, the reason why intersective and subsective adjectives are treated as two distinct categories, becomes obvious when we look at the statements in (26) and (27). The syllogism is valid for the intersective adjective, but not for the subsective adjective. This shows that the adjective in the first case does not depend on the meaning of the noun. If something has a black colour, then it will be black even if we look at the superset of the set that the noun denotes. The meaning of the subsective adjective, on the other hand, is relative to the noun. While the Goliath Beetle is a big insect, it is not true that it is big in comparison to other organisms in the animal kingdom. In fact, it is quite small.

- (26) Ants are black insects.
 Ants are animals.
 ∴ Ants are black animals. (true)
- (27) The Goliath Beetle is a big insect.
 The Goliath Beetle is an animal.
 ∴ The Goliath Beetle is a big animal. (false)

This division, however, is not as sharply defined as it appears to be. Bouchard (2002:68–69, (10) & (11)) gives the contrastive examples in (28) and (29), where it is obvious that the syllogisms in the former are true, but the validity of the latter is questionable even though the adjectives in all instances are intersective.

- (28) a. All mice are mammals.
 Freddy is a white mouse.
 ∴ Freddy is a white mammal. (true)
- b. All tables are pieces of furniture.
 This is a square table.
 ∴ This is a square piece of furniture. (true)
- (29) All men are mammals.
 Denis is a white man.
 ∴ Denis is a white mammal (true?)

Bouchard mentions more examples of colour and shape adjectives, which are

classes that are traditionally thought to be intersective, but which are not as absolute as they first appear to be. For instance, red wine is not the same colour as a red face or a red car. Moreover, a round or a square face is not as round or as square as a table. A way of approaching this problem, however, is to think about which concepts come with a prototype and which do not. According to Kamp and Partee (1995) intersective adjectives come with a prototype, even if the prototype differs from person to person, while subsective adjectives do not. Therefore, ‘red’ in *red wine* and ‘red’ in *red face* both relate to the prototype RED, even if they are not the same shade of red. For an adjective like ‘big’, however, it is not possible to have a prototype BIG. Which is why the size of a big insect is not related to the size of a big animal.

Kamp and Partee (1995) briefly discuss cases of adjectives that are intersective but context-dependent, which were first mentioned in Kamp 1975 and Siegel 1976. These are the adjectives that Siegel (1976, 1979) categorises as being both absolute and relative, for instance, *tall*, *big*, and *old*. Siegel (1979:240) argues that each reading of these adjectives is associated with a different paraphrase. For example, ‘short as a basketball player’ has the relative, nonintersective reading, while ‘short for a basketball player’ has the absolute, intersective reading. On the other hand, true subsective adjectives are only paraphrased with *as*-phrases. Therefore, a *skilful musician* only has the reading of ‘skilful as a musician’ and not ‘skilful for a musician’.

Even though the distinction between these adjective categories does not seem to be clearcut, adjective placement in Italian or French helps clear the picture. As was briefly mentioned in the previous section, intersective adjectives appear postnominally, while nonintersective adjectives are prenominal. Adjectives that are ambiguous between an intersective and a nonintersective reading are found after the noun when they have the former reading, but before the noun with the latter. Interestingly, Bouchard (2002:99, (88)) shows that even ‘skilful’ which is supposedly nonintersective and unambiguous can appear in the postnominal position in French as demonstrated in (30). The adjective comes with a distinct interpretation in each position, and this is supported by Siegel’s (1979) argument that *as*-phrases are nonintersective, while *for*-phrases are intersective.

- (30) a. Enfin un habile chirurgien
 ‘Finally a skilful surgeon (as a surgeon)’
 b. Enfin un chirurgien habile
 ‘Finally a skilful surgeon (for a surgeon)’

The tables in 2.1 and 2.2 summarise the observations so far. The first table illustrates the differences between the different types of adjectives, while the second table gives the syntactic and semantic properties associated with the absolute/intersective and relative/intersective readings.

Table 2.1: Adjective classes

	Intersective	Nonintersective	
		Subsective	Intensional
e.g.	<i>white</i>	<i>big</i>	<i>former</i>
Extensional	✓	✓	✗
Predicative	✓	✓	✗
Has a prototype	✓	✗	✗

Table 2.2: Adjective+noun readings

	Absolute/Intersective	Relative/Nonintersective
e.g.	<i>white</i>	<i>former</i>
Predicative source	✓	✗
Attributive source	✗	✓
In French	postnominal	prenominal
<i>old friend</i>	‘aged friend’	‘long-time friend’

A final distinction of adjectives is *restrictive* vs. *nonrestrictive*. The restrictive interpretation occurs when the adjective restricts the set of things that the noun denotes to a smaller subset. Put differently, the adjective+noun must be a proper subset of the denotation of the noun. For instance, if I am in a room full of aliens of different colours and I say that I kissed a purple alien, then the presence of the adjective narrows down the set of aliens to just the set of purple aliens. On the other hand, an adjective+noun combination is said to be nonrestrictive when the adjective does not narrow down the set of things denoted by the noun. Examples of nonrestrictive adjective+noun combinations are *deadly cobra* (Bolinger 1967:27) and *white snow* (Alexiadou et al. 2007:335). Given that all cobras are deadly and snow is always white, the adjectives in these instances do not bring in any new information that is not already present in the denotation of the noun.

The conclusion drawn from this section is that the semantic differences associated with different classes of adjectives need to be accounted for when considering the syntax of adjectives.

2.3 Earlier proposals

In this section we will look at earlier proposals, which attempted to account for the semantic and syntactic properties described above. The discussion will first focus on traditional analyses which considered adjectival modification to be the result of a relative clause transformation. The second part of this section presents analyses that assume a unique underlying structure for adjectival modification and derive variation via N-movement.

2.3.1 Relative Clause transformation

In traditional transformational grammar, attributive adjectives were assumed to be derived from a relative clause (Smith 1964), along the lines of (31).

$$(31) \quad \left. \begin{array}{l} \text{I bought the table} \\ \text{The table was big} \end{array} \right\} \rightarrow \text{I bought the table that was big} \rightarrow \\ \text{I bought the table big} \rightarrow \text{I bought the big table}$$

(Bolinger 1967:2)

Bolinger (1967) argues against this transformation for several reasons. The first reason has to do with the fact that not all adjectives are allowed in a predicative position, the typical example being intensional adjectives. The reverse is also true; not all adjectives found in a predicative position have access to the attributive position. An example taken from Bolinger (1967:3) is *asleep*, which can be found in *the man is asleep*, but never as **an asleep man*.²

Bolinger also shows that even for attributive adjectives that do appear in a predicative position, there are certain adjective+noun combinations that lack a predicative counterpart. For instance, the predicative equivalent of *an angry storm*, which is *the storm is angry*, is ungrammatical. However, the adjective *angry* is allowed in a predicative position in sentences like *the man is angry*.

Another problem for the relative clause transformation according to Bolinger is that it does not account for the semantic ambiguity associated with the different positions of adjectives. While *the jewels are stolen* is ambiguous, *the stolen jewels* can only have a characteristic reading, and *the jewels stolen* can only have the reading ‘the jewels that were stolen’. The fact that both the prenominal and

²Note that the postnominal position, e.g. *a man asleep* or *a man awake* is acceptable, but it could be that these adjectives are just resultatives. This would account for why they differ from other postnominal adjectives like *present* and *visible* (cf. (12)).

postnominal constructions are derived from the same transformation is problematic if the transformation starts with an ambiguous sentence which is later somehow disambiguated.

A final issue that Bolinger (1967:4) brings up is that attributive adjectives do not always relate to a *be* predication, but they might still relate to other types of predication. This becomes obvious when we look at the following examples:

- (32) a. a stray bullet
 b. *The bullet was stray
 c. The bullet went astray

- (33) a. an eternal friend
 b. *The friend is eternal
 c. S/he is eternally a friend

A more recent analysis by Kayne (1994) revives the idea that attributive adjectives are derived from a reduced relative clause. Kayne assumes that relative clauses are CPs which are the complements of a D^0 head. The head noun is merged inside the CP and the surface order is the result of the noun moving to Spec,CP as shown in (34).

- (34) [DP the [CP [NP alien]_i [that [IP Tom kissed t_i]]]]
-

Kayne analyses prenominal adjectives as prenominal participial phrases such as *the recently sent book*. The difference between this prenominal participial and the postnominal *the book recently sent to me*, which is a reduced relative clause, is that in the prenominal participial *recently sent* is raised to Spec,CP (Kayne 1994:99). Analogously, Kayne assumes that APs are predicates of the relative clause and that they have to undergo predicate raising to Spec,CP as shown below:

- (35) [DP the [CP [AP chubby]_i [C⁰ [IP alien [I⁰ t_i]]]]]]
-

A distinction between participial phrases and adjectives, however, is that the latter cannot stay in a postnominal position. As Kayne (1994:100) acknowledges, there is no explanation as to why this should be the case. In addition, he shows that even in French where adjectives are indeed possible postnominally, there still is a syntactic distinction between adjectives and participial phrases. The

examples Kayne provides to demonstrate this are given in (36). What we notice here is that *celui* can be followed by a full relative or a participial, but not by an adjective.

- (36) a. celui qui a été envoyé à Jean
 the-one that has been sent to Jean
 b. celui envoyé à Jean
 the-one sent to Jean
 c. *celui jaune
 the-one yellow

The above data suggest that postnominal adjectives in French are not a simple case of the AP staying in situ, as the ungrammaticality of (36c) would then be unexpected. A solution to this problem is to assume two separate sources of adjectival modification as proposed by Cinque (1994). In a nutshell, Cinque argues that in addition to the reduced relative source, adjectives can also be generated in the specifiers of various functional heads in the extended nominal projection.³ According to Kayne, if these functional phrases intervene between the determiner and the noun, then there is no need to assume two distinct base generated sites for adjectives. The adjective in French will still be merged inside the relative clause, but the noun will also raise outside the relative clause to some functional head, as illustrated below:

- (37) a. l' extraterrestre vert
 the alien green
 'the green alien'
 b. [DP l' [FP $\overset{\uparrow}{F^0}$ [CP [AP vert]_i [C⁰ [IP extraterrestre [I⁰ t_i]]]]]]]

Even though this derivation gives us the correct surface order, a lot of the criticisms that Bolinger brings up for traditional relative clause transformations still apply to Kayne's analysis. While Kayne tries to dispose of the two separate sources of adjectival generation, the fact that nonpredicative adjectives are excluded from his analysis, means that he has to adopt a mixed analysis at least for nonpredicative adjectives. In addition, this analysis cannot capture how it is possible for the same adjective to be associated with one interpretation when prenominal and another when postnominal. As we have seen, this is a phenomenon observed in both English and Romance. In fact, Kayne's analysis cannot

³The specifics of this analysis will be discussed in sections 2.3.2.3 and 2.4.

account for the semantic ambiguity of adjectives like *beautiful*, which are always prenominal in English, yet they come with distinct readings. A possible solution is to claim that there are various functional heads in the extended projection of C, which come with distinct semantic features and which trigger movement when these are active. As a result, different interpretations would be associated with different functional heads and movement could simply be a parameter, which is why English differs from French when it comes to ambiguous adjectives like *beautiful*. This, however, is only a technical solution and the analysis still fails to include nonpredicative adjectives.

The conclusion drawn from the above mentioned problems is that a pure relative clause derivation for adjectives does not suffice to account for the syntactic and semantic diversity that we find in adjectival modification.

2.3.2 Deriving variation via N-movement

Several analyses of the early 90s argue that variation in adjective placement arises due to N-movement (Valois 1991; Bernstein 1993; Cinque 1994). The central idea is that all languages have the same underlying structure, where adjectives are merged between the determiner and the noun. The fact that some languages allow postnominal adjectives is accounted for by arguing that the noun raises past the adjectives, while in languages with prenominal adjectives the noun stays in situ. In what follows, I will discuss three such analyses, and I will also address the question of whether adjectives are adjoined to maximal projections or generated in the Specifiers of dedicated functional projections.

2.3.2.1 Valois 1991

Following Abney (1987), who draws parallelisms between the clause and the DP, Valois (1991) and Cinque (1994) show that N-movement can be compared to V-movement. As has often been mentioned in the literature, V-movement is obligatory in the case of French, but not in English (Emonds 1976, 1978; Pollock 1989). This is witnessed in the example in (38); the verb must follow the adverb in English, but precede it in French, which suggests that the verb moves past the adverb in the latter case.

- (38) a. I often kiss aliens.
b. J'embrasse_i souvent t_i des extraterrestres.

Valois (1991) also compares adjectives to adverbs, which he argues are split into three categories with respect to their level of adjunction. The *probably* class is structurally the highest inside the IP, the *frequently* class is lower, and, finally, the lowest class is *completely*. Examples that support this order of adjunction are given in (39) and (40).

- (39) a. I'm probably frequently/completely wrong
 b. *I'm frequently/completely probably wrong
- (40) a. My computer frequently completely freezes
 b. *My computer completely frequently freezes

Valois applies the same classification to the corresponding adjectives, as they also seem to adhere to the same order as adverbs. This is witnessed in (41) and (42). Valois assumes that these classes of adjectives are adjoined to either the NumP or No(un)P, or to both.

- (41) a. the probable frequent/complete invasion of Cyprus
 b. *the frequent/complete probable invasion of Cyprus
- (42) a. the frequent complete invasion of Cyprus
 b. *the complete frequent invasion of Cyprus

Another assumption that Valois makes is that in French there is obligatory N⁰-to-Num⁰ movement, which corresponds to the clausal V⁰-to-I⁰ movement. This is how Valois accounts for the fact that most adjectives are found postnominally, as in (43a). While (43a) is the unmarked order in event nominals, the order where the adjective precedes the noun is also acceptable as demonstrated in (43b). Valois claims that in this case, the adjective raises higher than the moved noun, via head-movement. The corresponding derivations for (43a) and (43b) are given in (44a) and (44b).

- (43) a. l' invasion probable de Chypre
 the invasion probable of Cyprus
 b. la probable invasion de Chypre
 the probable invasion of Cyprus
- (44) a. l' [_{Num} invasion_i] probable t_i de Chypre
 b. la [_{Num} probable_k [_{Num} invasion_i]] t_k t_i de Chypre

However, if adjectives are indeed comparable to adverbs, then movement of the adjectives is unexpected. What is generally assumed to move inside the IP to derive the different positions of adverbs across languages is the verb, and not adverbs (Pollock 1989; Belletti 1990). Movement of adjectives is, thus, problematic for Valois’s analysis. Bernstein (1993:58, (113)) points out another drawback of deriving the prenominal position of the adjective via head movement of the adjective itself, which is the fact that both prenominal and postnominal adjectives may be modified by an adverb as shown in the French example in (45). If the adjective raises prenominally via head movement then we expect that modification of the prenominal adjective should result in ungrammaticality, as it is the A^0 alone that incorporates with N^0 .

- (45) a. l’ invasion très probable
 the invasion very probable
 b. la très probable invasion

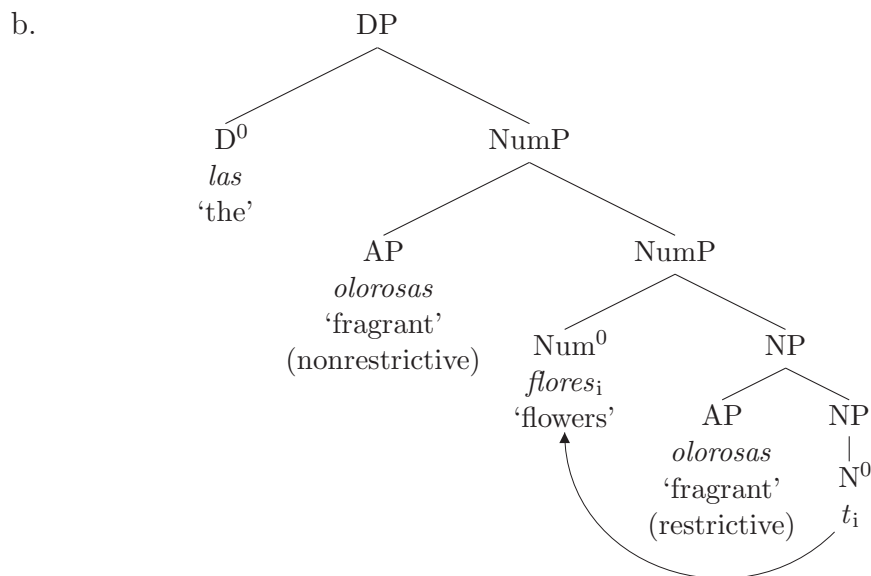
A final problem with Valois’s analysis is that it does not account for the interpretational differences between the prenominal and postnominal placement of the adjective, which, as we have seen, are observed both in Romance and in English.

2.3.2.2 Bernstein 1993

Bernstein (1993) attempts to avoid the problems Valois’s analysis faces by firstly proposing that adjectives have two merging positions inside the DP, which are associated with distinct interpretations. Secondly, Bernstein argues that the postnominal position is derived solely via noun raising, and she does not assume movement of the adjectives. Adjectives that surface in a postnominal position are presumed to be adjoined to the NP, while adjectives that surface prenominally and have a nonrestrictive interpretation are adjoined to NumP. Similarly to Valois, Bernstein assumes that the noun in Romance obligatorily raises to Num^0 . Given that the noun will raise past the NP, the adjectives adjoined to NP will always be postnominal. On the other hand, noun movement does not affect the position of the adjectives adjoined to NumP as the noun only raises up to Num^0 . This is schematically represented in the Spanish example below:

- (46) a. las olorosas flores (nonrestrictive)
 las flores olorosas (restrictive)
 ‘the fragrant flowers’

(Bernstein 1993:50, (89))



Bernstein (1993:51–54) argues that not all prenominal adjectives in Romance behave identically. In particular, she shows that adjectives like ‘mere’ or ‘other’ have different properties than adjectives such as ‘short’ and ‘fragrant’. As demonstrated in the French and Spanish examples in (47) and (48) (taken from Bernstein 1993:51–53, (91)–(96)), ‘short’ and ‘fragrant’ are allowed in a predicative position and in elliptical nominal constructions, but ‘mere’ or ‘other’ are not. While noun ellipsis with *autre* seems to be acceptable in (48d), Bernstein (1993:104, fn. 44) claims that this is in fact a special case where *autre* is either incorporated with D or is a noun.

(47) *Predicative position*

- a. el libro es corto
the book is short
- b. las flores son olorosas
the flowers are red
- c. *el accidente es mere
the accident is mere
- d. *la maison est autre
the house is other

(48) *Noun ellipsis*

- a. uno corto
a short
'a short one'

- b. unas olorosas
some fragrant
'some fragrant ones'
- c. *uno mere
a mere
'a mere one'
- d. un autre
an other
'another'

Another property that sets 'mere' and 'other' apart from other prenominal adjectives is that they cannot be modified. This is what we see in (49) (Bernstein 1993:53–54, (97)–(99)).

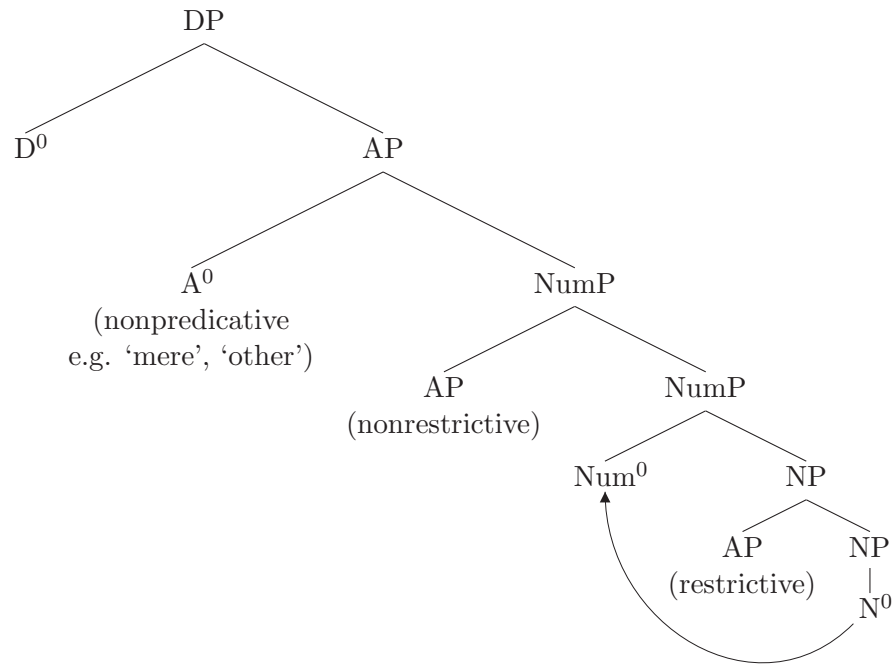
(49) *Modification of adjectives*

- a. el libro muy corto
the book very short
- b. las muy olorosas flores / las flores muy olorosas
the very fragrant flowers / the flowers very fragrant
- c. *un muy mere accidente
a very mere accident
- d. *la très autre maison
the very other house

Taking these differences into account, Bernstein proposes that prenominal adjectives in Romance fall under two categories with regard to their syntax. Adjectives that are excluded in the above environments are assumed to be heads projecting to AP within the extended projection of the NP, while all other prenominal adjectives, which seem to pattern with postnominal adjectives, are APs adjoined to NumP. The three base positions that Bernstein assumes for adjectives are given in (54). The lowest position, where adjectives are adjoined to NP, is the one associated with postnominal adjectives and restrictive interpretation. The position where adjectives are adjoined to NumP is dedicated to nonrestrictive prenominal adjectives that are acceptable in the environments discussed in (47)–(49). Finally, adjectives that behave like heads, for instance 'mere' and 'other', are generated above NumP.⁴

⁴Bernstein (1993:41–44), following Cinque (earlier unpublished versions of Cinque 1994), assumes that theta-bearing adjectives are generated in an even lower position, in Spec,NP. Denominal adjectives such as 'nuclear' and 'electric', where the adjective is interpreted as the agent, as well as ethnic adjectives like in example (50a), are taken to be such adjectives. The evidence that these adjectives differ from attributive adjectives comes from the fact that they

(54)



are ungrammatical when stranded under *ne*-cliticization, or when they appear predicatively. The examples in (50), thus, contrast with (51) where *tedesco* is a true attributive adjective.

- (50) a. l' invasione tedesca della Polonia
the invasion german of Poland
b. *Ne ho vista una tedesca (della Polonia)
NE have seen one German of Poland
c. *l' invasione (della Polonia) fu tedesca
the invasion of Poland was German
(Cardinaletti and Giusti 1991:5, (19a-b), (20a))

- (51) a. un libro tedesco
a book German
b. Ne ho letto uno tedesco
NE have read one German
c. Questo libro è tedesco
this book is German
(Cardinaletti and Giusti 1991:5, (17a-b), (18a))

Nevertheless, Cinque (1994:90–92) questions whether thematic adjectives are indeed generated in Spec,NP and suggests that they might actually compete for the same position as *manner* adjectives, in other words, adjectives that surface postnominally in Romance. His reasoning is that if thematic adjectives are merged lower than manner adjectives, then the sequence in (52) should be possible, but as witnessed in (53) it is not (Cinque's (10) and (11), respectively).

(52) N [XP AP_{manner} t_N [NP AP_{thematic} t_N complement]]


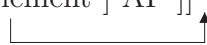
- (53) a. *?l' aggresione brutale italiana all' Albania
the attack brutal Italian to Albania
b. *?la reazione ostile americana alle critiche
the reaction hostile American to criticism

While Bernstein’s analysis attempts to address the interpretational differences associated with each position, it merely describes the phenomenon, in the sense that no explanation is given as to why adjectives should receive a restrictive interpretation when adjoined to NP, but a nonrestrictive reading when they are adjoined to NumP.

2.3.2.3 Cinque 1994

Cinque (1994) also argues in favour of N-movement for deriving the postnominal position of adjectives in Romance. Cinque’s first argument in support of N-movement comes from thematic APs, such as *italiana* in (55). If thematic APs are generated in Spec,XP analogously to subjects in the clause, then the base order would be the one in (55a). The fact that the orders in (55a) and (55c) are ungrammatical suggests that the noun either moves higher than the AP, or that the complement of the noun undergoes heavy-NP-shifting around the AP. Both options are schematised in (56).

- (55) a. *l’ italiana invasione dell’ Albania
the Italian invasion of Albania
b. l’ invasione italiana dell’ Albania
c. *l’ invasione dell’ Albania italiana
- (Cinque 1994:86, (2))

- (56) a. [DP ... [NP AP [N’ N complement]]] *N-movement*

b. [DP ... [NP [N’ N complement] AP]]
 *Heavy-NP-Shift*

However, given that heavy-NP-shifting is an optional process, it is unlikely that the order we find in Romance is the result of this process, as only the order in (55b) is an acceptable order. This leaves N-movement as the only option for deriving the order witnessed in Romance. As Cinque notes, by adopting this hypothesis the differences in adjective distribution across languages come down to noun movement, and it is no longer necessary to assume distinct base structures to accommodate the properties of each language. Under this analysis, in languages like Semitic where adjectives are strictly postnominal, the noun will move to D, while in Romance Cinque claims that the noun moves to some intermediate head between N and D.

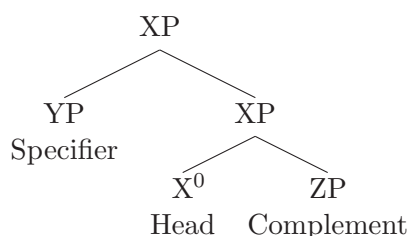
Cinque argues that N-movement alone does not suffice to account for the fact that Romance allows both prenominal and postnominal adjectives. While it might be compelling to assume that the noun moves when adjectives are postnominal, but stays in situ when adjectives surface prenominally, the differences in interpretation associated with each position suggest that this is not a simple case of optional movement. As a result, Cinque argues in favour of distinct base positions in order to capture these interpretational differences.

In fact, Cinque claims that attributive adjectives are generated in the Specs of dedicated functional projections, with which the adjectives are semantically related. An adjective like *big* is, therefore, generated in the Spec of a functional projection (FP) that is related to size, while *blue* is generated in a lower FP that is related to colour. A motivation for this analysis is the fact that adjectives seem to follow a strict unmarked order across languages.⁵ As we have seen in chapter 1, the order in (57) is witnessed in languages with prenominal adjectives, and in some languages with postnominal adjectives. The fact that we find different variations of this order across languages with postnominal adjectives but not across languages with prenominal adjectives, suggests that the prenominal adjective order is the base order.

(57) Quality > Size > Shape > Colour > Nationality

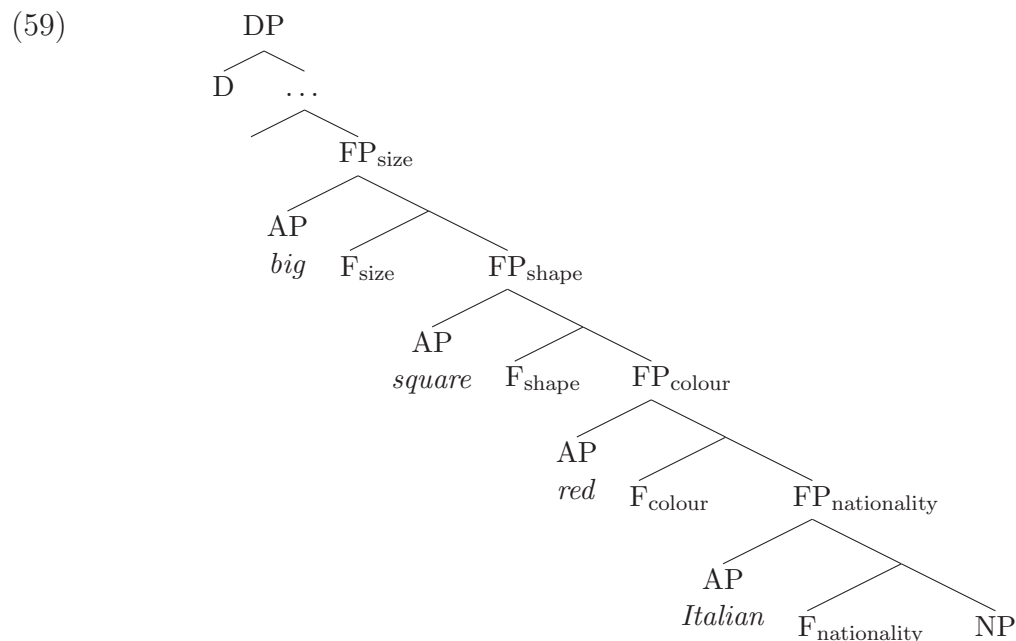
Crucially, Cinque's analysis is modelled after Kayne's (1994) antisymmetric linearisation. Under Kayne's theory all structures in natural language universally follow the linear order of Specifier > Head > Complement. Although the theory itself does not forbid the mirror order, namely Complement > Head > Specifier, Kayne (1994:35-36) argues that typology provides empirical evidence in support of the former order. Specifically, he argues that the most widely attested order between the two, is the order where the specifier precedes the head and complement. The antisymmetric model is schematised in (58).

(58)



⁵The (in)flexibility of adjective ordering across languages is explored further in chapter 3.

If adjectives are generated in the Specs of dedicated functional projections in an antisymmetric model, then the rigidity of the adjective order follows automatically in Cinque’s analysis; given that the functional projections are hierarchically serialised in the extended nominal projection, the adjectives will also be hierarchically organised. This is represented below:



In addition to the attributive positions illustrated above, Cinque (1994) argues that adjectives can also have a predicative source, on the lines of the traditional relative clause transformation. If the adjective has a predicative source, the otherwise ungrammatical order $N \succ \text{Complement} \succ \text{AP}$ in Romance becomes acceptable. Cinque (1994:92) shows that adjectives that appear in this position should not be treated equally to adjectives generated in Spec,FPs as there is an intonational break between the complement and the adjective, and the adjectives either bear special intonation or are heavy APs as shown below:

- (60)
- a. La loro aggressione all' Albania, BRUTALE
the their aggression against Albania, brutal
 - b. La loro aggressione all' Albania, improvvisa e brutale
the their aggression against Albania, sudden and brutal

Support for the proposal that adjectives in this position have a predicative source comes from the fact that the position is strictly available to adjectives that are allowed in postcopular position. Nonpredicative adjectives, such as ‘main’ and ‘former’ are excluded. The examples in (61) and (62) (Cinque’s (1994:93–94)

examples (18) and (19)) show that while *principale* is acceptable in the attributive position, it cannot appear in a postcopular position, and is, therefore, also excluded from appearing in the order N > Complement > AP even when bearing special intonation.

- (61) *Questo motivo è principale
 This reason is main
- (62) a. Questo è il principale motivo della sua partenza
 This is the main reason of his departure
 b. Questo è il motivo principale della sua partenza
 This is the reason main of his departure
 c. *Questo è il motivo della sua partenza, PRINCIPALE
 This is the reason of his departure main

Cinque compares the Romance facts to Germanic, where adjectives tend to appear before the noun, unless they are heavy, as demonstrated in (63). Nevertheless, as shown in (64), nonpredicative adjectives are excluded from the postnominal position even when they are heavy APs. This, as we have seen, is also the case in Romance. It appears, then, that the postnominal position in English is reserved for adjectives that are derived from a predicative construction.

- (63) a. *a man proud
 b. a man bruised and battered
 c. a steak just right
 d. a man proud of his son

(Cinque 1994:94, (20))

- (64) a. the utter indignity
 b. *the indignity is utter
 c. *the indignity, utter and unrelenting

(Abney 1987:209, (382))

A problem for Cinque's analysis, and also for any analysis that derives the postnominal position of adjectives in Romance via N-movement, has to do with the ordering of adjectives when these follow the noun. As Lamarche (1991) first pointed out, when two or more adjectives follow the noun, their order is the mirror image of the English adjective ordering. If N-movement was responsible for deriving the postnominal order in Romance, then we would expect that the

order would not be affected. This is something also noted by Bouchard (2002) and Laenzlinger (2005).

Cinque (1994:101–102) acknowledges the existence of this mirror image order, but argues that the reason we find it in examples such as the ones in (65) is because the rightmost adjective has a predicative source. The unexpected ordering is attributed to the fact that adjectives generated in a predicative construction do not adhere to the ordering restrictions that apply to adjectives generated in Spec,FPs.

- (65) a. un fruit orange énorme
 a fruit orange huge
 ‘a huge orange fruit’
- b. un poulet froid délicieux
 a chicken cold delicious
 ‘a delicious cold chicken’
- c. une personne agée handicapée
 a person elderly handicapped
 ‘a handicapped elderly person’

However, Cinque (2010) admits that his earlier proposal is problematic as the mirror image order is witnessed even with nonpredicative adjectives. In support of this, he provides the Italian example in (66) (his (5), Chapter 1), where both adjectives ‘main’ and ‘probable’ are nonpredicative. The two adjectives must follow the mirror image order of the English translation.

- (66) a. La causa prima più probabile della sua morte (è questa)
 the cause main most probable of his death is this
 ‘the most probable main cause of his death (is this)’
- b. *La causa più probabile prima della sua morte (è questa)
 the cause most probable main of his death is this

Another instance where it becomes evident that the mirror image order is the default order for postnominal adjectives in Romance is when two or more adjectives appear in the same construction as a noun and a complement. Cinque (1994:90, 2010:1) notes that there appears to be a restriction on the number of adjectives that emerge between the noun and its complement. In (67) we see that the noun can optionally raise past *possibile*. However, when the adjective *romana* is also present in the construction as in (68), the adjective *possibile* must surface preminally.⁶

⁶Examples taken from Cinque (2010:1, (1)–(3)).

- (67) a. la sola possibile invasione della Tracia
the only possible invasion of-the Thrace
b. la sola invasione_i possibile t_i della Tracia
the only invasion possible of-the Thrace
‘the only possible invasion of Thrace’
- (68) a. la sola possibile invasione romana della Tracia
the only possible invasion Roman of-the Thrace
b. *?la sola invasione possibile romana della Tracia
the only invasion possible Roman of-the Thrace
‘the only possible Roman invasion of Thrace’

If N-movement is responsible for deriving the postnominal position of the adjectives in Romance, then it is not clear why (68b) should be unacceptable as *possibile* is permitted postnominally. Cinque (2010:2–3) shows that the unacceptability of this example does not have to do with the fact that *possibile* appears postnominally, but rather, it is because the order of the adjectives is problematic. This is verified by the grammaticality of (69), where *romana* and *possibile* surface in the mirror image of the English prenominal order. The mirror image order is, therefore, problematic for a pure N-movement account of the Romance facts.

- (69) la sola invasione romana possibile della Tracia
the only invasion Roman possible of-the Thrace
‘the only possible Roman invasion of Thrace’

A final problem for the N-movement analysis is that it does not predict the correct scopal effects. Bouchard (2002) shows that the postnominal adjective often takes scope over the prenominal adjective in Romance. This is unexpected under an N-movement analysis as the prenominal adjective is assumed to be structurally higher than the postnominal adjective. The scopal effects are demonstrated in the examples below, taken from Bouchard (2002:123, (119)):

- (70) a. un jeune homme obstiné
a young man obstinate
‘an obstinate young man’
b. un [[jeune homme] obstiné]
- (71) a. une mauvaise réputation tenace
a bad reputation persistent
‘a persistent bad reputation’
b. une [[mauvaise réputation] tenace]

The unexpected scope could be argued to be due to the rightmost adjective being generated in a predicative construction, but we have already seen that this was a misleading generalisation to begin with. In addition, Bouchard (2002:124, (121b)) provides the example in (72), where it becomes obvious that even if some of the adjectives had a predicative source it would still not be possible to get all three attested readings.

(72) les présumés professeurs chinois malhonnêtes
 the alleged professors Chinese dishonest

Possible readings:

1. ‘the alleged dishonest Chinese professors’
 les [présumés [[professeurs chinois] malhonnêtes]]
2. ‘the dishonest alleged Chinese professors’
 les [[présumés [professeurs chinois]] malhonnêtes]
3. ‘the dishonest Chinese alleged professors’
 les [[[présumés professeurs] chinois] malhonnêtes]

Firstly, if the rightmost adjective has a predicative source, then the corresponding reading should be the second one, where *malhonnêtes* takes scope over the other two adjectives. As for the other two adjectives in the second reading, *présumés* takes scope over *chinois*, something that is expected under an N-movement analysis, as the former is structurally higher than the latter. The third reading is not problematic either, as long as we take both *malhonnêtes* and *chinois* to have a predicative source.

The real problem, however, is presented with the first reading where *malhonnêtes* takes scope over *professeurs chinois*, and *présumés*, in turn, takes scope over *professeurs chinois malhonnêtes*. In this case, it cannot be argued that *malhonnêtes* has a predicative source, as it is found under the scope of the nonpredicative adjective *présumés*. An adjective generated in a predicative construction must scope over any nonpredicative attributive adjectives (Cinque 2010).

All of the above problems, therefore, remain unaccounted for under not just Cinque’s (1994) analysis, but any N-movement analysis. In the following section we will see that Cinque’s (2010) refined analysis eliminates these problems, simply by replacing N-movement with phrasal movement. In addition, Cinque (2010) shows that the interpretational differences associated with adjectival placement are in fact the result of the two distinct base positions.

2.4 Cinque 2010

Cinque (2010) captures the semantic and syntactic puzzles, and derives the ordering restrictions observed cross-linguistically by building on the main ideas of his earlier work (Cinque 1994). The first idea is that there are two distinct sources of adjectival modification; adjectives are either merged in the specifiers of dedicated functional projections, or they have a predicative source, in which case, Cinque (2010) assumes that they are merged inside a reduced relative clause. The second idea is that there is a unique underlying structure of adjectival modification that adheres to Kayne's (1994) antisymmetric model, and movement is what derives the variation witnessed across languages. In contrast to Cinque (1994), however, movement is always phrasal and not simple N-movement. In what follows I discuss Cinque's (2010) analysis in more detail.

2.4.1 Interpretational differences

Cinque shows that there is a systematic contrast between Romance and Germanic when it comes to adjective position and interpretation. Generally, adjectives that come before the noun in English are semantically ambiguous, while adjectives that follow the noun are not. In Italian, on the other hand, ambiguity is observed with postnominal adjectives, while prenominal adjectives are always unambiguous. This means that the Romance generalisation mentioned earlier, which took prenominal adjectives to be associated with one reading and postnominal adjectives with another, does not hold in the expected fashion cross-linguistically. According to Cinque, the contrast between English and Italian, seems to be observed across Germanic and Romance.

The first difference between the two language families is observed with stage- vs. individual-level readings. In the English examples (14) and (15) we saw that the adjective *visible* only has a stage-level reading when postnominal, but can either have a stage or an individual reading when prenominal. This becomes obvious in the examples below, where the continuation of the sentence with *but not Arcturus or Vega* is only acceptable with the stage-level reading. If the sentence in (74) has an individual reading, then this is an invalid continuation as Arcturus and Vega are in fact visible from the Earth regardless of whether they are visible at a given moment.

(73) The stars **visible** include Sirius and Canopus (but not Arcturus or Vega).

- (74) The **visible** stars include Sirius and Canopus.
 Stage-level: (but not Arcturus or Vega)
 Individual-level: #(but not Arcturus or Vega)

In Italian we observe the reverse phenomenon. When postnominal, *invisibili* is ambiguous between the two readings, but it can only have an individual-level interpretation when prenominal. This is witnessed in the following examples (Cinque 2010:7, (3) & (4), respectively):

- (75) a. Le **invisibili** stelle di Andromeda esecritano un grande
 the invisible stars of Andromeda have a great
 fascino
 fascination
 b. ‘Andromeda’s stars, which are generally invisible, have a great fascination’ (individual-level)
 c. #‘Andromeda’s generally visible stars, which happen to be invisible now, have a great fascination’ (stage-level)
- (76) a. Le stelle **invisibili** di Andromeda sono moltissime
 the stars invisible of Andromeda are very-many
 b. ‘Andromeda’s stars, which are generally invisible, are very many.’
 (individual-level)
 c. ‘Andromeda’s generally visible stars, which happen to be invisible now, are very many.’ (stage-level)

Another example of ambiguity is found with restrictive vs. nonrestrictive readings. As witnessed in examples (77) and (78) (Cinque 2010:7–8, (5) & (6)), the adjective *unsuitable* can either have a restrictive or a nonrestrictive meaning when prenominal. However, when the same adjective appears postnominally, only the restrictive reading is felicitous. In the Italian examples in (79) and (80) (Cinque 2010:8, (7) & (8)) ambiguity is found in the postnominal position, while the prenominal position is reserved for the nonrestrictive reading.

- (77) a. All of his **unsuitable** acts were condemned
 b. ‘All his acts were condemned; they were unsuitable’ (nonrestrictive)
 c. ‘All (and only) his acts that were unsuitable were condemned’
 (restrictive)
- (78) a. Every word **unsuitable** was deleted
 b. #‘Every word was deleted; they were unsuitable’ (nonrestrictive)

- c. ‘Every word that was unsuitable was deleted’ (restrictive)
- (79) a. Le **noiose** lezioni di Ferri se le ricordano tutti.
the boring classes of Ferri remember all
- b. ‘Everybody remembers Ferri’s classes, all of which were boring’
(nonrestrictive)
- c. #‘Everybody remembers just those classes by Ferri that were boring’
(restrictive)
- (80) a. Le lezioni **noiose** di Ferri se le ricordano tutti.
the classes boring of Ferri remember all
- b. ‘Everybody remembers Ferri’s classes, all of which were boring’
(nonrestrictive)
- c. ‘Everybody remembers just those classes by Ferri that were boring’
(restrictive)

An additional ambiguity is observed with adjectives such as *possible* which can either have a modal interpretation or an implicit relative clause interpretation as in the English example in (81). The modal reading becomes unavailable in English when the adjective is postnominal, while in Italian it is the only available reading when the adjective appears before the noun (Cinque 2010:8–9, (9)–(12)):

- (81) a. Mary interviewed every **possible** candidate.
b. ‘Mary interviewed every potential candidate.’ (modal)
c. ‘Mary interviewed every candidate that it was possible for her to interview.’ (implicit relative clause)
- (82) a. Mary interviewed every candidate **possible**.
b. #‘Mary interviewed every potential candidate.’ (modal)
c. ‘Mary interviewed every candidate that it was possible for her to interview.’ (implicit relative clause)
- (83) a. Maria ha intervistato ogni **possibile** candidato.
Maria has interviewed every possible candidate
b. ‘Mary interviewed every potential candidate.’ (modal)
c. #‘Mary interviewed every candidate that it was possible for her to interview.’ (implicit relative clause)
- (84) a. Maria ha intervistato ogni candidato **possibile**.
Maria has interviewed every candidate possible
b. ‘Mary interviewed every potential candidate.’ (modal)

- c. ‘Mary interviewed every candidate that it was possible for her to interview.’ (implicit relative clause)

Earlier in this chapter we saw that *beautiful dancer* is ambiguous between the intersective reading ‘beautiful as a person’ and the nonintersective reading ‘beautiful as a dancer’. When *beautiful* is found postnominally, however, it can only have the intersective reading as shown in (85) (Cinque 2010:10, (14)).

- (85) a. Olga is a dancer more **beautiful** than her instructor.
- b. ‘Olga is a dancer who is also a more beautiful person than her instructor.’ (intersective)
- c. #‘Olga dances more beautifully than her instructor’ (nonintersective)

In Italian, on the other hand, the adjective *buon* ‘good’ is unambiguously nonintersective prenominal, but either intersective or nonintersective postnominally (Cinque 2010:10, (15)–(16)):

- (86) a. Un **buon** attaccante non farebbe mai una cosa del genere.
a good forward not would-do never a thing of-the kind
- b. ‘A forward good at playing forward would never do such a thing.’ (nonintersective)
- c. #‘A good-hearted forward would never do such a thing.’ (intersective)
- (87) a. Un attaccante **buon** non farebbe mai una cosa del genere.
a forward good not would-do never a thing of-the kind
- b. ‘A forward good at playing forward would never do such a thing.’ (nonintersective)
- c. ‘A good-hearted forward would never do such a thing.’ (intersective)

Cinque (2010:5–17) mentions more interpretive asymmetries between English and Italian, which are summarised in tables 2.3 and 2.4. The generalisation that holds is that the prenominal position in English is ambiguous, while in Italian ambiguity is associated with the postnominal position. Moreover, the postnominal position in English and the prenominal position in Italian are unambiguous, but the unambiguous readings in the two languages have the opposite values. For instance, postnominal adjectives in English are always intersective, while prenominal adjectives in Italian must be nonintersective.

Cinque concludes that adjectives which appear postnominally in English are always merged in a reduced relative clause. One of the indications that this is

Table 2.3: English (Germanic) readings

Prenominal adjectives	N	Postnominal adjectives
stage-level or individual-level restrictive or nonrestrictive implicit relative clause or modal intersective or nonintersective relative or absolute comparative or absolute reading of superlatives specificity- or nonspecificity- inducing evaluative or epistemic reading of 'unknown' NP-dependent or discourse anaphoric reading of 'different'		stage-level restrictive implicit relative clause intersective [cannot be tested] [cannot be tested] specificity- or nonspecificity- inducing [cannot be tested] [cannot be tested]

Table 2.4: Italian (Romance) readings

Prenominal adjectives	N	Postnominal adjectives
individual-level nonrestrictive modal nonintersective absolute absolute reading of superlatives specificity-inducing evaluative reading of 'unknown' NP-dependent reading of 'different'		individual-level or stage-level restrictive or nonrestrictive implicit relative clause or modal intersective or nonintersective relative or absolute comparative or absolute reading of superlatives specificity- or nonspecificity- inducing evaluative or epistemic reading of 'unknown' NP-dependent or discourse anaphoric reading of 'different'

the case, is the fact that only predicative adjectives are allowed in this position. More supporting evidence comes from the fact that the interpretation of English adjectives in this position is identical to that of adjectives inside restrictive relative clauses. This is obvious when we compare the examples (82a) and (82c), as well as the following pair:

(88) the students present = the students who are present

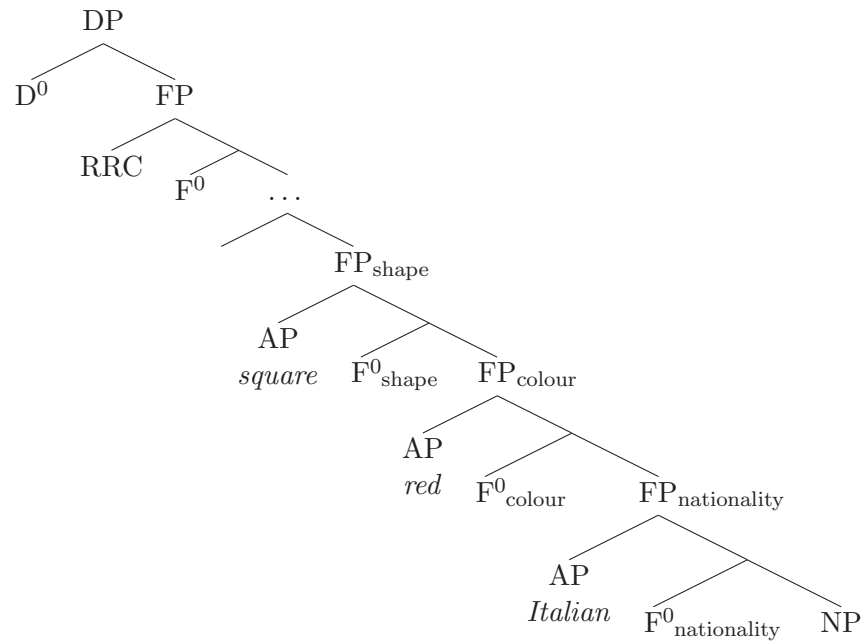
As a result, adjectives that share the interpretational properties of postnominal adjectives in English are assumed to have a predicative source. On the other hand, prenominal adjectives in Italian are argued to be adjectives that directly modify the noun and which are, therefore, merged inside the Specifiers of dedicated functional projections. Consequently, any adjectives that share the interpretational properties of prenominal adjectives in Italian must be APs merged in a Spec,FP. In the next subsection we will look at the syntactic positions of the two adjectival sources inside the DP.

2.4.2 Deriving variation in adjective order and placement

As in Cinque 1994, adjectives that directly modify the noun are taken to be merged in the specifiers of functional projections with which they are semantically related. These functional projections are hierarchically organised between N^0 and D^0 . Cinque (2010) assumes that the reduced relative clause (RRC) is also merged prenominally, in the specifier of another FP which is structurally higher than direct modification adjectives.⁷ The proposed structure is given below:

⁷Cinque (2010, chapter 3, n. 2) provides cross-linguistic evidence which show that reduced relatives are always further away from the noun than direct modification adjectives.

(89)



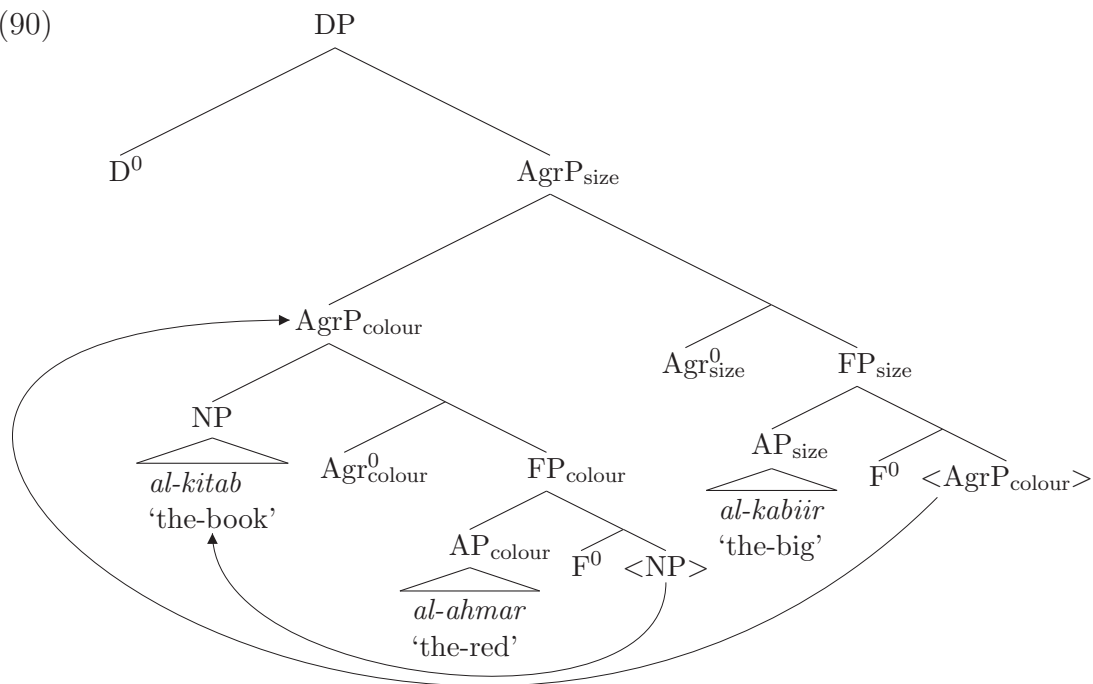
Cinque argues that this is the underlying structure of adjectival modification, and that any other order is derived via movement. As was mentioned in section 2.3.2.3 N-movement alone does not adequately generate all possible orders of modifiers within the DP.⁸ In addition to modifier ordering, there are independent reasons to exclude head movement. One of the most well-known problems of head movement is that once the head adjoins to another head, it is unable to c-command its original merging position as it is too deeply embedded in the structure (Brody 2003; Matushansky 2006; Georgi and Müller 2010).

In order to avoid the problems that come with N-movement Cinque, and also Shlonsky (2004) and Laenzlinger (2005), propose that variation attested across languages is the result of NP-movement. The NP can either move alone or as part of a larger phrase, thus deriving all possible orders.

The postnominal mirror image order, which is the default order of adjectives in most Semitic languages, and also Romance, is derived via roll-up movement. The tree in (90) illustrates how the mirror image order of a size and colour adjective in Standard Arabic is derived. Both Shlonsky (2004) and Cinque (2010) assume that the NP first moves above the FP where the colour adjective is merged, to some agreement phrase. From there, the whole AgrP associated with the colour FP will move even higher, to the specifier of the agreement phrase above FP_{size}.

⁸Also see Cinque (2000) and Shlonsky (2004) for evidence in favour of phrasal movement for Semitic, and Cinque (2005) for a cross-linguistic discussion.

(90)

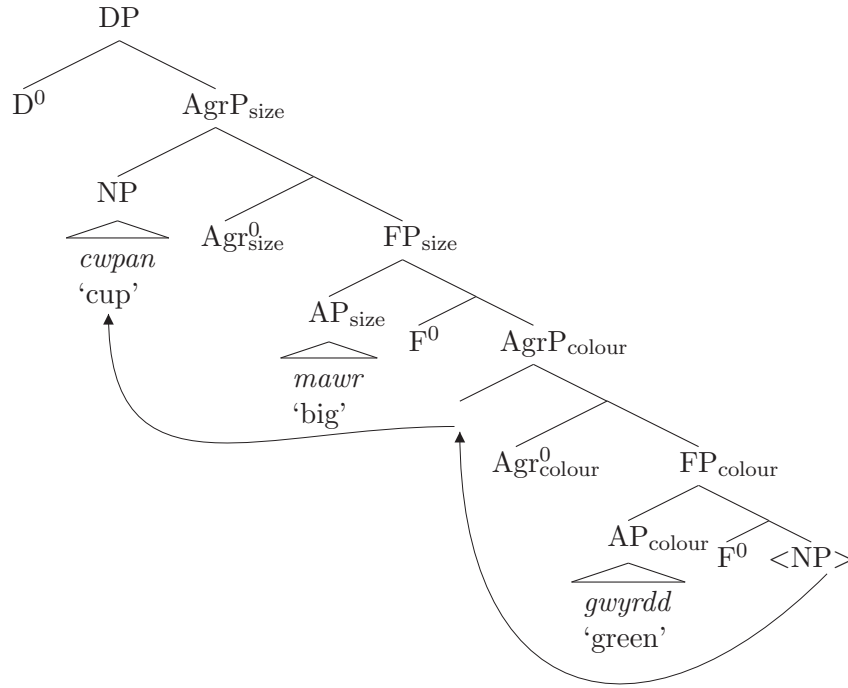


If more adjectives are present in the structure, for instance a shape adjective which normally intervenes between size and colour adjectives, then $\text{AgrP}_{\text{colour}}$ will first stop to the specifier of $\text{AgrP}_{\text{shape}}$. From there, $\text{AgrP}_{\text{shape}}$, containing the noun, as well as the colour and shape adjectives, will move above FP_{size} to $\text{Spec, AgrP}_{\text{size}}$. This would derive the order $N \succ \text{Colour} \succ \text{Shape} \succ \text{Size}$.⁹

The second postnominal order, where adjectives retain the prenominal ordering as in Welsh, is derived via cyclic movement of the NP to the specifier of each AgrP as in (91). Considering that the NP moves alone, and not as part of a larger phrase, the ordering of the adjectives is not affected and they surface in their underlying order.

⁹Shlonsky's and Cinque's analyses of deriving the mirror image order are discussed thoroughly in section 5.6.1, chapter 5. I also present a base generation analysis in the same section.

(91)



The two postnominal orders presented here are not exhaustive. The reason it is possible to find more postnominal orders is due to parameterisation of movement in different languages. Cinque (2005) goes into detail about how these two types of movement, i.e. roll-up and cyclic NP-movement, suffice to derive all attested orders between Demonstratives, Numerals, Adjectives and Noun, as long as the phrase that moves in the structure contains the NP. Roll-up movement, for instance, can take place even without the NP having moved first, something that would derive a different order from the two orders discussed so far. If we apply this movement to the tree in (90), then the whole $\text{AgrP}_{\text{colour}}$, with the NP in situ, will move to $\text{AgrP}_{\text{size}}$. The resulting order of such movement would be Colour \succ N \succ Size, which, deducing from Cinque's (2005:321) generalisations, should be more marked than the order N \succ Colour \succ Size. Another example of a possible movement which is, nevertheless, also marked is partial movement of the NP with or without pied-piping.

The derivations so far, have shown how variation is accounted for with direct modification adjectives. What needs to be addressed next is how adjective placement is accounted for when predicative source adjectives are in the structure. Cinque argues that predicative source adjectives in English can either be prenominal or postnominal. If they are prenominal, then the ordering of the adjectives is free. For instance, while the unmarked order of colour and size adjectives is the one where colour is found to the right of size, the phrase *the blue big*

house is acceptable and this is attributed to the ability of *blue* to be merged in a RRC. In this case, it is assumed that the *big* is merged in a functional projection related to size, while *blue* is merged structurally higher inside the RRC.

With regard to the few postnominal adjectives in English, which are always analysed as having a predicative source, Cinque assumes that the NP, or a larger phrase which contains both direct modification adjectives and the NP, raises above them. The question is why this movement is only obligatory with a small number of adjectives, and not with any predicative source AP. As we saw earlier, postnominal APs in English tend to be complex:

- (92) a. *a father proud
 b. a father proud of his daughter

Cinque (2010:62) claims that “bare” APs in RRCs behave differently than complex APs in RRCs. The latter, he proposes, pattern with participial reduced relative clauses in that they permit “extraposition”.¹⁰ As suggested by (93a), extraposition appears to be optional with participial RRCs. However, if the participial comes with a complement or an adjunct, then only the postnominal position is available as shown in (93b). This is also evinced with complex APs (93c).¹¹

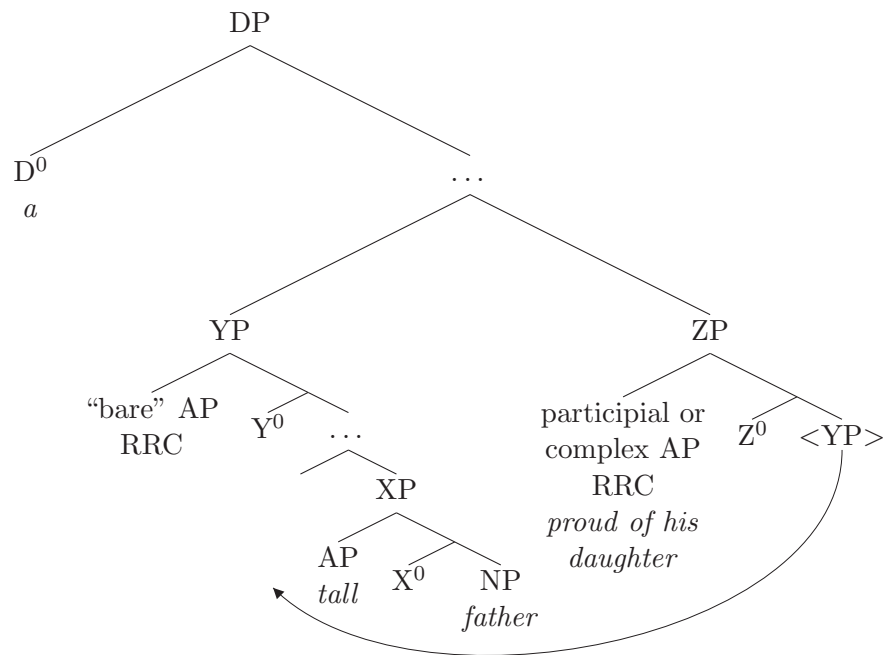
- (93) a. The (recently elected) president (recently elected).
 b. The (*recently sent to me) letters recently sent to me.
 c. The (*proud of his daughter) father proud of his daughter.

Taking this observation into account, Cinque suggests that participial and complex AP RRCs are merged higher than “bare” APs in RRCs in the structure. Extraposition can therefore only take place with APs that are merged in the higher RRC position. In (94) we see how the phrase *a tall father proud of his daughter* is derived.

¹⁰Cinque (2010:chapter 5, n. 11) uses the term *extraposition* to mean leftward attraction and subsequent leftward remnant movement.

¹¹This restriction found with prenominal participials and complex APs is still not well understood. For discussion see, among others, Williams (1981b), Escibano (2004) and works cited there.

(94)



As for Italian, given that all predicative source APs surface postnominally, Cinque assumes obligatory movement of the NP and its direct modifiers above the reduced relative position. Whether the NP will move above direct modification adjectives as well is optional, although it seems to be obligatory with classificatory (e.g. *electrical*) and nationality adjectives, but disallowed with intensional adjectives:

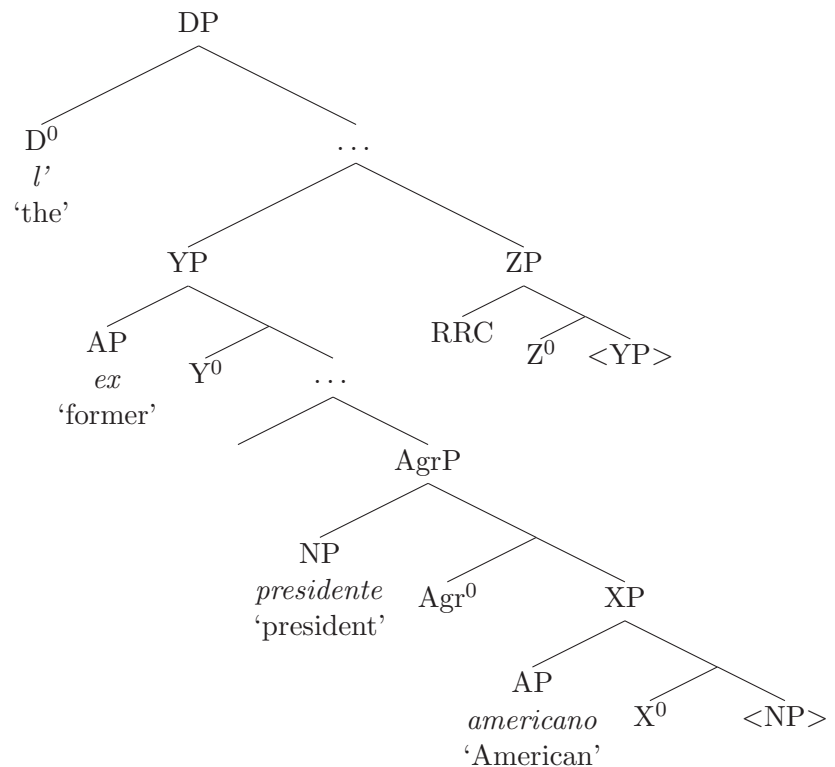
- (95) a. *un cinese vaso
a Chinese vase
- b. un vaso cinese
a vase Chinese

(Cinque 2010:72, (8))

- (96) a. l' ex presidente
the former president
- b. *il presidente ex
the president former

The derivation for the Italian phrase *l'ex presidente americano* 'the former American president' is given in (97). The NP obligatorily moves past the nationality adjective to the Spec of some AgrP, but does not raise past the intensional adjective. Then the larger phrase that contains the direct modification adjectives and the NP raises above the RRC.

(97)





Let us now go back to the questions asked earlier in the chapter, which are repeated below. Cinque's analysis seems to address most of these questions.

- (21)
- How can the correlation between semantics and adjective placement be accounted for?
 - Why is it that some languages only permit postnominal adjectives, others only prenominal, and others use adjectives in both positions?
 - Why do we find variation in languages that permit both positions? For instance, why does English only allow a very small number of adjectives postnominally, while in French most adjectives are found after the noun?
 - Do adjective classes play an important role in adjective placement, as suggested by the examples in (17)?

With regard to the first question, in Cinque's system the semantic distinction is a direct result of the existence of two syntactically distinct sources of adjectival modification. This assumption, therefore, adequately captures the correlation between syntax and semantics.

The diversity observed in the placement of adjectives across languages is the outcome of phrasal movement in some languages. In languages like Greek, where

adjectives are strictly prenominal, the NP stays in situ, and as a result the surface order of adjectives corresponds to the base structure.¹² In languages where adjectives are found postnominally, Cinque claims that the NP bears a nominal feature which triggers movement. Languages parameterise as to whether the NP will move alone or as part of a larger phrase that contains the NP. Crucially, the phrase that moves will always need to contain the NP. Cinque (2010:39) compares this to *wh*-movement; given that the *wh*-feature, which triggers movement, is on the *wh*-word alone, movement of any other phrase that does not carry the *wh*-feature to a +*wh*-position is forbidden. This is what we see in (98) where *book* can only move if it is part of the phrase bearing the *wh*-feature.

- (98) a. [Which book]_i did you buy *t*_i?

- b. *book_j did you buy [which *t*_j]?


The possibility of allowing both prenominal and postnominal adjectives in some languages is attributed to a number of different reasons, which is why we find variation across languages as pointed out in question (21c). For instance, the postnominal position in English is reserved for complex APs merged inside a RRC, and not for any AP that has a predicative source, or for direct modification adjectives. Movement, therefore, is permitted with participials and complex APs, but not with any modifiers that are structurally lower. This is why in English only a small number of adjectives is found in that position. On the other hand, movement in Italian is always obligatory past APs merged inside RRCs, and also past any nationality or classificatory adjectives in direct modification. Moreover, movement is optional above all other classes of adjectives in direct modification, with the exception of intensional adjectives. Considering that only intensional adjectives block movement, it becomes obvious why the postnominal position in Italian is more frequently attested than the prenominal one.

This observation brings us to the final question, that is, whether the class of an adjective determines the position in which the adjective will surface. We saw that this is what appears to be the case in Italian, at least with nationality/classificatory and intensional adjectives. However, the reason as to why movement should be obligatory in the former case, but disallowed in the latter,

¹²The prenominal restriction only applies to Greek *monodefinites*. Adjectives in *polydefinite* constructions are allowed both prenominally and postnominally. For a discussion on Greek polydefinites see chapter 4.

remains an open question. Moreover, it is unclear why movement should be optional with all other classes in Italian. If it is a feature that triggers movement, then why is it optional for the feature to be present with some classes, but not others? An alternative to Cinque’s antisymmetric approach is base generating the different positions of the adjectives instead of deriving the order via movement. If we follow a base generation analysis then there is no reason to stipulate a movement-triggering feature.¹³

While Cinque’s analysis leaves some questions unanswered, it appears to capture several puzzles associated with adjectival modification, and provides a unified analysis of adjectival modification across languages. The following chapters in this thesis, therefore, build on Cinque’s analysis. In the remainder of this chapter I explore the idea that there are dedicated functional projection in the extended nominal projection in more detail. Specifically, I compare the dedicated functional projections analysis to adjunction, and present alternative analyses which merge adjectives in independently motivated functional heads.

2.4.3 Adjunction vs. Dedicated Functional Projections

The first two N-movement analyses presented in section 2.3.2, namely Valois’s and Bernstein’s, propose an adjunction analysis, while Cinque (1994, 2010) assumes that adjectives are generated in the Specs of dedicated functional projections. Bernstein (1993) provides several arguments against the dedicated functional projection (hereafter DFP) analysis. Firstly, she refers to proposals on the Romance nominal phrase, which assume that arguments of the DP occupy Spec positions of XPs in the extended nominal projection, and can also undergo raising to higher Specs (Piccallo 1991, 1994; Valois 1991). For instance, Piccallo (1994) claims that the possessive pronoun in Catalan is base generated in Spec,NP and that it raises cyclically to Spec,NumP in order to be identified. The presence of adjectives in intermediate Specs would, therefore, block such movement, but adjoined APs would not. In Cinque 2010, however, where adjectives are again merged in the specifiers of dedicated functional projections this does not pose a problem as there are AgrPs above each FP, where the noun can optionally move. As a result, the fact that the Specs of the FPs are filled does not block movement.

An additional argument against the DFP analysis according to Bernstein

¹³This generalisation is not as simple as it sounds, as movement is still necessary in some cases in order to derive the right order. In chapter 5 I talk about the base generation analysis in more detail, and compare it to Cinque’s analysis.

(1993:40), is that it is too restrictive. In particular, Bernstein claims that the adjective order is not as fixed as Cinque’s analysis predicts. In chapter 3, however, it will be shown that in the instances where the order is violated, there is always an independent factor that accounts for the flexibility of the order. An example of such a factor is focus fronting. The adjunction hypothesis, on the other hand, allows free ordering and, as a result, the ordering restrictions observed cross-linguistically have to be accounted for by stipulating some semantic or processing motivation.

A second restriction of the DFP analysis is that it predicts that adjectives of the same semantic class will be barred from appearing in the same phrase, as there is only a single FP dedicated to each class. Bernstein (1993:40, fn. 31) provides the examples in (99) as counter-evidence of this prediction. In these examples, the underlined adjectives are taken to belong to the same semantic class.

- (99) a. the nice big round ball
 b. the long narrow white shelf

However, these examples do not actually contradict Cinque’s analysis. Firstly, the two adjectives in (99a) belong to two separate classes; *big* is related to Size and *round* to Shape. That these are two distinct classes is also verified by the fact that they belong to different categories under set theory. This was discussed in section 2.2.3, where we saw that adjectives relating to size are traditionally taken to be subjective, while shape adjectives are intersective.

As for the two adjectives in (99b), *long* and *narrow*, these would indeed fall under the category of Size. Nevertheless, Scott (2002) argues that the Size class needs to be further decomposed as adjectives that belong to this class appear to exhibit ordering restrictions. For instance, *tall* tends to appear before *thin* (*a tall thin girl* vs. *#a thin tall girl*). After presenting the relevant data, Scott concludes that there needs to be a core Size class, which consists of adjectives like *big* and *small*, but he also adds the classes of Length, Height, Width and Weight. The universal order that Scott (2002:114) proposes, which includes several new classes, is presented below:

- (100) DETERMINER > ORDINAL NUMBER > CARDINAL NUMBER > SUBJECTIVE COMMENT > ?EVIDENTIAL > SIZE > LENGTH > HEIGHT > SPEED > ?DEPTH > WIDTH > WEIGHT > TEMPERATURE > ?WETNESS > AGE > SHAPE > COLOR > NATIONALITY/ORIGIN > MATERIAL

If Scott is correct, then (99b) is no longer problematic for Cinque's analysis, as *long* and *narrow* fall under distinct classes and are, consequently, generated in the Specs of separate FPs. That said, the DFP analysis does indeed block adjectives that belong to the same semantic category from appearing in the same phrase. This, however, is the correct prediction, as two adjectives that belong to the same class will have to be coordinated when appearing inside the same phrase. This becomes evident when we look at examples with two colour adjectives. If a ball is half white and half black, then describing it as *the black white ball* or *the white black ball* sounds odd, while the coordinated equivalents (*the black and white ball* or *the white and black ball*) are acceptable.¹⁴ The colour example is, therefore, problematic for the adjunction analysis as there are no syntactic constraints barring two adjectives of the same semantic class from appearing together.

The problem for Scott, however, and also for anyone who attempts to deal with the issue of how many dedicated functional heads exist inside the DP, is that it is difficult to know how far down that road one can go. Even Scott himself acknowledges that by proposing new categories one runs into the risk of not knowing when to stop (Scott 2002:116, fn. 20). According to Cinque (1994:96) there appears to be a limit on the number of attributive adjectives within the same DP (no more than six or seven). This, Cinque claims, is an argument in favour of the DFP analysis; an adjunction analysis cannot account for this number restriction, while it automatically follows from Cinque's analysis as there is a limited number of function projections in which adjectives are generated.

If the functional projections are limited to six or seven, then Scott's (2002) decomposition of the semantic classes introduced by Cinque (1994) becomes redundant. As a consequence, Scott would have to account for the ordering restrictions he discusses, by employing some non-syntactic constraints as the number of adjective classes in his account exceeds the presumed number of functional projections. This conclusion could, in turn, be damaging to the DFP analysis, since the main idea behind it is that the cross-linguistic ordering restrictions are

¹⁴Examples like *a Greek Cypriot song*, where two nationality adjectives appear together, should not be considered to be counterexamples, as the two adjectives possibly form a compound in this case. A language which uses compounding for adjectives that fall under the same semantic class is Greek. Some examples are *aspro-mavro* 'white-black', *elino-kipriako* 'Greek-Cypriot', *makro-steno* 'long-narrow', *steno-makro* 'narrow-long', but not **steno-mavro* 'narrow-black'.

always the result of a universal syntactic hierarchy.

However, it could be argued that there is no need to decompose the core semantic classes introduced by Cinque. The idea would be that the dedicated functional projections are semantically related to some general basic class. For instance, the Size class would also include height and length adjectives, and so on. The relative order of the adjectives within each class might be the result of an independent factor, for instance, a frequency effect.

This claim could be supported by the fact that the different size-type adjectives that Scott (2002) introduces do not always have clearcut ordering restrictions between them. For instance, while Scott argues that a length adjective must precede a height adjective, some native English speakers do not get a clear contrast between phrases such as *a long tall table* and *a tall long table*. They do, however, notice a contrast across other classes, for example, *a nice big smile* vs. *#a big nice smile*, and *a big square table* vs. *#a square big table*. This could, therefore, suggest that adjectives which are semantically related, but which still denote different enough qualities of the noun, might be adjoined to the same functional projection, something that would account for the flexibility of their ordering.¹⁵ Making use of adjunction within each class, does not undermine the adjectives-in-Specs analysis as the semantically unrelated classes will still be generated in the specifiers of dedicated functional projections.

Another example that might support the idea that there is no need to assume further decomposition of the Size class comes from Greek. As was mentioned in footnote 14, in Greek it is possible to form compounds from two adjectives belonging to the same semantic class, but not from adjectives across distinct classes. The examples given were *steno-makro* ‘narrow-long’ (or *makro-steno*) and **steno-mavro* ‘narrow-black’. If width and length adjectives belonged to two separate classes, then we would expect that compounding of these two adjectives would have been unacceptable.

In conclusion, while there seem to be arguments for and against both proposals, it appears that the adjunction analysis causes more problems than it solves. The main drawback of adjunction is not being able to satisfactorily justify the rigidity of the adjective order across languages. While semantic reasons could be stipulated to generate the right order, the DFP hypothesis presents a straightforward way of accounting for it. As for the argument that the DFP analysis

¹⁵The fact that two colour or nationality adjectives are forbidden from appearing in the same phrase unless they are coordinated, could, therefore, be the result of a semantic restriction rather than a syntactic one, which was assumed to be the case earlier in the discussion.

is too restrictive, by allowing adjunction within each class the freedom of adjectives that belong to the same class is accounted for. Moreover, in chapter 3 it will be shown that the apparent freedom in the order is often the result of an independent factor.

2.4.4 Independently motivated Functional Heads

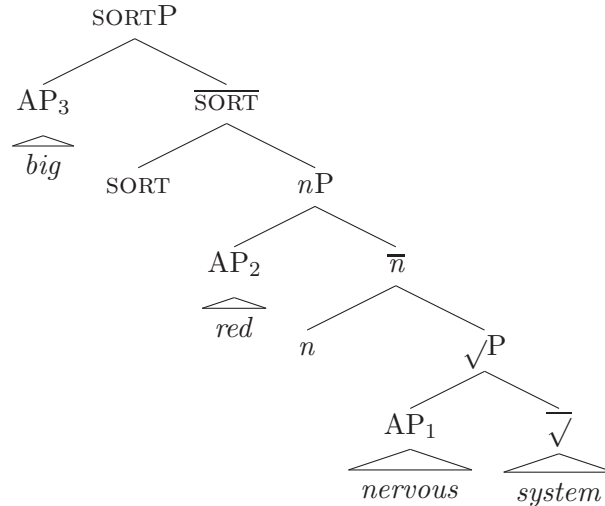
While many linguists support the proposal that adjectives are merged in the Specs of functional heads in the extended projection of the nominal phrase, it is nevertheless disputable whether these functional heads simply serve as a merging position for adjectives alone as in Cinque's (2010) analysis, or if they have additional functions and are therefore independently motivated.

Svenonius (2008) investigates whether it is possible to integrate the adjectival ordering phenomena with theories on the decomposition of DP motivated on independent grounds. In his proposed structure, Svenonius introduces several functional heads that are driven by the need of certain languages to use *classifiers*. Classifiers are head-like elements that appear in the DP and have a variety of uses. Svenonius (2008:21) distinguishes between three such classifiers and introduces a head for each one of them. The first head is UNIT and it hosts numeral classifiers which are responsible for making nominal referents countable. The second one is SORT and it accommodates sortal classifiers which categorise nominal referents by characteristics, such as shape. Finally, the noun classifier, *n*, is in charge of sorting nouns by material qualities or essences. The hierarchy in which these heads appear is seen in (101).

$$(101) \quad \text{UNIT} > \text{SORT} > n \quad (\text{Svenonius 2008:23})$$

These functional heads permit APs that are of the same semantic type to merge in their Specs. In particular, Svenonius argues that modification of SORTP is subsective, therefore only subsective adjectives can modify it. In a similar manner, *n*P modification is intersective, consequently only intersective adjectives can appear in its Spec. As for idiomatic adjectives, such as *nervous* in *nervous system*, those attach below *n*. These functional heads and the possible merging positions of adjectives are represented in the structure in (102).

(102)



Svenonius concludes that while there are indeed some very clear cross-linguistic patterns when it comes to the ordering of attributive adjectives, introducing dedicated functional phrases that simply serve as merging positions for adjectives seems to be unnecessary. Svenonius’s analysis, however, cannot accommodate more than one subsective and one intersective adjective in the same structure. This is problematic for phrases like ‘the round Swedish table’, where two intersective adjectives are present.¹⁶ A possible solution to this is to argue that if more than one subsective adjective is present in the structure, then they will all be adjoined to SortP. Similarly, the occurrence of multiple intersective adjectives could be accounted for by adjunction of all intersective adjectives to *nP*.

The problem with adjunction, however, which was also mentioned in the previous section, is that it cannot adequately capture the strictness of adjective ordering. Svenonius’s analysis predicts that the only clearcut ordering constraint

¹⁶Dékány (2011), who builds on Svenonius’s hierarchy, adds two additional positions for adjectives, one above the specific classifier phrase (CIP) and one below it, based on the fact that in Hungarian we find adjectives both before or after specific classifiers. The adjectives that come before it are subsective, while the ones that follow are intersective. The CIP should, therefore, be seen as the equivalent of Svenonius’s SortP. The functional sequence that Dékány proposes is given below:

(103) [NumP numerals [Num *darab* [AdjP Adj [CIP *specific CIs* [AdjP Adj [*nP n* [NP N]]]]]]]]

(Dékány 2011:47, (77))

Subsective adjectives are merged lower than *darab*, which is the Hungarian general classifier. The presence of additional AdjPs is not necessary, however, as subsective adjectives could be merged in Spec,CIP. As for intersective adjectives, Dékány’s reasoning for excluding Spec,*nP* as a merging position is because adjectives below it are idiomatic. If, however, it is the adjectives below *n* which are idiomatic, then the Spec,*nP* should be available for intersective adjectives as in Svenonius 2008.

is found between subsective and intersective adjectives, hence failing to account as to why *the round Swedish table* is unmarked but *the Swedish round table* marked.

These ordering issues will be discussed in the following chapter. What we can conclude is that while it might not be economical to assume that there are dedicated functional heads for each class of adjectives, the DFP analysis seems to be the only analysis that currently fully captures the cross-linguistic ordering restrictions. Ideally, however, we will eventually be able to independently motivate the existence of these functional heads.

2.5 Chapter summary

This chapter demonstrated that attributive adjectival modification varies cross-linguistically, both syntactically and semantically. Adjectives that are semantically ambiguous in English, are disambiguated in languages like French and Italian by either placing the adjective before or after the noun. We saw that traditional transformational accounts that treat adjectival modification as being the result of some relative clause transformation are problematic (syntactically, semantically, or both), and so are later accounts that attribute cross-linguistic variation to N-movement.

Cinque's (2010) proposal that there are two distinct sources of adjectival modification captures the ambiguity in the semantics of the adjectives. Moreover, under Cinque's analysis syntactic variation in adjective placement is the result of phrasal movement. While there are some issues with Cinque's account, it is the only analysis that seems to encapsulate most properties of adjectival modification. The remainder of this thesis will build on Cinque's (2010) analysis, and explore in more detail its strengths and weaknesses.

Chapter 3

Flexibility in the order

3.1 Introduction

The aim of this chapter is to investigate cases where adjective ordering restrictions are lifted, and to show that there is no need to abandon the thesis that adjective ordering is encoded in the syntax. The first question that needs to be addressed, therefore, is whether there is enough evidence to suggest that there is indeed a rigid cross-linguistic order. As was mentioned in the two previous chapters, there seems to be a unique prenominal order across languages, but (at least) two postnominal ones. The first postnominal order is identical to the prenominal order, while the second one is its mirror image:¹

- (1) a. Quality \succ Size \succ Shape \succ Colour \succ Nationality \succ N
- b. N \succ Quality \succ Size \succ Shape \succ Colour \succ Nationality
- c. N \succ Nationality \succ Colour \succ Shape \succ Size \succ Quality

What is interesting is that this pattern is not unique to adjectives. Greenberg's (1963:87) Universal 20 (U20) states that cross-linguistically, Demonstratives (Dem), Numerals (Num) and Adjectives (A) always adhere to the order in (2a) when found prenominally, whereas when they come after the noun they either follow the exact same order as the prenominal one, or surface as its mirror image. The mirror image postnominal order in (2c) is attested in “very many languages” (e.g. Arabic, Yoruba, Selepet), while the non-mirror image postnominal order in (2b) is attested in “few languages” (e.g. Kikuyu, Turkana, Noni)

¹As we saw in chapter 2, it is also possible to find the noun between adjectives. The order of adjectives in this case varies from language to language, as can be observed with postnominal orders.

(Cinque 2005:319–320).

- (2) a. Dem \succ Num \succ A \succ N
- b. N \succ Dem \succ Num \succ A
- c. N \succ A \succ Num \succ Dem

Hawkins (1983) argues that there are more postnominal orders attested than just the two that Greenberg mentions, and he revises U20 as follows:

- (3) When any or all of the modifiers (demonstrative, numeral, and descriptive adjective) precede the noun, they (i.e., those that do precede) are always found in that order. For those that follow, no predictions are made, though the most frequent order is the mirror image of the order for preceding modifiers. In no case does the adjective precede the head when the demonstrative or numeral follow.² (Hawkins 1983:119–120, (20'))

Cinque (2009, 2010) extends (the revised version of) Greenberg’s U20 to the ordering restrictions of adjectives. In fact, as was mentioned in chapter 1, Cinque (2009) extends this left-right asymmetry to the order of complements, modifiers and functional heads, in general. The generalisation is that these appear in a unique order when they emerge to the left of a lexical head, but in a variety of orders when found to the right of the head.

The fact that the prenominal order is unique is what led Cinque to claim that the prenominal order corresponds to the underlying order, while postnominal orders are derived via movement as was shown in chapter 2. Given that under Cinque’s analysis adjectives are merged in the specifiers of functional heads with which they are semantically related, and these functional heads are hierarchically ordered in the extended projection of the NP, it follows that the adjectives are also hierarchically merged and have a strict order. As for the postnominal orders these are derived by mixing two types of movement, NP-movement and NP-movement plus pied-piping, and by the possibility of movement to be total or partial. These constraints on movement, while they derive a range of orders postnominally, are restrictive enough to block any unattested orders.

²According to Dryer (2009) there is another prenominal order attested: Dem \succ A \succ Num \succ N. This is attested in Dhivehi, and in two related languages, Ingush and Chechen. It is still, however, striking that out of the 341 languages in Dryer’s sample, there are 74 that follow the U20 prenominal order, but only 3 that follow the alternative order that Dryer presents. As Abels and Neeleman (2012:31, fn. 7) note, more research needs to be done in order to confirm whether this alternative order is in fact an unmarked order.

Cinque's (2010) analysis, however, does not leave much room for flexibility as the ordering boils down to a fixed syntactic hierarchy. In particular, the dedicated functional projection (DFP) analysis predicts that in languages with prenominal adjectives the only order that should be attested is the universal order given in (1a). In the instances where prenominal adjectives appear in a noncanonical order, Cinque (2010) argues that at least one of the adjectives is merged inside a relative clause, which is why there is an apparent violation of the order.

Nevertheless, the idea that adjective ordering is as strict as the DFP analysis predicts, is not shared by all linguists. For instance, Sproat and Shih (1991:588) argue that adjective ordering is related to *absoluteness*: adjectives which refer to absolute properties (e.g. shape, colour, nationality) are closer to the noun than adjectives which refer to relative properties (e.g. quality, size). In other words, intersective adjectives like *red*, *square* and *Italian*, which denote absolute properties will be near the noun, while subsective adjectives such as *big* and *beautiful*, whose meaning is relative to the noun they modify, are found further away. This view is also shared by the DFP analysis. In addition to this observation, however, Sproat and Shih (1991:588) claim that in English "reordering adjectives which differ in absoluteness seems to be much worse than reordering adjectives which do not differ in absoluteness". Some examples that they provide to support this claim are given in (4) and (5). This is surprising for the DFP analysis, as the adjective hierarchy does not make a distinction between adjectives of different absoluteness any more than it does for adjectives of the same absoluteness.

- (4) *Quality, Size*
- a. beautiful large house
 - b. large beautiful house

- (5) *Quality, Colour*
- a. beautiful red house
 - b. *red beautiful house

Sproat and Shih (1991:589–590) also provide data from Mandarin Chinese to further support the idea that absoluteness plays an important role in adjectival modification. As we see in (6) and (7), two adjectives of different absoluteness are able to appear together in the same phrase as long as the relative adjective appears further away from the noun than the absolute adjective. However, two adjectives of the same absoluteness cannot appear together in the same phrase

unless at least one of the adjectives appears with the DE particle, in which case, Sproat and Shih assume that the adjective bearing DE is merged inside a reduced relative clause. This is shown in (8) and (9).

(6) *Size, Colour*

- a. xiǎo hóng pánzi
small red plate
- b. *hóng xiǎo pánzi
red small plate

(7) *Size, Shape*

- a. xiǎo yuán pánzi
small round plate
- b. *yuán xiǎo pánzi
round small plate

(8) *Quality, Size*

- a. *hǎo xiǎo pánzi
good small plate
- b. *xiǎo hǎo pánzi
small good plate
- c. hǎo-de xiǎo pánzi
good-DE small plate
- d. xiǎo-de hǎo pánzi
small-DE good plate

(9) *Shape, Colour*

- a. *yuán hóng pánzi
round red plate
- b. *hóng yuán pánzi
red round plate
- c. yuán-de hóng pánzi
round-DE red plate
- d. hóng-de yuán pánzi
red-DE round plate

The conclusion that Sproat and Shih (1991:591) draw from the above data is that there is some universal ordering constraint where relative property adjectives are hierarchically higher than absolute property adjectives, an idea also shared by the DFP analysis. As for adjectives of the same absoluteness, Sproat and

Shih speculate that speakers might avoid using constructions where they have to order them. This could account for why when two or more adjectives of the same absoluteness occur in the same construction in Mandarin they must appear with the DE particle. Ordering of the adjectives is free when these appear in a construction with DE.³ In English on the other hand, a language which according to Sproat and Shih has no alternative source of adjectival modification, ordering of adjectives of the same absoluteness is quite flexible as a result of this absoluteness constraint. Their reasons for these speculations are not syntactic, but rather, Sproat and Shih use the notion of ‘absoluteness’ as a semantic/cognitive basis for describing adjective ordering restrictions.

Similarly to Sproat and Shih, Truswell (2004) argues that the only clear ordering restriction in adjectival modification is found between subsective and intersective adjectives, while adjectives belonging to the same category, i.e. either subsective or intersective, are freely ordered with respect to one another. Subsective adjectives are comparable to Sproat and Shih’s relative adjectives, while intersective adjectives pattern with absolute adjectives. According to Truswell’s hypothesis subsective adjectives are structurally higher than intersective ones, while multiple intersective adjectives are interchangeable, as are multiple subsective adjectives.⁴ Truswell (2009:527) provides the contrastive examples in (10) and (11) (his (2b) and (4a) & (5a), respectively) as evidence of this distinction. In (10) the two intersective adjectives modifying the noun have a free order, whereas in (11) the intersective adjective must follow the subsective one.

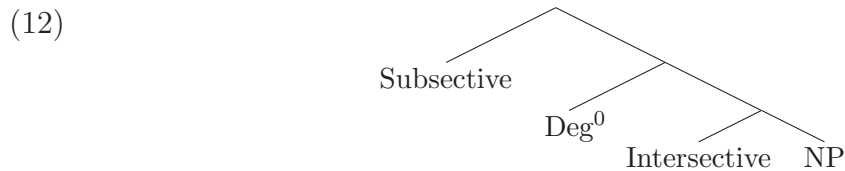
- (10) a. wooden red clogs
 b. red wooden clogs
- (11) a. big wooden bridge
 b. ??wooden big bridge

Truswell (2004) notes that a fundamental difference between intersective and subsective adjectives is that only adjectives belonging to the latter class are gradable. For example, a table can be ‘very expensive’, but it cannot be ‘very red’ or

³However, see Paul (2005), who claims that there are rare cases of phrases with three *de*-less adjectives. This means that at least two of the adjectives in the phrase will share the same absoluteness. Paul’s proposal is that the restriction on the number of *de*-less adjectives is not related to absoluteness, but to the fact that a structure “has to result in a plausible, natural classification, which is the more difficult to obtain the more modifiers are present” (Paul 2005:778).

⁴As we saw in chapter 2, Svenonius (2008) also adopts this view.

‘very round’.⁵ He accounts for this distinction by introducing Deg^0 , a functional head in the extended nominal projection, which is semantically related to degree. Truswell (2004:51–52) claims that the presence of Deg^0 is what allows subjective adjectives to be modified by degree markers. As a result, subjective adjectives will always be merged above Deg^0 , while intersective adjectives are assumed to be merged below it as shown in (12).



Keeping in mind that the constraint which always holds is whether an adjective is merged above or below Deg^0 , it follows that the ordering of two intersective adjectives will not be as straightforward or as rigid as is the ordering between a subjective and an intersective adjective. Intersective adjectives will be merged below Deg^0 , but there are no restrictions when it comes to how these adjectives are ordered in relation to one another.

A problem with Truswell’s analysis, however, and also with Sproat and Shih’s, is that they fail to take into account that there is a preferred unmarked order even within intersective/absolute and subjective/relative adjectives. For instance, the unmarked order of the two intersective adjectives in (13) is Shape \succ Colour which is given in (a). By unmarked, I mean that the nominal phrase ‘a square green sponge’ does not bear any special pragmatic status. Put differently, nothing in the phrase is presupposed or focussed. While (13b) is well-formed, this order of the adjectives would be used in a marked context, for instance in a context where sponges of different shapes have already been introduced in the discourse. Accordingly, in (14) where there are two subjective adjectives, the preferred order is Quality \succ Size, but the opposite order could still be used in a marked context.

- (13) a. Malcolm did the washing up with a square green sponge.
 b. #Malcolm did the washing up with a green square sponge.

- (14) a. Dave needs a nice big room in which to work.
 b. #Dave needs a big nice room in which to work.

⁵In section 3.3 we will see that modification of intersective adjectives is possible, but when this happens the meaning of the adjective is altered. Truswell (2004:51) also mentions this distinction and, as an example, he gives *a very French man*, which means ‘a man who displays many characteristics typically associated with French men’ and not ‘a man who comes from France to a high degree’.

As a result, while it is true that subsecutive/relative adjectives are structurally higher than intersective/absolute adjectives, Truswell's and Sproat and Shih's proposals cannot account as to why there is a preferred order within the classes, and why the marked order always comes with a special reading.⁶ The conclusion we can draw at this point is that while Truswell's and Sproat and Shih's observations are partly correct, their analyses do not sufficiently restrict the order. For this reason, I adopt the dedicated functional projection analysis, where adjective ordering is the direct outcome of a hierarchical structure. As I mentioned in section 2.4.3 of the previous chapter, however, I do not believe that an elaborate functional sequence as in Scott 2002 is necessary. A functional sequence which relates semantically to the main adjective classes alone seems to adequately capture the ordering attested cross-linguistically.

By adopting the position that adjective ordering is encoded in the syntax, the question that arises is how to account for apparent violations of the order. In what follows I examine cases where the ordering restrictions of adjectival modification are lifted due to a variety of independent factors. I begin the discussion in section 3.2 where we look at the distinction between parallel, direct, and indirect modification, and I argue that ordering restrictions are only observed with direct modification. In section 3.3 it is claimed that direct modification adjectives can modify the noun either as heads or phrases. If one adjective in the phrase is a head and another is phrasal, then the latter will be merged higher than the former even if this violates the semantic adjective order. For instance, a prenominal colour AP will be merged higher than a prenominal size A^0 , even though the unmarked universal order is $\text{Size} \succ \text{Colour} \succ \text{N}$. In section 3.4 I examine how focus can affect the unmarked adjective order, while in section 3.5 I investigate the ordering of intensional adjectives with respect to other attributive adjectives. Contra Teodorescu (2006), I argue that intensional adjectives are not freely ordered. In the same section I also propose that unmarked adjective orders have two readings, while marked orders are only associated with a single reading. In the last subsection of section 3.5 I briefly look at the order of superlative and comparative adjectives.

⁶It could, of course, be claimed that the ordering of adjectives of the same absoluteness or class is learnt, but if this is the case then it is surprising that the order is universal. There does not seem to be any particular reason as to why shape adjectives must come before colour adjectives across all languages that allow prenominal adjectives.

3.2 Parallel, direct, and indirect adjectival modification

According to Sproat and Shih (1991) adjectival modification can be divided into two types: *parallel* vs. *hierarchical* modification. In the former type each adjective modifies the noun in a separate phonological and syntactic phrase. An English example of parallel modification that Sproat and Shih (1991:578, (33)) provide is given in (15). What is noteworthy here is that there is an intonational break between each adjective, and a particular tonal pattern on the adjectives themselves. Moreover, the adjectives do not follow the prenominal order that is observed cross-linguistically.

(15) She loves all those Oriental, orange, wonderful ivories.

Present order: Nationality, Colour, Quality, N

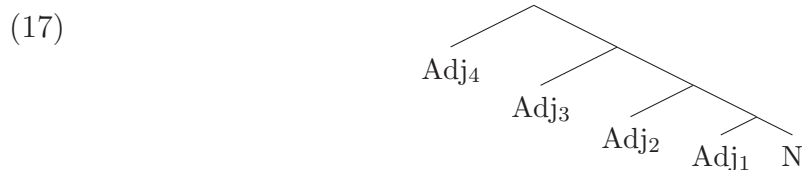
Cross-linguistic unmarked order: Quality \succ Colour \succ Nationality \succ N

Each of the adjectives in parallel modification modifies the noun directly without taking scope over any of the adjectives that follow. As Alexiadou et al. (2007:322) explain, parallel modification can be seen as an instance of coordination of adjectives, but without the presence of a coordinator. In other words, the sentence in (15) is analogous to (16a). Parallel adjectival modification can, thus, be represented as in (16b).

(16) a. She loves all those Oriental and orange and wonderful ivories.

b. 

On the other hand, adjectives in hierarchical modification are assumed to enter the same hierarchical structure as represented in (17). In contrast to parallel modification, there is no intonational break between adjectives in hierarchical modification, and adjectives found further away from the noun take scope over adjectives found closer to the noun.

(17) 

Sproat and Shih break hierarchical modification further down to *direct* and *indirect* modification. As was discussed in more detail in section 2.4 of the previous chapter, both the direct and indirect source are necessary in order to account for the cross-linguistic phenomena observed in adjectival modification. Cinque’s (2010) claim is that the two sources have different syntactic and interpretive properties which are the outcome of two distinct syntactic positions. Direct modification adjectives are merged in the extended nominal projection, either as adjuncts (Valois 1991; Bernstein 1993) or in the specifier of dedicated functional projections (Cinque 1994, 2010; Scott 2002; Laenzlinger 2005), as already discussed in chapter 2. A characteristic of adjectives in direct modification is that they must obey the universal ordering restrictions, something which under the DFP analysis is a consequence of the adjectives being hierarchically merged in the extended nominal projection.

Adjectives in indirect modification, on the other hand, are assumed to be merged inside a reduced relative clause, and they have a relatively free order (Sproat and Shih 1991; Cinque 2010). Cinque (2010:31) notes that the flexibility in the order is not surprising as relative clauses are freely ordered, which in turn predicts that reduced relative clauses (RRCs) will also be freely ordered. That relative clauses do not adhere to any ordering restrictions is shown in (18).

- (18) a. Rachele bought a dress that was beautiful, that was blue.
 b. Rachele bought a dress that was blue, that was beautiful.

In English the two sources of modification are not easy to distinguish. Nevertheless, as was discussed in the previous chapter, Cinque (2010) claims that adjectives appearing in a postnominal position in English are always merged inside a reduced relative. This does not entail that prenominal adjectives can never have an indirect source, but rather, it means that postnominal adjectives are straightforward instances of predicative source modifiers. The proposal that postnominal adjectives have an indirect source is confirmed by the fact that their interpretational properties pattern with the properties of adjectives merged inside a restrictive relative clause (Cinque 2010:18–19).

An example of this is given in (19). The meaning of the phrase ‘the students present’ is not equivalent to the meaning of ‘the present students’. In the former case the adjective ‘present’ only has a stage-level interpretation, which translates as ‘the students who are in this room at the moment’. The prenominal ‘present’, however, is ambiguous between the stage-level reading and the individual-level

reading which corresponds to ‘the current students’.

- (19) a. the students present
 \neq ‘the current students’
 = ‘the students who are present’
 b. the present students
 = ‘the current students’
 = ‘the students who are present’

An additional property of postnominal adjectives in English, and by extension of all adjectives in indirect modification, is that they have an intersective interpretation. In chapter 2 we looked at adjectives such as *beautiful*, *intelligent*, *old* and *bad*, which are ambiguous between an intersective and a nonintersective reading. Cinque (2010) notes that if any of these adjectives occur postnominally, then they will be disambiguated and will only have an intersective reading. This is illustrated in (20) and (21).

- (20) Agnieszka is an older friend than Abigael.
 a. Intersective: ‘Agnieszka is older than Abigael.’
 b. Nonintersective: ‘Agnieszka has been my friend for a longer period of time.’
- (21) Agnieszka is a friend older than Abigael.
 a. Intersective: ‘Agnieszka is older than Abigael.’
 b. *Nonintersective: ‘Agnieszka has been my friend for a longer period of time.’

With regard to prenominal indirect modification adjectives in English, these tend to surface to the left of direct modification adjectives (Parsons 1990:12; Larson 1999:lesson 1; Cinque 2010:19–20). An example of this is given in (22), repeated from (15) in chapter 2. The *visible* which is closest to the noun has an individual-level interpretation; it refers to the set of stars that are generally visible from the Earth. The leftmost *visible*, however, has a stage-level interpretation and it refers to the stars that are visible at a specific moment.

- (22) There are no visible visible stars tonight.
 visible stars = {Sirius, Canopus, Arcturus, Vega,}
 visible visible stars = \emptyset

Cinque’s claim is that the stage-level interpretation is associated with the indirect source, and the individual-level interpretation with the direct source. What this example suggests is that the hierarchical order of the two sources of adjectival modification is Indirect modification > Direct modification > N. A consequence of assuming that indirect modification adjectives are merged inside a reduced relative clause (RRC) is that nonpredicative adjectives will be excluded from this type of modification, while all predicative adjectives will be allowed.

By taking these assumptions on board, we can now account for the apparent freedom in the ordering of adjectives in English. Given that indirect modification adjectives are structurally higher than direct modification adjectives, any time a predicative adjective accesses the indirect source it will be found to the left of any direct modification adjectives.

An example, which demonstrates the flexibility in the order when an adjective has an indirect source is given in (23). In (23a) the two adjectives appear in their unmarked order. This either means that both adjectives are merged as direct modifiers, or it could also be the case that *clever* has an indirect source. In (23b), however, *handsome* surfaces to the left of *clever* and the sentence comes with a special reading, where the former adjective must take scope over the latter adjective and the noun. Sentence (23b), for example, is an acceptable response in a context where someone claims that there are no clever men who are also good-looking. *Handsome*, therefore, takes scope over *clever man*, which is already established in the discourse. The only accessible source of modification for *handsome* in this case, is the indirect one.

- (23) a. James is a clever handsome man. *(In)direct mod > Direct mod > N*
 b. James is a handsome clever man. *Indirect mod > Direct mod > N*

The fact that indirect modification adjectives must scope over any lower adjectives is what indicates that sentences like (23b) are not instances of parallel modification. While parallel modification adjectives have flexible ordering, they do not take scope over any intervening adjectives, but they each independently modify the noun as was shown above in (16b).

If nonpredicative adjectives are excluded from the indirect modification source, then we expect that they will not exhibit any flexibility when it comes to ordering. As the examples in (24) and (25) suggest, this is borne out. In the first example, the nonpredicative adjective *electrical* cannot appear to the left of *tall* even if it

is focussed.⁷ The same restriction is observed in (25), where both adjectives are nonpredicative. The evidence that these three adjectives are nonpredicative is given in the (c) examples.

- (24) a. She is a tall electrical engineer.⁸
 b. *She is an ELECTRICAL tall engineer.
 c. *An engineer who is electrical.
- (25) a. She is an alleged heavy drug-user.
 b. *She is a HEAVY alleged drug-user.
 c. #A drug-user who is heavy.⁹ *or* *A drug-user who is alleged.

In contrast to English, there are languages that exhibit an overt syntactic and morphological contrast between direct and indirect modification. Such a language is Mandarin Chinese (Sproat and Shih 1991; Cinque 2010). Following Sproat and Shih (1991), I consider the adjectives in example (26) to have a direct modification source, as they must follow the universal order. The adjectives in the phrases in (27), where the particle *de* is also present, have free ordering. According to Sproat and Shih, the freedom in the ordering is an indication that the adjectives are indirect modifiers.¹⁰

- (26) *Mandarin direct modification*
- a. na ge da bai wan
 that CL big white bowl
- b. *na ge bai da wan
 that CL white big bowl
 ‘the big white bowl’
- (27) *Mandarin indirect modification*
- a. na ge bai/baise de da wan
 that CL white/white-colour DE big bowl

⁷For a discussion on how information structure affects the adjective ordering see section 3.4.

⁸The adjective *electrical* is, according to Cinque (2010), a classifying adjective. As we saw in footnote 4 in chapter 2, Bernstein (1993) argues that these are theta-bearing adjectives and they are found lower than other attributive adjectives in the structure. The assumption that these are just instances of very low adjectives rather than compounds, is also confirmed by the fact that they do not receive compound stress. Other adjectives which are assumed to be merged low in the nominal phrase are ethnic/nationality adjectives when these are again theta-bearing and nonpredicative (Bernstein 1993:41–44; Alexiadou and Stavrou 2011).

⁹This sentence can only have the reading of a drug-user who weighs a lot. *Heavy* does not describe the drug use.

¹⁰The *de*-less phrase in (26a) and the *de* phrase in (27b) share the same order. In the latter case, however, ‘big’ can be optionally focussed, but it cannot be in the former case.

- b. na ge da de bai wan
 that CL big DE white bowl
 ‘big white bowl’

A similar distinction between the two sources of adjectival modification is also manifested in Greek. In (28) we notice that the adjectives follow the unmarked universal order.¹¹

- (28) a. to mevalo aspro bol
 the big white bowl
 b. #to aspro mevalo bol
 the white big bowl

This ordering restriction, however, is lifted when the definite article appears before every adjective and the noun. In this case all possible orders become available as demonstrated in (29).¹² This phenomenon is known as *determiner spreading* or a *polydefinite* construction, and it will be discussed in detail in chapter 4. In order to account for the inflexibility of the adjective order in the first instance, and the flexibility of the order in the second, Alexiadou and Wilder (1998), following Sproat and Shih (1991), propose two sources of adjectival modification for Greek. When adjectives obey the universal ordering restrictions as in (28a) they are taken to be merged as direct modifiers, while adjectives in the polydefinite construction are assumed to have an indirect source.

- (29) a. to mevalo to aspro to bol
 the big the white the bowl
 b. to aspro to mevalo to bol
 the white the big the bowl
 c. to mevalo to bol to aspro
 the big the bowl the white
 d. to aspro to bol to mevalo
 the white the bowl the big
 e. to bol to mevalo to aspro
 the bowl the big the white
 f. to bol to aspro to mevalo
 the bowl the white the big
 ‘the big white bowl’

¹¹The reverse order is grammatical but must come with a special reading, just like the English examples discussed earlier in the chapter.

¹²In contrast to Chinese, *mevalo* ‘big’ can be optionally focussed in both (28a) and (29a) (cf. footnote 10).

Some languages do not have access to both sources of hierarchical modification. Cinque (2010:35) gives Rice’s (1989:389–390) example from Slave, an Athapaskan language, which does not have any direct modification adjectives. As we see in the example below, adjectives are used as predicates:

- (30) a. yene (be-gho) sho hiłi
 woman (3-of) proud/happy 3-is
 ‘The woman is happy/proud (of him/her)’
 b. *yene sho
 woman proud/happy
 ‘a proud/happy woman’

In Yoruba we find the opposite phenomenon. Adjectives can only appear in an attributive position, which, according to Cinque (2010:35), suggests that Yoruba lacks indirect modification.¹³

- (31) a. Mo rí [ajá ńlá]
 I see dog big
 ‘I saw a big dog’
 b. *Ajá ńlá
 dog big
 ‘The dog is big’

To summarise, we have seen that direct modification adjectives obey the strict cross-linguistic order, something that under the DFP analysis is accounted for by assuming that adjectives are merged in the specifiers of semantically related functional projections that are hierarchically ordered. The ordering restrictions, however, are lifted when the same adjectives are in either parallel or indirect modification. In the former case each adjective in the sentence modifies the noun in a separate syntactic phrase, and as a result there are no syntactic constraints that determine the order in which the adjectives will appear. As for adjectives in indirect modification, these are merged inside a reduced relative clause above direct modification adjectives. Given that any predicative adjective can access the higher, indirect position, this captures the fact that we often encounter what appear to be violations of the order in English. In addition, it is possible for more than one adjective to enter the indirect position, in which case the order of the indirect adjectives is again free as relative clauses are not strictly ordered.

¹³The examples that Cinque provides are taken from Ajíbóyè (2001), (30b) and (29b), respectively.

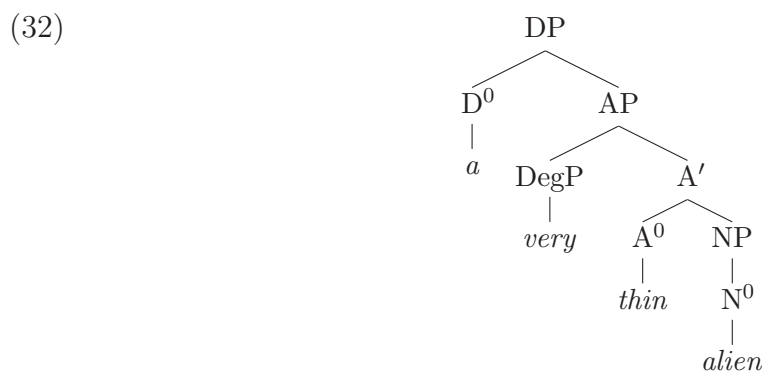
The distinction between direct vs. indirect modification and the claim that violations in the universal adjective order are often the outcome of this distinction as argued by Cinque (2010), are also adopted in this thesis. In chapter 4 these assumptions will become particularly relevant, as they form the basis of my analysis for Greek polydefinites.

3.3 Level of modification and adjective ordering

A question that is often investigated in the literature of adjectival modification is whether adjectives within the extended nominal projection are heads or phrases. What I will claim here is that (in)flexibility in adjective ordering suggests that attributive adjectives can modify the noun both as APs and A⁰s. In particular, strict ordering of adjectives appears to be associated with either *head-modifiers* or *phrasal-modifiers*, but not with a mixture of both. When a head-modifier and a phrasal-modifier appear together in the same nominal phrase, then the latter must be merged higher than the former, irrespective of the classes of the adjectives. This link between adjective ordering and the level of modification (phrase or head) has not, to the best of my knowledge, been identified before.

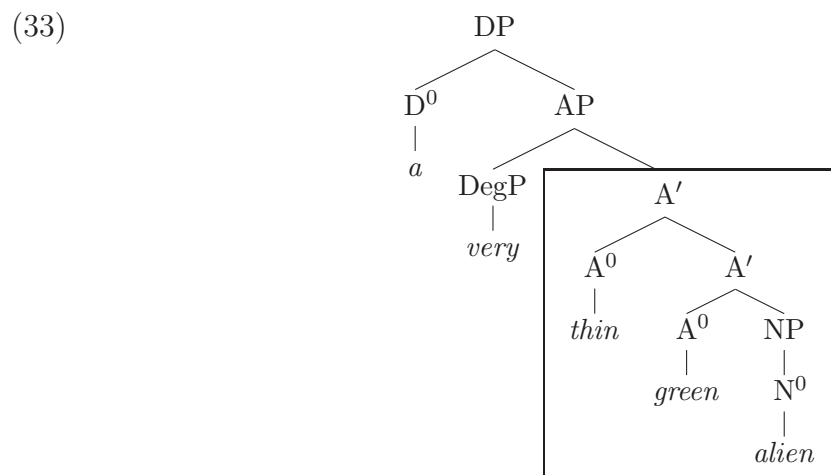
3.3.1 Adjectives: heads or phrases?

Abney (1987) argues that prenominal adjectives in English are heads. The structure he proposes is given in (32). This structure, Abney argues, accounts for the fact that prenominal adjectives in English cannot come with a complement (**a proud of his son man*), while it can accommodate adjectival modifiers such as *very* and *extremely* in Spec,AP.



A problem with Abney's analysis, which Bernstein (1993) brings up, is that it cannot generate stacked adjectives, since in his system A⁰ necessarily selects an

NP as its complement. A solution to this would be to argue that multiple adjectives are simply adjuncts. If this is the case, however, we run into a new problem which is the question of where the adjectival modifier, e.g. *very*, is generated. If we assume a structure like the one schematised in (33), then it is predicted that *very* does not only modify its nearest adjective, but instead it modifies its A' complement *thin green alien*. This possibility, however, derives the wrong interpretation, as *a very thin green alien* means 'a green alien who is very thin' and not 'an alien who is very thin and very green'. Another example, which Svenonius (1994:(10a)) provides to demonstrate the same point, is *some barely hot black coffee*, where *barely* modifies *hot*, but not *black*.



An additional problem with Abney's analysis concerns the assumption that prenominal adjectives in English cannot appear with a complement. While this is true for English, the generalisation does not seem to hold cross-linguistically, as other languages with prenominal adjectives do permit complements. Svenonius (1994:(11)) gives the two Swedish examples in (34) as evidence of this.¹⁴ In the first example, the complement 'enemy' appears to the left of the adjective 'superior', and in the second example, Svenonius assumes that the PP 'since yesterday' modifies the adjective.

- (34) *Swedish*
- a. den fienden överlägsna armén
 the enemy.superior army
 'the army superior to the enemy'

¹⁴Svenonius borrows these examples from Platzack (1982:49) and Delsing (1992:25).

- b. ett sedan i går välkänt faktum
 a since yesterday well.known fact
 ‘a fact well-known since yesterday’

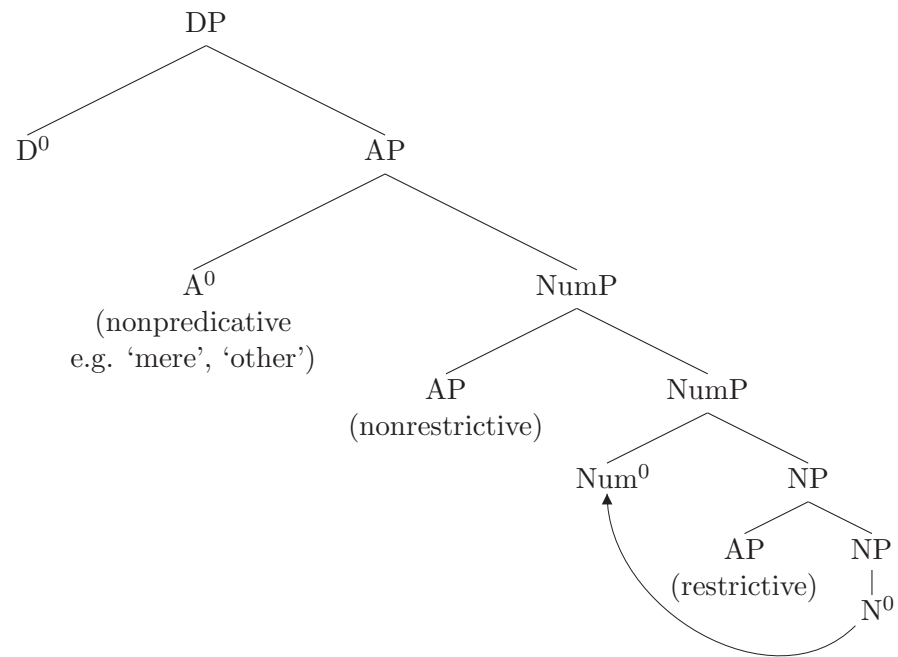
The above two examples, however, are not clear cases of adjectives with complements. Firstly, *fienden överlägsna* ‘enemy superior’ could be a compound as the glossing also suggests. Moreover, it is not clear that the PP in the second example is a complement. In Greek, on the other hand, the possibility of allowing complements with prenominal adjectives is more obvious:

(35) *Greek*

- a. to psilo ja tin ilicia tu ayori
 the tall for the age his boy
 ‘the tall boy for his age’
- b. ena terastio ja tin cipro pliyma
 one huge for the Cyprus blow
 ‘a huge blow for Cyprus’

The fact that adjectives can be modified and can take a complement has, among other reasons, led many linguists to conclude that attributive adjectives are phrasal (Svenonius 1994; Matushansky 2002; Laenzlinger 2005; Cinque 2010). An alternative proposal is one where adjectives modify the noun both as APs and A⁰s. Bernstein’s (1993) analysis, which was discussed in section 2.3.2.2 of chapter 2, adopts this alternative position (also see Zamparelli 1993 and Demonte 1999). Bernstein argues in favour of three distinct generation sites for adjectives. She proposes that the two “lower” positions involve adjunction of APs to either the NP or NumP, while for the high adjective position, Bernstein suggests that adjectives are heads projecting to an AP inside the extended nominal projection. The proposed structure is repeated from example (54) of chapter 2:

(36)



To summarise what has already been mentioned in the previous chapter, the reason Bernstein argues that the highest generation site of adjectives is not phrasal, is because the adjectives that she assumes are generated in that position have different syntactic properties from the rest of the adjectives. Specifically, these adjectives are nonpredicative, they cannot appear in a construction in which the noun is elided, and, finally, they cannot be modified. These three properties are demonstrated in the Spanish examples below:

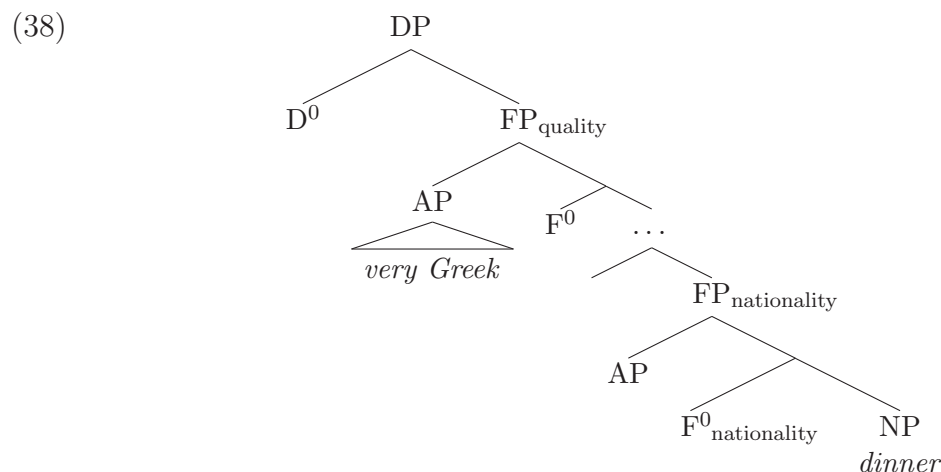
- (37) a. *el accidente es mere
the accident is mere
b. *uno mere
a mere
'a mere one'
c. *un muy mere accidente
a very mere accident

From these three properties, I would like to focus on just the last one, namely, the fact that these head-adjectives are not acceptable when modified. I will use this property to motivate an analysis which argues that adjectives can be both heads or phrases. Specifically, I will show that if an adjective is modified, then it is associated with different semantic and/or syntactic properties than when it appears bare. This, I will claim, is the consequence of the adjective modifying the noun as a phrase in the former instance, but as a head in the latter. In the introduction to this chapter I mentioned that Truswell (2004) takes

intersective adjectives to be nongradable, which under the present proposal, is a property associated with heads. In what follows we will look at Truswell’s claim in more detail before turning our attention to subjective adjectives to see how these behave when modified.

3.3.2 Intersective adjectives

Truswell’s (2004) generalisation for the nongradability of intersective adjectives is, at first glance, obvious with some classes, but not with others. For instance, it is indeed true that material adjectives sound awkward when modified by *very* (e.g. #*a very wooden spoon*). The acceptability of *a very Greek dinner*, on the other hand, suggests that nationality adjectives allow modification by a degree adverb. What is noteworthy, however, is that ‘a very Greek dinner’ does not imply that the dinner originated from Greece. It only means that the dinner had several features of a Greek dinner, even if it did not include foods of Greek origin like tzatziki and feta. For example, someone was playing the bouzouki and people were singing Greek songs. It seems, then, that the nationality adjective in this case expresses a quality rather than simple origin. Scott (2002) and Svenonius (2008) argue that adjectives are flexible to merge in any position that makes sense for their interpretation. What I assume happens in *a very Greek dinner* is that the nationality adjective is merged higher than the nationality/origin position, to a position where quality adjectives are merged:



The distinction between the two positions becomes even more obvious when two nationality adjectives are used in the same phrase. Consider the contrast between *a very Cypriot Cypriot man* and **a Cypriot very Cypriot man*. It appears that the *Cypriot* that is closest to the noun is the one associated with origin. The

gradable *Cypriot*, which is the one found further away from the noun, is the one associated with the ‘Cypriotness’ of the individual, in other words the features of his appearance or character that make him ‘very Cypriot’ (e.g. has olive skin, plays backgammon, eats meat every Sunday, and watches football).

One language where it is evident that the modified nationality adjective not only has a different interpretation, but also surfaces in a different syntactic position, is Italian. Giorgi and Longobardi (1991:127–128, (23) & (24)) show that nationality adjectives in Italian cannot appear prenominal or be modified:

- (39) a. un’ automobile italiana
 a car Italian
 b. *un’ italiana automobile
 an Italian car
- (40) a. un’ invasione molto rapida/*italiana dell’ Albania
 an invasion very quick/Italian of Albania
 ‘a very quick/Italian invasion of Albania’
 b. un’ invasione più rapida/*italiana della precedente
 an invasion more quick/Italian of previous
 ‘an invasion more quick/Italian than the previous one’

If, however, the nationality adjective changes from an *origin* reading to a *manner* interpretation as in (41), then the adjective is acceptable in a prenominal position:

- (41) quel suo tedeschissimo comportamento
 that his very-German behaviour
 ‘that very German behaviour of his’

(Giorgi and Longobardi 1991:128, (27))

The interpretational distinction between modified vs. bare adjectives is less striking with other intersective adjectives, but there still seems to be a contrast. For example, *a very red sweater* gets a subjective/relative reading where the sweater is very red as far as sweaters go. Interestingly, it does not necessarily mean that the whole sweater is red. We can think of a sweater that has some red patterns, which are, nevertheless, quite bright and draw one’s attention to them. In this context, describing the sweater as being *very red* seems to be felicitous. In contrast, *a red sweater* must mean that the colour of the sweater is predominantly red. It cannot be used in a context where there are only a few red patterns.

As for shape adjectives, gradability again seems to be associated with a subjective/relative reading of the adjective. If a table has four equal sides and four right angles, then it would be odd to describe it as *a very square table*, as it is obvious that it is simply a square table. On the other hand, *a very square face* is acceptable, as faces do not typically have four equal sides and four right angles, and, as a result, some faces might be closer to a square shape than others. The interpretation in this case, therefore, is ‘very square as far as faces go’.

This characteristic of intersective adjectives to shift to a relative reading when modified, is also observed when they take a complement. This is illustrated in the Greek example in (42), which is interpreted as ‘blue for a typical London sky’. The colour of the sky in (42) might still not be as blue as a typical blue sky in Cyprus.

- (42) o (asiniθista) ble ja to lonđino uranos
 the unusually blue for the London sky
 ‘the (unusually) blue sky as for London standards’

In general, what seems to be happening with colour and shape adjectives is that when they are bare they can either have a definitional or a prototypical reading, but when they appear with a modifier, or when they take a complement, they are restricted to a prototypical reading. For instance, *a very square face* cannot have the definitional reading of square which is ‘four equal sides and four right angles.’ I take this observation and the origin vs. manner distinction of nationality adjectives to suggest that genuine intersective adjectives do not have any phrasal characteristics. When they do, they are interpreted similarly to subjective adjectives, whose meaning is relative to the noun they modify. I consider this to be an indication that modified intersective adjectives are merged higher in the extended nominal projection than bare intersective adjectives. Supporting evidence for this comes from the contrast in the acceptability of the (a) and (b) examples in (43)–(45). The modified adjective can only appear to the left of the bare adjective, which corroborates the idea that phrasal adjectives are merged higher than head adjectives.

- (43) *Nationality*
 a. an extremely Cypriot Cypriot man
 b. *a Cypriot extremely Cypriot man

- (44) *Colour*
- a. a barely red red apple
 - b. *a red barely red apple

- (45) *Shape*
- a. an incredibly square square face
 - b. *a square incredibly square face

To conclude, it seems possible that intersective adjectives modify the noun as phrases when they have a prototypical interpretation, and as heads when they have access to both a definitional and prototypical reading. The basis for assuming two distinct syntactic positions is that the adjectives come with different interpretational properties depending on whether they are bare or complex. We now turn our attention to subsecutive adjectives to see how these behave under modification.

3.3.3 Subsecutive adjectives

That subsecutive adjectives are gradable is evident from the examples in (46), where a size and a quality adjective are both modified by a degree adverb. In addition, subsecutive adjectives can take a complement as shown in the Greek examples in (47).

- (46) a. Jad wrote an [[extremely long] letter].
 b. Barb was wearing a [[very nice] skirt] on her graduation day.
- (47) a. i konti ja ti maria fusta
 the short for the Maria skirt
 ‘the skirt short for Maria’
- b. i kaces ja tin cikloforia trofes
 the bad for the circulation foodstuffs
 ‘foodstuffs bad for circulation’

These properties of subsecutive adjectives indicate that they have a phrasal nature. What is relevant to the current discussion, however, is that there seem to be restrictions in the ordering of subsecutive adjectives when these are modified, or when they appear with a complement. In particular, in languages with prenominal adjectives what we find is that adjectives which have a phrasal character

have to appear to the left of any non-modified adjectives.¹⁵ The examples in (49) show precisely that. The unmarked order of the two adjectives is *big* \succ *old*, where the size adjective precedes the age adjective. If *old* is modified, however, then it needs to appear to the left of *big*.¹⁶ In order for *very old* to appear to the right of *big* there must be an obligatory intonational break between the two adjectives, something which is typical of adjectives in parallel modification. The break is signified by a vertical line in the examples. Moreover, *big* does not seem to scope over *very old* when it surfaces to its left, a property again associated with adjectives in parallel modification. The same effects are also observed in (50) and (51).

- (49) a. the big old house
 b. #the old big house
 c. the very old big house
 d. the big | very old house

- (50) a. a beautiful fat cat
 b. #a fat beautiful cat
 c. a very fat beautiful cat
 d. a beautiful | very fat cat

- (51) *Greek*
 a. to điasceđastiko pało pexniđi
 the fun old game
 b. #to pało điasceđastiko pexniđi
 the old fun game
 c. to poli pało điasceđastiko pexniđi
 the very old fun game

¹⁵The reason the discussion is focussed on languages with prenominal adjectives is because it is easier to identify the ordering patterns, as the prenominal order is the only order that is unique across languages. I also follow Cinque (2009) in assuming that the prenominal order corresponds to the underlying structure.

¹⁶The noncanonical ordering does not seem to be a consequence of phonological heaviness. If this was the case, then we would expect *Transylvanian* in example (48) to always appear to the left of *old* as it is heavier, even when *old* is modified.

- (48) a. an old Transylvanian cow
 b. #a Transylvanian old cow
 c. a very old Transylvanian cow
 d. *a Transylvanian very old cow

- d. to điasceđastiko | poli paʎo pexniđi
 the fun very old game

This phenomenon is not restricted to the ordering of two subsecutive adjectives. If we modify an intersective adjective with *very*, which according to what I claimed earlier would cause the adjective to have a relative reading, then the intersective adjective will have to surface to the left of the non-modified subsecutive adjective:

- (52) a. Nee bought an expensive red shirt.
 b. #?Nee bought a red expensive shirt.
 c. Nee bought a very red expensive shirt.
 d. Nee bought an expensive | very red shirt.

Analogously, when an adjective comes with a complement, the A+Complement will again appear before any other adjectives in the phrase, even if this violates the canonical ordering of adjectives. In the Greek examples in (53) it is evident that even though the canonical order is ‘beautiful’ \succ ‘tall’, when ‘tall’ appears with a complement, it has to appear to the left of ‘beautiful’. The reverse order, which is given in (53d), is degraded, even if there is an intonational break between ‘beautiful’ and ‘tall’.

- (53) a. to oreo psilo ayori
 the beautiful tall boy
 b. #to psilo oreo ayori
 the tall beautiful boy
 c. to psilo ja tin ilicia tu oreo ayori
 the tall for the age his beautiful boy
 d. ?to oreo | psilo ja tin ilicia tu ayori
 the beautiful tall for the age his boy

A similar pattern is also witnessed in Polish, which also accepts adjectives with complements preminally. While ‘big’ must appear to the left of ‘old’ in accordance with the universal order, in (54) we see that when ‘old’ appears with a complement, the most natural order is ‘old’+Compl to the left of ‘big’. The orders in (54b) and (54c) are acceptable only with special intonation.

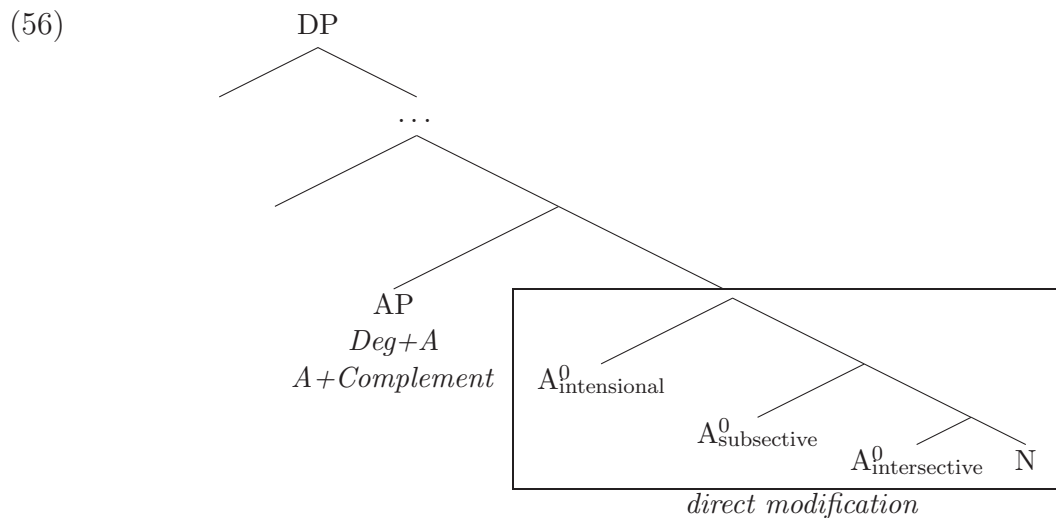
- (54) a. kupilam (ten) stary jak na to miasto duzy dom
 bought.1SG this old as for this city big house
 b. kupilam (ten) duzy | stary jak na to miasto | dom
 bought.1SG this big old as for this city house

- c. kupilam (ten) duzy dom | stary jak na to miasto
 bought.1SG this big house old as for this city

The above data suggest that subsective adjectives which surface in the strict universal order do not have a phrasal character. In other words, subsective adjectives which are head-modifiers, are strictly direct modification adjectives. The question that arises is whether all adjectives in direct modification are head-modifiers, or if phrase-modifiers also have access to the direct source. The only adjectives that we have not considered in the discussion so far are intensional adjectives which, nevertheless, are often treated as heads in the literature of adjectival modification (Bernstein 1993; Zamparelli 1993; Alexiadou et al. 2007, and works cited there). This is due to the fact that they can never be modified:

- (55) a. *the very former president
 b. *the somewhat alleged thief
 c. *the president former for her country
 d. *the thief alleged for his crimes

As a result, intensional adjectives also comply with the idea that when adjectives modify the noun as heads, they have a direct source as shown in (56).¹⁷



The question we need to answer at this point is whether the phrasal adjectives which appear above A^0 s can also be direct modifiers or if they only have an indirect source. Data from Mandarin Chinese suggest that phrasal adjectives are only found as indirect modifiers. In (57) we notice that Mandarin follows

¹⁷I am assuming that intensional adjectives are the highest in the direct modification hierarchy. My reasons for this are given in section 3.5.

the same pattern as English, Greek and Polish; when adjectives do not have any phrasal properties (i.e. when they are not modified), they must follow the universal order where a subjective adjective appears to the left of an intersective one. When the intersective adjective is modified by a degree adverb, however, then it obligatorily surfaces to the left of the non-modified subjective adjective.

- (57) *Mandarin*
- | | | |
|----|-------------------------------------|--|
| a. | xiǎo hóng/yuán pánzi | <i>Subjective</i> > <i>Intersective</i> |
| | small red/round plate | |
| b. | *hóng/yuán xiǎo pánzi | * <i>Intersective</i> > <i>Subjective</i> |
| | red/round small plate | |
| c. | hěn hóng/yuán de xiǎo pánzi | <i>Modif. Intersective</i> > <i>Subjective</i> |
| | very red/round DE small plate | |
| d. | *xiǎo hěn hóng/yuán de pánzi | * <i>Subjective</i> > <i>Modif. Intersective</i> |
| | small very red/round DE plate | |

Where Mandarin differs from other languages with prenominal adjectives is that the noncanonical position is morphologically marked with the particle *de*. As we saw earlier in this chapter, Sproat and Shih (1991) argue that adjectives which appear with the *de* particle have an indirect modification source and are generated inside a RRC. The Mandarin data, consequently, suggest that phrasal adjectives only have an indirect source.¹⁸

An additional point worth noting is that the example in (57d) becomes grammatical if *xiǎo* is also accompanied by *de*, as in (58a). In this case, however, the order between the adjectives is free, regardless of whether these are bare or not. This becomes evident when we compare (58a) to (58b). The freedom in this instance is unsurprising as both the subjective and intersective adjectives have an indirect source, and as has already been discussed, indirect modification does not obey any ordering restrictions.

- (58) a. xiǎo **de** hěn hóng/yuán **de** pánzi
 small DE very red/round DE plate

¹⁸Paul (2005) argues against analysing modifiers with *de* as instances of adjectives in a RRC, and he instead claims that *de* splits the nominal phrase into two syntactico-semantic domains. A *de*-less modifier, is in the lower domain and is interpreted as a defining characteristic, while a modifier above *de* is interpreted as an additional, secondary property (Paul 2005:770). Even if Paul is right in assuming that adjectives with *de* are not merged inside an RRC, what is relevant to us is that he notes that *de*-less adjectives pattern with head-modifiers, while adjectives above *de* have a phrasal character.

- b. hěn hóng/yuán **de** xiǎo **de** pánzi
 very red/round DE small DE plate

Earlier in the chapter we saw that Greek is another language that marks the direct vs. indirect distinction overtly. In contrast with Mandarin, in Greek it is possible to find a phrasal adjective both in direct and indirect modification. The former source is associated with *monodefinitive* constructions and the latter with *polydefinitives*, where the indirect modifier appears with its own definite article. The fact that the adjective ‘bad’ has a phrasal character in the following examples is confirmed by the fact that it can appear with the complement ‘for the circulation’:

(59) *Monodefinitives – Direct modification*

- a. i kaces ja tin cikloforia trofes
 the bad for the circulation foodstuffs
 ‘foodstuffs bad for circulation’
- b. i kaces ja tin cikloforia nostimes trofes
 the bad for the circulation tasty foodstuffs
 ‘tasty foodstuffs bad for circulation’

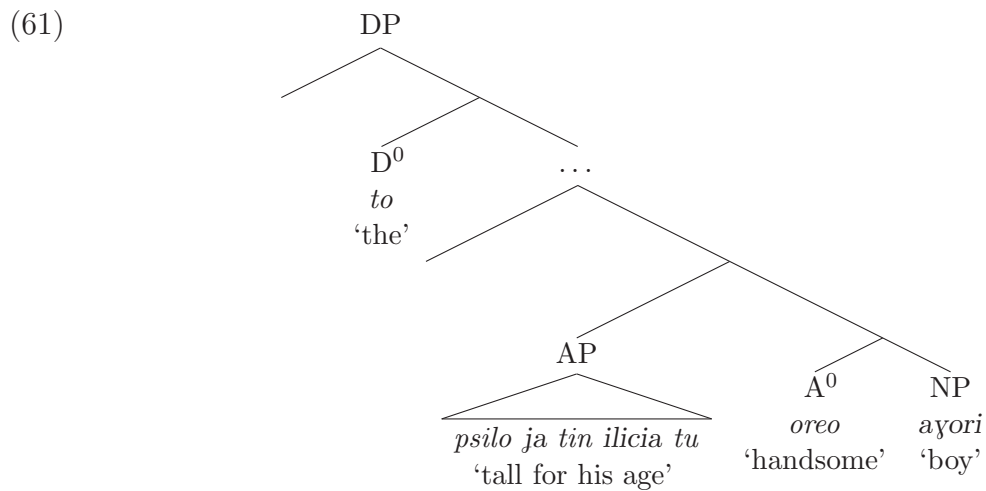
(60) *Polydefinitives – Indirect modification*

- a. i trofes i kaces ja tin cikloforia
 the foodstuffs the bad for the circulation
 ‘foodstuffs bad for circulation’
- b. i nostimes trofes i kaces ja tin cikloforia
 the tasty foods the bad for the circulation
 ‘tasty foodstuffs bad for circulation’

Drawing from the above discussion, I conclude that direct modification is not restricted to head modification. As the Greek data suggest, phrasal adjectives can also have a direct modification source. However, phrasal adjectives must appear higher than head adjectives and, as a consequence of this, adjective ordering restrictions are lifted when one adjective in the phrase modifies the noun as a head, and another as a phrase.¹⁹ An example of this was shown in (53), which is repeated below, and is structurally represented in (61).

¹⁹Semantically, it could be that adjectives found below phrasal modification denote a property, and it is at the phrasal level that a property turns into a predicate. Sadler and Arnold (1994:195) also suggest this, although for them all direct modification adjectives are heads, while indirect modification adjectives are phrasal. I will not be going into this in any more detail, but if this assumption holds then it is unsurprising that we find differences in the interpretation of adjectives depending on whether they modify the noun as heads or phrases.

- (53) a. to oreo psilo ayori
the beautiful tall boy
b. #to psilo oreo ayori
the tall beautiful boy
c. to psilo ja tin ilicia tu oreo ayori
the tall for the age his beautiful boy
d. ?to oreo | psilo ja tin ilicia tu ayori
the beautiful tall for the age his boy



To summarise this section, I proposed that adjectives in direct modification can either be head-modifiers or phrasal-modifiers. While ordering restrictions are lifted if one adjective in direct modification is an AP and another just an A⁰, I assume that the ordering restrictions are still observed within head-modifiers and phrasal-modifiers. A question we have not touched upon is what the implications are for languages that allow postnominal adjectives if we are to assume two types of direct adjectival modification. For languages which follow the mirror image order we expect to observe the same constraints that hold in prenominal position, but in the mirror image order. The data from Hebrew and Lebanese Arabic in (62) and (63) corroborate this idea; the modified adjective, which is marked in bold, is found further away from the noun than the non-modified adjective. That the adjectives are found in the mirror image order is evident from the English translations.

(62) *Hebrew*

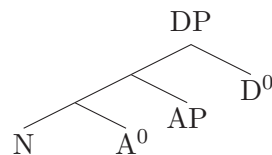
- a. kaniti et ha-bait ha-gadol **ha-yašan me'od**
 bought.1SG ACC the-house the-big the-old very
 'I bought the very old big house.'
- b. ??kaniti et ha-bait **ha-yašan me'od** ha-gadol
 bought.1SG ACC the-house the-old very the-big
 'I bought the very old big house.'
- c. kaniti et ha-bait ha-yašan **ha-gadol me'od**
 bought.1SG ACC the-house the-old the-big very
 'I bought the very big old house.'
- d. ??kaniti et ha-bait **ha-gadol me'od** ha-yašan
 bought.1SG ACC the-house the-big very the-old
 'I bought the very big old house.'

(63) *Lebanese Arabic*

- a. ftreet l-beet l-kbiir **l-'adiim ktiir**
 bought.1SG the-house the-big the-old very
 'I bought the very old big house.'
- b. ??ftreet l-beet **l-'adiim ktiir** l-kbiir
 bought.1SG the-house the-old very the-big
 'I bought the very old big house.'
- c. ftreet l-beet l-'adiim **l-kbiir ktiir**
 bought.1SG the-house the-old the-big very
 'I bought the very big old house.'
- d. ??ftreet l-beet **l-kbiir ktiir** l-'adiim
 bought.1SG the-house the-big very the-old
 'I bought the very big old house.'

Under an analysis where the mirror image order is base generated as in Abels and Neeleman (2012), the adjectives will observe the hierarchy found prenominally, i.e. AP > A⁰ > N. The difference is that the structure is right branched as shown below:²⁰

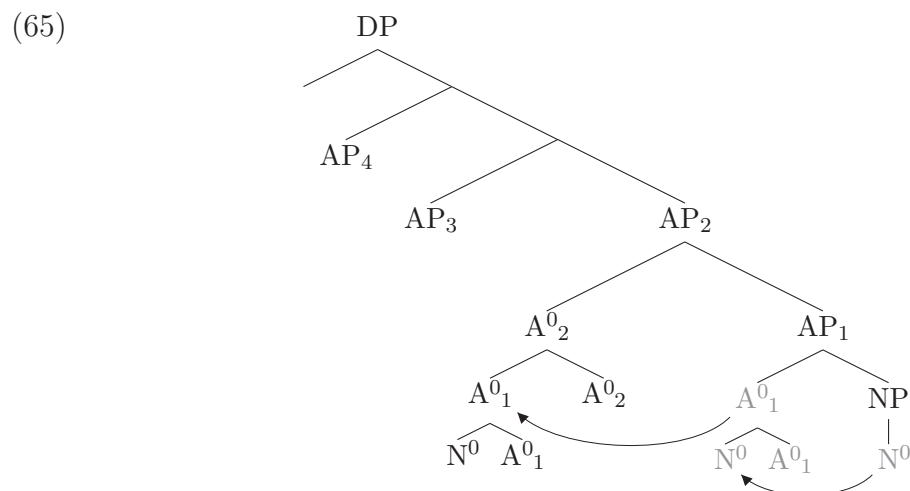
(64)



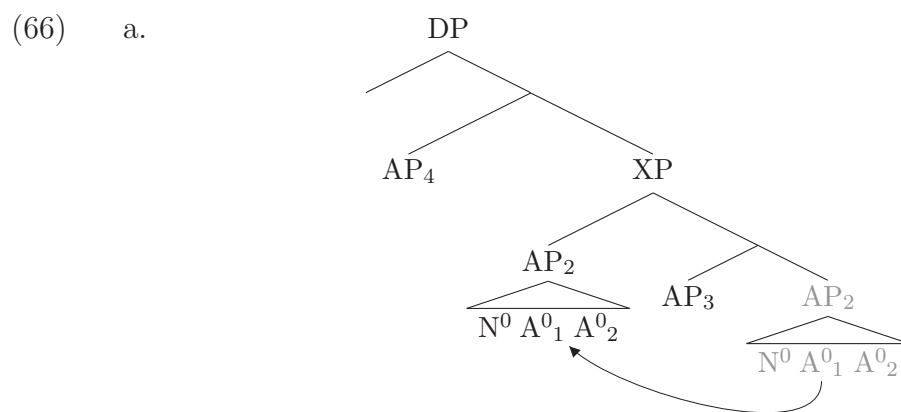
If the mirror image is derived via movement, which is what Cinque (2010) assumes, then the order will have to be derived via head-movement and subsequent

²⁰Abels and Neeleman's analysis is discussed in more detail in section 5.6.1.2, chapter 5.

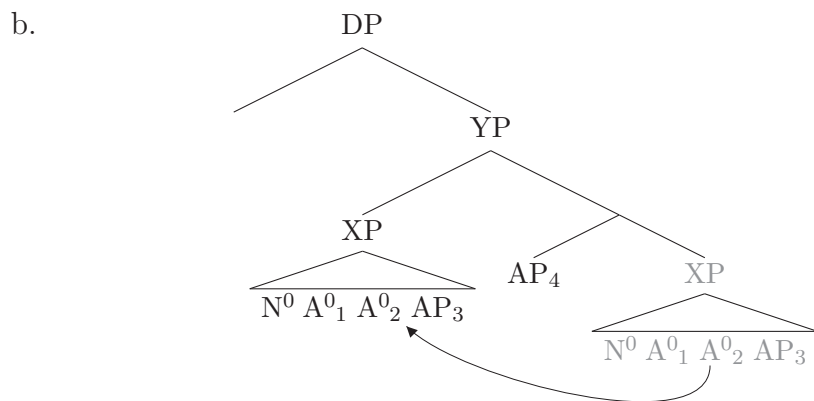
roll-up movement. In the structure in (65) we see the first part of the derivation; the noun adjoins to its closest A^0 creating a new complex head, and the new complex head subsequently moves to the next A^0 in the structure. This is repeated if there are more head-adjectives in the structure. If, as Kayne (1994) proposes, adjunction of the moved head is to the left of the target head, then the order of the adjectives will be the mirror image of the prenominal order as shown below:



The next step involves roll-up movement. The phrase that contains the noun and the head adjectives (i.e. AP_2) moves above the nearest phrasal adjective to the Spec of some XP as shown in (66a).²¹ Subsequently, the whole XP moves above the next AP in the structure as shown in (66b). Again, if there are more APs in the structure, then the whole phrase will cyclically roll-up above each AP.



²¹The XP is an AgrP in Cinque's (2010) analysis. More details of this are given in section 5.6.1.1, chapter 5.



If adjunction of a moved head is always to the left of another head, then head movement cannot derive the postnominal order where the adjectives stay in the universal order. As a result, the prediction would be that postnominal adjectives in languages like Welsh and Irish, which follow the universal order, modify the noun only as phrases. However, more research needs to be done in order to establish whether this prediction holds, and to determine whether there are any further ramifications that follow from the mirror image derivations I have sketched out above.²²

3.4 Information structure

Information structure is another factor that can affect the rigidity of the adjective order. If we take the DP to be analogous to the CP, then this is not surprising as the canonical order of constituents in the clause can be violated when one of the constituents is focussed or topicalised. This is demonstrated in the English example below, where the unmarked SVO order can be altered when the object bears focus.²³

- (67) a. Michèle ate the chocolate.
 b. THE CHOCOLATE Michèle ate (not the biscuits).

Rizzi (1997) argues that the left periphery of the clause consists of functional heads dedicated to information structure, such as Top⁰ for topic and Foc⁰ for focus. Any topicalised or focussed constituent will move to the functional projections of these heads, hence the noncanonical ordering.

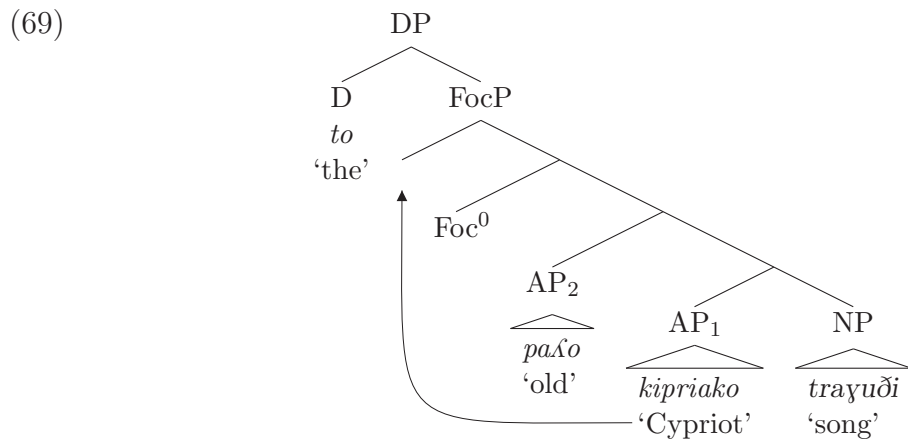
²²Complement PPs of the noun do not pose a problem if we assume that these are merged higher than adjectives as in Adger 2013, or that P⁰ is merged high in the extended nominal projection as in Cinque 2010, following Kayne (2004, 2005).

²³Focus is marked with small capitals.

Similarly, if an adjective inside the nominal domain is focussed then it can surface in a noncanonical position. While ‘old’ appears to the left of ‘Cypriot’ in the unmarked order in (68), it can appear in the reverse order if the nationality adjective is focussed.

- (68) a. epekse **to paʎo kipriako trayuði** pu tu emaθe
 played.3SG the old Cypriot song that 3SG.M.GEN learned
 i jaja tu
 the grandmother 3SG.M.GEN
 ‘He played the old Cypriot song that his grandmother had taught him’
- b. trayuðisame **to KIPRIAKO paʎo trayuði** telika, (oçi to
 sang.3PL the Cypriot old song eventually, (not the
 kritiko)
 Cretan)
 ‘We sang the CYPRIOT old song after all, (not the Cretan one).’

Drawing upon Rizzi’s (1997) analysis of the left periphery in the clause, several linguists have argued that there is also a Focus projection in the left periphery of the DP (Giusti 1996, 2005; Dimitrova-Vulchanova and Giusti 1998; Aboh 2004; Truswell 2004). The violation of the cross-linguistic adjective order in the example above is thus accounted for, by assuming that the focussed nationality adjective has moved above the non-focussed adjective to FocP. This is represented below:



The above structure shows focalisation of a phrasal adjective. If, however, direct modification adjectives can also be heads as argued in the previous section, the question that arises is whether head-modifiers can also be focussed. My claim is that only phrasal adjectives can undergo movement to a Focus position. Supporting evidence for this comes from the unacceptability of the examples in (70).

The non-modified nationality adjective, which as argued in the previous section modifies the noun as a head, is forbidden from appearing to the left of the phrasal adjective even when it is focussed. Movement of a head-modifier to a Focus position is blocked as an X^0 cannot move to a phrasal position as predicted by Emonds' (1976) Structure-Preserving constraint, as well as the Head Movement Constraint (Travis 1984).

- (70) a. *a CYPRIOT very Cypriot man.
 b. *a RED very red cherry.

An alternative view is that there need not be a functional projection dedicated to focus, in order to account for the discourse-related word order variation in the clause. Instead, the noncanonical order is the result of effects in the interface between syntax-semantics, and syntax-information structure (Neeleman and Vermeulen 2012, and other chapters in the same book). Szendrői (2012) extends this idea to the nominal phrase, and she claims that the noncanonical order of adjectives in English is triggered by scope requirements. In particular, an adjective moves to mark its sister as the *Domain of Contrast* (DoC), as formalised by Neeleman et al. (2009):

- (71) *DoC Marking*

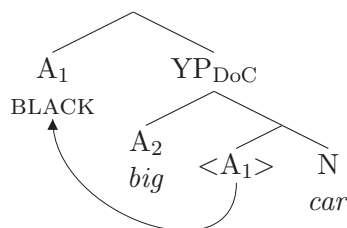
The sister of a moved contrastive focal (or topical) constituent, XP, is interpreted as the domain of contrast for XP.

Szendrői (2012:195) argues that adjectives which are accented and contrastively focussed do not always have to move, and she provides the example in (72) as evidence of this. Movement, according to Szendrői only takes place when the adjective has to mark a domain of contrast, as represented in (73b).

- (72) My friends all drive big cars, but only I drive a big BLACK car.

- (73) a. I drive a BLACK big car.

b.



Szendrői (2012:195–196) provides the contexts in (74) to demonstrate the interpretational difference between (72) and (73b). The only available context for the noncanonical order *black* \succ *big* is the first one, where the domain of contrast is the already established set of *big cars*. For the canonical order, however, both contexts are available. What is given in the discourse is the set of *cars*. The domain of contrast is not marked, and, consequently, the contrast is based on contextual clues.

- (74) a. *Context 1:* In this car park you can see my friends' cars and my car. There is a bunch of big cars here. They are of many different colours.
Scenario 1: **BLACK** RED BLUE WHITE BLUE YELLOW
- b. *Context 2:* In this car park you can see my friends' cars and my car. There are cars of many different colours. Some of them are small, but there are big cars of every colour.
Scenario 2: black **BLACK** black black
red red red **RED** red red
...
- (75) a. I drive a **BLACK** big car. Context 1: ✓ Context 2: #
b. I drive a big **BLACK** car. Context 1: ✓ Context 2: ✓

It is not immediately obvious what the difference is between assuming a dedicated Focus position in the extended nominal projection and Szendrői's analysis, as they both involve fronting the focussed constituent. Szendrői's analysis, however, allows more flexibility in the order. This is because the focussed constituent does not move to a fixed position, but rather, it moves above the XP that needs to be marked as the DoC, which could vary from case to case. For instance, in (76a) we see that the focussed adjective moves in a position above another adjective, but lower than the numeral, as the DoC is *long dresses*. In (76b), on the other hand, the focussed adjective moves above the numeral since the numeral is part of the DoC *six children*.

- (76) a. Orm's two **RED** long dresses are not as nice as her three black ones.
b. Carol's **HORRIBLE** six children made life miserable for her second husband not as tall as her older ones.²⁴

²⁴Example taken from Andrews 1983:697, cited in Szendrői 2012:199.

From what we have seen in this section we can conclude that information structure is another contributing factor to the flexibility of adjective ordering. On the other hand, Cinque (2010:59) claims that movement of adjectives to a focus position or scope reorderings do not suffice to account for reversals of the unmarked order. Reversals of the unmarked order are, according to Cinque, the result of merging the leftmost adjective inside a RRC. He bases this argument on the unacceptability of the reverse order in the examples in (77). If the reorderings were a mere case of focus/scope fronting, then we would expect that the following orders would be acceptable when the “displaced” adjective is focussed, but they are not. Cinque argues that the ungrammaticality is, instead, derived from the fact that the indirect source of modification is unavailable to these adjectives, as they are nonpredicative.

- (77) a. *He is a NUCLEAR young physicist (cf. a young nuclear physicist)
 b. *He is a HEAVY former drinker (cf. a former heavy drinker)
 c. *He is a HARD alleged worker (cf. an alleged hard worker)

(Cinque 2010:59, (66))

The same argument could be extended to the examples given earlier in (24) and (25), repeated below:

- (24) a. She is a tall electrical engineer.
 b. *She is an ELECTRICAL tall engineer.
 c. *An engineer who is electrical.

- (25) a. She is an alleged heavy drug-user.
 b. *She is a HEAVY alleged drug-user.
 c. #A drug-user who is heavy. *or* *A drug-user who is alleged.

The fact that focus fronting is unavailable in the above examples, however, can also be accounted for if we analyse these adjectives as heads. Building on what was proposed in the previous section, it appears that the adjectives in these examples are found low in the extended nominal projection, where adjectives modify the noun as heads. The assumption that these adjectives are merged in a low position is confirmed by the fact that when another adjective intervenes between them and the noun as in (77), the sentence is not ungrammatical, but we get a new reading in which the adjective loses its initial interpretation.

For instance, in *heavy drinker* and *heavy drug-user* the adjective *heavy* modifies the event of drinking and drug-using respectively. If *heavy* moves above the adjective to its left, this will not result in ungrammaticality but, instead, it will give rise to the non-event readings ‘a former drinker who weighs a lot’ for (77b) and ‘an alleged drug-user who weighs a lot’ for (25b). In other words, *heavy* simply modifies the individual denoted by the result noun and it no longer has access to the event reading of the derived nominal. I take this interpretational distinction to be the result of the adjective modifying the noun as a head when *heavy* modifies the event, but as a phrase when it modifies the individual.

Consequently, the fact that the adjectives in the above examples cannot be focussed could be accounted for by the unavailability of heads to undergo focus fronting as was claimed earlier in this section. Focus fronting can, nevertheless, still account for other instances where ordering restrictions are lifted when an adjective is focussed.

3.5 Intensional adjectives and other ordering considerations

Teodorescu (2006) discusses the free ordering of intensional operator adjectives, like *former* and *alleged*, and points out that these adjectives pose a problem if we are to assume that there is a unique unmarked order. The examples Teodorescu provides as supporting evidence are given below:

- (78) a. a famous former actor
 b. a former famous actor
- (79) a. a famous alleged actor
 b. an alleged famous actor

(Teodorescu 2006:401, (12) & (13))

While Teodorescu considers the adjectives in these phrases to be freely ordered, she notes that the phrases have different interpretations, depending on which one of the two adjectives appears to the left. For instance, in (78a) the individual is someone famous who used to be, but no longer is, an actor. In (78b), however, the individual used to be famous at some point as an actor, but he no longer is famous and he could still be an actor today.

Intensional adjectives differ semantically from other adjectives. While ‘a square table’ denotes the intersection of the set of square things and the set of tables, ‘a former dancer’ cannot simply be the intersection of the set ‘former’ and ‘dancers’ as it denotes an individual that used to be a dancer at a time before the present. This is what (80) represents (Teodorescu 2006:402, (15a)).

$$(80) \quad [\text{former}]^{\text{now}} = \lambda f. [\lambda x. f(\text{now})(x) = 0 \text{ but } f(t)(x) = 1 \text{ for some time } t \text{ before now}]$$

According to Teodorescu the freedom in the order of intensional adjectives cannot be regarded as an instance of indirect modification. That intensional adjectives do not have an indirect source is verified by the fact that they are nonpredicative, and as a consequence, are excluded from merging in a reduced relative clause. As for parallel modification, the counter-evidence comes from the examples in (78) and (79), where it is obvious that the leftmost adjective must scope over, and modify, the [A N] constituent, not just the noun. This observation contradicts what is assumed to be the character of parallel modification, which is that each adjective modifies the noun in a separate syntactic and phonological phrase. If the phrases in the above examples were instances of parallel modification, then the meaning of the phrase would always be the same regardless of the ordering of adjectives.

Another factor that, as we have seen, has an effect on ordering restrictions, but which does not seem to apply here, is focalisation. Phrases that are focussed in English usually come with special intonation. However, the adjectives that appear in the leftmost position in (78) and (79) do not necessarily differ intonationally from the adjective to their right.

The argument that intensional adjectives do not have an unmarked ordering is, in my opinion, not accurate and this becomes apparent when one looks at the available readings for each order. This is done in the following subsection.

3.5.1 Readings of unmarked vs. marked orders

Before looking at the ordering of intensional adjectives in more detail, consider the unmarked ordering of a size and shape adjective in the English phrase in (81). This phrase has two interpretations. In the first one, the table is square and it is also big in comparison to other members of the set of tables. This set might include tables of all shapes, and not just square tables. In other words, *big* only modifies *table* in the first reading. In the second reading *big* modifies *square*

table, which means that the table is big in comparison to other square tables. For example, it could be the case that the big square table is in fact quite small in comparison to, say, round tables.

- (81) the big square table *Unmarked*
- a. Reading 1: $\llbracket \text{big square table} \rrbracket = \llbracket \text{big table} \rrbracket$ and $\llbracket \text{square table} \rrbracket$
 $\lambda x. [\text{big}(\text{table}(x)) \wedge \text{square}(\text{table}(x))]$
- b. Reading 2: $\llbracket \text{big square table} \rrbracket \subseteq \llbracket \text{square table} \rrbracket$
 $\lambda x. \text{big}(\text{square}(\text{table}(x)))$

However, if the unmarked order of the two adjectives is violated and the shape adjective appears first as in (82), then only one reading is available. This reading is the one where the adjective to the left, namely, *square* modifies the size adjective and the noun as one constituent. The reading where each adjective independently modifies the noun is unavailable.

- (82) the square big table *Marked*
- a. #Reading 1: $\llbracket \text{square big table} \rrbracket = \llbracket \text{square table} \rrbracket$ and $\llbracket \text{big table} \rrbracket$
 $\lambda x. [\text{square}(\text{table}(x)) \wedge \text{big}(\text{table}(x))]$
- b. Reading 2: $\llbracket \text{square big table} \rrbracket \subseteq \llbracket \text{big table} \rrbracket$
 $\lambda x. \text{square}(\text{big}(\text{table}(x)))$

Other examples which show the same contrast are given in (83)–(86).

- (83) a fat round face *Unmarked*
- a. Reading 1: $\llbracket \text{fat round face} \rrbracket = \llbracket \text{fat face} \rrbracket$ and $\llbracket \text{round face} \rrbracket$
 $\lambda x. [\text{fat}(\text{face}(x)) \wedge \text{round}(\text{face}(x))]$
- b. Reading 2: $\llbracket \text{fat round face} \rrbracket \subseteq \llbracket \text{round face} \rrbracket$
 $\lambda x. \text{fat}(\text{round}(\text{face}(x)))$
- (84) a round fat face *Marked*
- a. #Reading 1: $\llbracket \text{round fat face} \rrbracket = \llbracket \text{round face} \rrbracket$ and $\llbracket \text{fat face} \rrbracket$
 $\lambda x. [\text{round}(\text{face}(x)) \wedge \text{fat}(\text{face}(x))]$
- b. Reading 2: $\llbracket \text{round fat face} \rrbracket \subseteq \llbracket \text{fat face} \rrbracket$
 $\lambda x. \text{round}(\text{fat}(\text{face}(x)))$

- (85) the clever black cat *Unmarked*
- a. Reading 1: $\llbracket \text{clever black cat} \rrbracket = \llbracket \text{clever cat} \rrbracket$ and $\llbracket \text{black cat} \rrbracket$
 $\lambda x. [\text{clever}(\text{cat}(x)) \wedge \text{black}(\text{cat}(x))]$
- b. Reading 2: $\llbracket \text{clever black cat} \rrbracket \subseteq \llbracket \text{black cat} \rrbracket$
 $\lambda x. \text{clever}(\text{black}(\text{cat}(x)))$
- (86) the black clever cat *Marked*
- a. #Reading 1: $\llbracket \text{black clever cat} \rrbracket = \llbracket \text{black cat} \rrbracket$ and $\llbracket \text{clever cat} \rrbracket$
 $\lambda x. [\text{black}(\text{cat}(x)) \wedge \text{clever}(\text{cat}(x))]$
- b. Reading 2: $\llbracket \text{black clever cat} \rrbracket \subseteq \llbracket \text{clever cat} \rrbracket$
 $\lambda x. \text{black}(\text{clever}(\text{cat}(x)))$

Intonation also appears to be important when it comes to distinguishing the markedness of the order. Consider (87). In the unmarked order, where each adjective modifies the noun independently, there is no pause after the adjectives, and there is rising intonation on the noun. If, in the unmarked order, there is lowering intonation on the first adjective and a pause between the two adjectives, then the interpretation will be the one where *fat* must scope over *round*. If the order stays the same, but *fat* is focussed, then again the only reading available is the one where *fat* modifies *round face* and not just *face*. Moving on to the marked order in (87d), we observe that there is lowering intonation on the first adjective and a pause between the two adjectives, as in (87b). That the marked order is not an instance of parallel modification becomes obvious when we compare it to (87e) where both adjectives have falling intonation and are followed by a pause.

- (87) a. a fat round ↗face = fat(face) ∧ round(face) *Unmarked*
- b. a ↘fat | round ↗face = fat(round(face)) *Unmarked*
- c. a FAT | round face = FAT(round(face)) *Focussed*
- d. a ↘round | fat ↗face = round(fat(face)) *Marked*
- e. a ↘round | ↘fat | face = round(face) ∧ fat(face) *Parallel*

What the above observations suggest is that adjectives in their canonical order allow two different interpretations. On the other hand, when adjectives appear in a marked order, they do not seem to be able to modify the noun directly but, instead, they modify the noun in combination with any adjectives that intervene in between. If this is true, then we can test whether this distinction emerges in

phrases with intensional adjectives as well.

Firstly, in (88) where the intensional adjective precedes the quality adjective, we observe that two readings are available. The first reading is the one where the individual is a former student who was or is still bright. In the second interpretation the individual is currently still a student, but is no longer bright. This reading would be appropriate in the context given in (88b). These observations indicate that in the first instance *former* modifies the noun directly, while it modifies *bright student* in the second reading.

(88) the former bright student

a. Reading 1: no longer a student

$\lambda x.[\text{former}(\text{student}(x)) \wedge \text{bright}(\text{student}(x))]$

b. Reading 2: still a student, but no longer bright

$\lambda x.\text{former}(\text{bright}(\text{student}(x)))$

Context: *Professor A said that X is a former bright student of hers, but heavy substance abuse has led to impairment of his cognitive skills. He still attends all of her classes though.*

Moving on to the reverse order, the first reading where the leftmost adjective modifies the noun directly, without taking into account the intervening adjective, is not felicitous, as ‘a bright former student’ does not entail ‘a bright student’. The semantics of the first reading given in (89a), suggest that this entailment should be accessible if *bright* can modify *student* directly. That this meaning is not accessible, however, is evident from the fact that ‘a bright former student’ is felicitous in a case where the individual was not particularly bright as a student, but has since developed to be very intelligent. As a result, the only valid reading in this reversed order is the one where the individual is no longer a student and was bright as a student or is still bright as an individual. This means that *bright* modifies *former student*.

(89) the bright former student

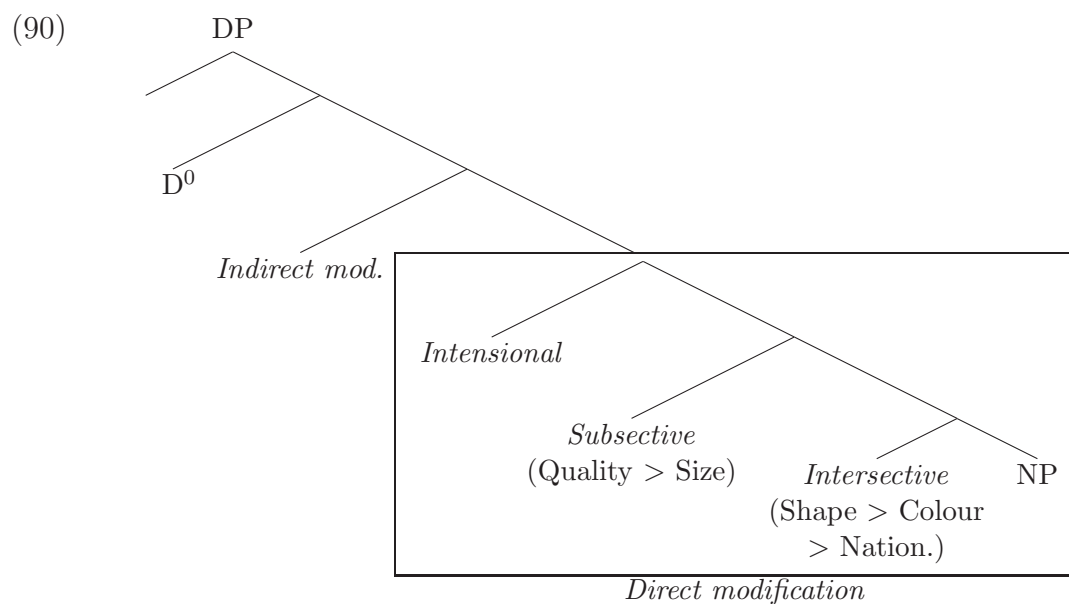
a. #Reading 1: bright while a student and no longer a student

$\lambda x.[\text{bright}(\text{student}(x)) \wedge \text{former}(\text{student}(x))]$

b. Reading 2: no longer a student and was or is still bright

$\lambda x.\text{bright}(\text{former}(\text{student}(x)))$

What the above examples verify is that the patterns we find with intensional adjectives agree with the patterns observed with non-intensional adjectives. Given that non-intensional adjectives allow two readings when they follow the unmarked order, it is reasonable to assume that the unmarked order of intensional adjectives is also the one where two readings are available. In other words, the unmarked ordering of intensional adjectives is the one where they appear to the left of non-intensional adjectives. In hierarchical terms, this means that intensional adjectives are merged higher in the structure than all other direct modification adjectives as illustrated in (90) below.



In previous sections of this chapter it was mentioned that for Cinque (2010) any instance where the unmarked order is violated, can be accounted for by assuming that one (or more) of the adjectives in the phrase has an indirect source. We have also seen that information structure affects the canonical order of adjectives. The question, then, is whether focus fronting or indirect modification are responsible for deriving the marked orders in the examples above, or if they are the result of some other factor. The next subsection is concerned with answering this question.

3.5.2 Deriving the marked orders

In the marked orders in the discussion above, it is evident that the leftmost adjective is not necessarily focussed. It is therefore safe to conclude that the marked order is not always the result of focalisation. In order to test whether the marked order is the outcome of the leftmost adjective having an indirect source,

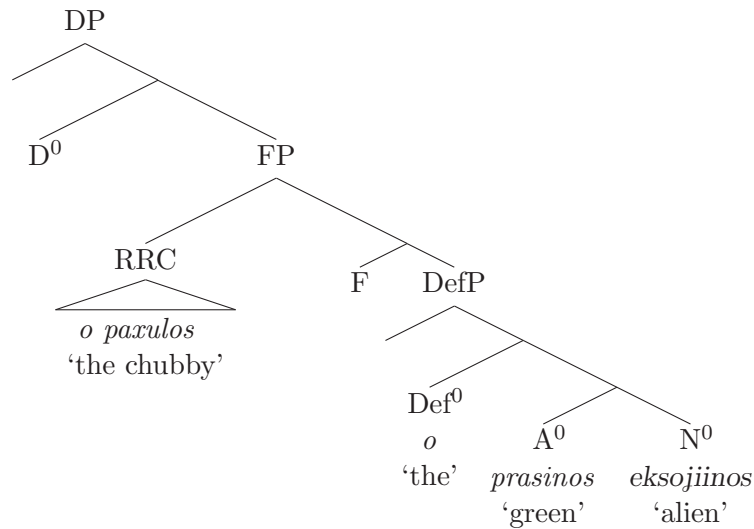
we will look at Greek which overtly marks indirect modification. As we saw in (29), which is repeated below, in polydefinite constructions the definite article will appear in front of each adjective and the noun, and the modifiers and the noun can surface in any order.

- (29)
- a. to mevalo to aspro to bol
the big the white the bowl
 - b. to aspro to mevalo to bol
the white the big the bowl
 - c. to mevalo to bol to aspro
the big the bowl the white
 - d. to aspro to bol to mevalo
the white the bowl the big
 - e. to bol to mevalo to aspro
the bowl the big the white
 - f. to bol to aspro to mevalo
the bowl the white the big
'the big white bowl'

In Greek it is also possible to find phrases where one adjective has a direct source of modification, and another an indirect source. Such a case is given in (91). The adjective *paxulos* 'chubby' has an indirect source, while *prasinos* 'green' is a direct modifier. The evidence for this is that 'chubby' is free to appear either prenominally or postnominally, while 'green' is restricted to a prenominal position as the unacceptability of (91c) suggests. The structure for the phrase in (91) is roughly represented in (92). Chapter 4 discusses the phenomenon in much greater detail, and presents the motivations for this structure. What is relevant for the present discussion is that direct modification adjectives are merged below Def⁰, and that DefP can optionally move to Spec,DP, which is why, I assume, indirect modification adjectives can surface postnominally.

- (91)
- a. o paxulos o prasinos eksojiinos
the chubby the green alien
 - b. o prasinos eksojiinos o paxulos
the green alien the chubby
 - c. *o paxulos o eksojiinos prasinos
the chubby the alien green
'the chubby green alien'

(92)



The argument is therefore as follows: if only one reading is available to a phrase with two adjectives, it means that the order of the adjectives is marked. If the order is marked, then this could be a consequence of merging the leftmost adjective inside a RRC. If the adjective is merged inside a RRC, the prediction is that in Greek we will find an extra definite article. In (93), however, we see that the marked order is available even when there is no additional definite article. This suggests that the adjective *prasinos* in (93b) is not an indirect modifier.

- (93) a. o paxulos prasinos eksojiinos *Unmarked*
 the chubby green alien
 Reading 1: chubby alien and green alien
 Reading 2: green alien who is chubby
- b. o prasinos paxulos eksojiinos *Marked*
 the green chubby alien
 #Reading 1: green alien and chubby alien
 Reading 2: chubby alien who is green

Interestingly, when one of the two adjectives in the phrase is intensional, as in (94), then indirect modification seems to be unavailable to both adjectives, even though the second adjective is predicative and should, therefore, have access to the reduced relative source. The phrases in (94) are acceptable only if ‘clever’ is contrastively focussed and bears special intonational marking. It appears that the presence of the nonpredicative adjective is somehow blocking indirect modification for the predicative adjective. When both adjectives modify the noun in a monodefinitive as in (95), then we find the same patterns as in (88) and (89) above, where the unmarked order is Intensional \succ Quality.

- (94) a. ??_[Indirect mod. o eksipnos] _[Direct mod. o proin fititis]
the clever the former student
- b. ??_[Direct mod. o proin fititis] _[Indirect mod. o eksipnos]
the former student the clever
- (95) a. o proin eksipnos fititis *Unmarked*
the former clever student
Reading 1: no longer a student but was or still is clever
Reading 2: still a student, but no longer clever
- b. o eksipnos proin fititis *Marked*
the clever former student
#Reading 1: clever while a student and no longer a student
Reading 2: no longer a student and was or still is clever

The Greek data, therefore, contradicts the analysis where all adjectives in non-canonical positions are instances of indirect modifiers. While the marked order is indeed sometimes the result of one or more adjectives having an indirect source, such an analysis cannot capture the marked order of monodefinites (direct modifiers) in Greek. What I propose instead for Greek monodefinites is that the marked order is the outcome of merging the leftmost adjective as an AP in direct modification, while the adjective closest to the noun is a head-modifier.²⁵ This assumption also accounts for the availability of two readings with the unmarked order, but only one with the marked order.²⁶

Let us look at this in more detail. In the unmarked order in (96) I assume that the reading where each adjective modifies the noun directly is associated with a structure where the two adjectives are merged as heads. This is illustrated in (96a). The second reading, where the leftmost adjective takes scope over the lower adjective, corresponds to the structure in (96b) where the leftmost adjective modifies the noun as an AP and the lower adjective as a head.²⁷

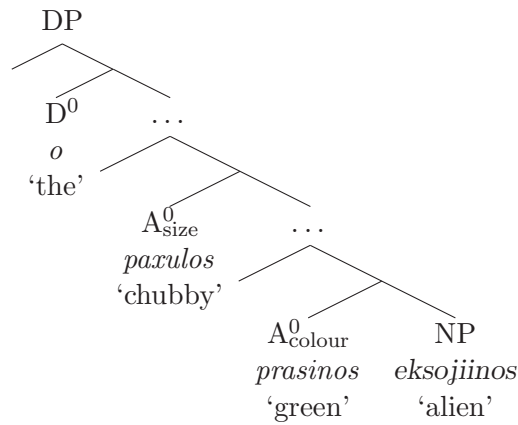
- (96) o paxulos prasinos eksojiinos *Unmarked*
the chubby green alien

²⁵The motivations for an analysis in which adjectives in direct modification can modify the noun either as heads or phrases were discussed in section 3.3.

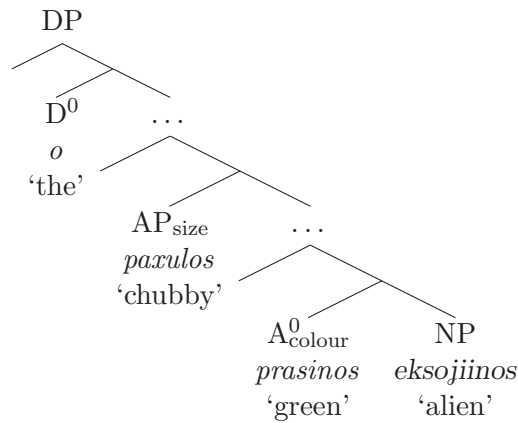
²⁶This analysis, of course, can be extended to English and to any language where the non-canonical order is acceptable, but comes with just one reading.

²⁷The ellipses in the structures indicate that there is more stuff in the structure than what is represented here. For instance, there are dedicated functional projections in which APs are merged, and more A⁰ positions where adjectives are hierarchically merged as heads in accordance to the universal order.

- a. Reading 1: [[chubby alien]] and [[green alien]]



- b. Reading 2: [[chubby green alien]] ⊆ [[green alien]]

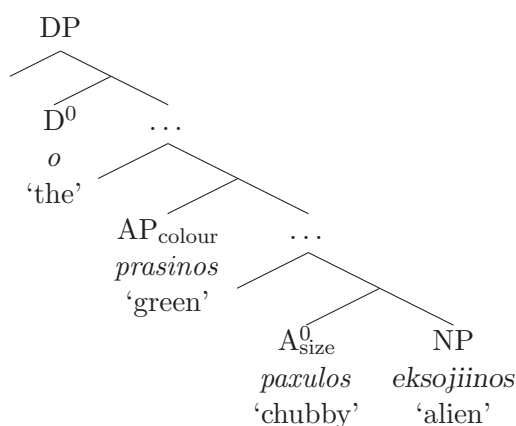


Now consider the marked order in (97), where the leftmost adjective is merged as an AP and the lower adjective as a head. If AP > A⁰ orders only give rise to the reading where the phrasal-modifier takes scope over the lower head-modifier, it is predicted that this will be the only available reading to marked orders. This is borne out:

- (97) o prasinós paxulos eksojiinos *Marked*
 the green chubby alien

- a. #Reading 1: [[green alien]] and [[chubby alien]]

- b. Reading 2: $\llbracket \text{green chubby alien} \rrbracket \subseteq \llbracket \text{chubby alien} \rrbracket$



This analysis also captures the data with intensional adjectives. In *the former bright student*, *former* can modify the noun either as a head or a phrase, while in *the bright former student*, *bright* modifies the noun as a phrase.

To recapitulate, I argued that intensional adjectives have an unmarked ordering, something that goes against Teodorescu’s (2006) claim that intensional adjectives have no ordering restrictions. I suggested that the unmarked order of adjectives comes with two readings, while only one reading is available with the marked order. This reading is the one where the leftmost adjective takes scope over any adjectives to its right. It was further argued that the marked order is not always the result of focalisation. An alternative analysis is one where adjectives in the marked order are assumed to be merged in a reduced relative clause, in accordance with Cinque (2010). However, the Greek data provided evidence against such an analysis. Instead, I suggested that marked orders in direct modification can be accounted for if we assume that the leftmost adjective obligatorily modifies the noun as a phrase. The head position is available to the leftmost adjective only in an unmarked order.

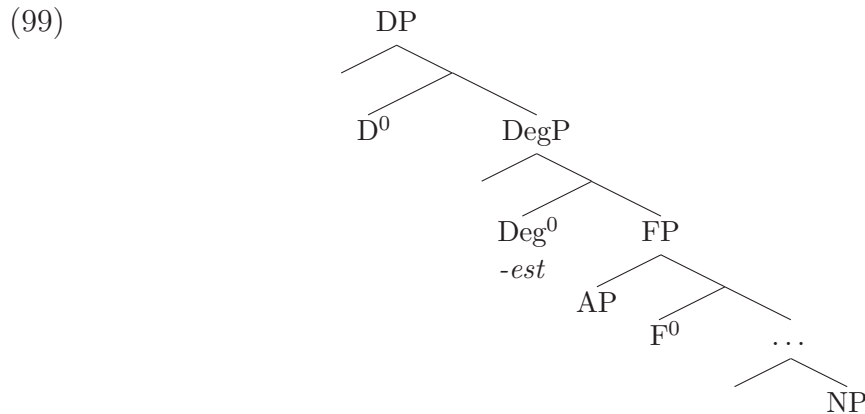
3.5.3 Some remarks on superlative and comparative adjectives

Superlative adjectives also appear to violate the unmarked order of adjectives. While *old* must follow *big* in the unmarked order, it obligatorily precedes it if it is marked with *-est*. This is what we see in (98).

- (98) a. Seamus lives in the big old house.
 b. #Seamus lives in the old big house.

- c. *Edna lives in the big oldest house.
- d. Edna lives in the oldest big house.

This is accounted for if the head associated with the morphology and the semantics of superlatives is found higher than other adjectives. In the tree below this head is labelled as Deg⁰. We can therefore assume that superlative adjectives either merge inside the DegP directly, or they move there from a lower position.



Teodorescu (2006) observes that while the order of definite superlatives is fixed and they have to appear in front of other adjectives, this is not the case for indefinite superlatives. As a starting point she gives the example in (100) and notes that there are two possible readings for this; the student is shorter than any other Italian student in the class, or the student is the shortest in the class, regardless of nationality.

- (100) My class has [a shortest student from Italy].²⁸

(Teodorescu 2006:403, (21))

If we turn the PP into a nationality adjective then each reading is associated with a distinct ordering of the two adjectives. The position where the superlative precedes ‘Italian’ as in (101a) is associated with the reading where the student is shorter than any other Italian student in the class, but is not necessarily the shortest in class. The reverse order, on the other hand, refers to the shortest student in the class who happens to be Italian.

- (101) a. My class has a shortest Italian student.

²⁸As I note later, not all native English speakers accept this sentence. The marginal acceptability of this specific example might be related to the use of *have* (cf. **I met a shortest student from Italy*).

- b. My class has an Italian shortest student

(Teodorescu 2006:403, (22))

What appears to be the case is that the definite article blocks any lower adjectives from taking scope over the superlative adjective, while the indefinite article does not have this effect. However, not all English speakers share the judgements in (100) and (101). All three sentences sound odd, and (101b) seems to be the most degraded. Even so, it is interesting that the sentence in (101a) receives a comparative reading, as superlatives and comparatives are associated with distinct syntax.

Matushansky (2008) argues that superlative adjectives must always be attributive. In cases where there is no overt noun she assumes that there still is an elided noun in the structure. One of her reasons for proposing this is that superlatives must always appear with a definite article (*This weather is *(the) worst.*). Taking this into account, it could be argued that superlative adjectives must necessarily be definite, which is why (101a) has a comparative, rather than a superlative reading.

This correlation between definiteness and superlatives vs. comparatives is evident in Greek. While comparative and superlative adjectives are often morphologically identical, only the comparative reading is available in an indefinite context:

- (102) a. xriazome ena vaθ-itero pcatō
 need.1SG a deep-er plate
 ‘I need a deeper plate’
 b. xriazome to vaθ-itero pcatō
 need.1SG the deep-er plate
 ‘I need the deeper/deepest plate’

The definite phrase in (102b) could be either interpreted as a comparative or a superlative depending on the context. The fact that both comparatives and superlatives can be definite, however, does not mean that they are syntactically similar. Supporting evidence for this comes again from Greek. As shown below in (103), superlatives are excluded from polydefinite constructions, but comparatives are perfectly acceptable. The polydefinite in (103c) can only have a comparative reading. If we change the number from two to three boys, which would force a superlative reading, we see that the polydefinite is no longer available.

- (103) a. to psilotero (*to) vuno ine to Everest
 the highest the mountain is the Everest
 ‘The highest mountain is Everest.’
- b. apo tus ðio, mu arese to psilotero to ayori
 from the two, me liked the taller the boy
 ‘Out of the two of them, I liked the taller boy’
- c. apo tus tris, mu arese to psilotero (*to) ayori
 from the three, me liked the taller the boy
 ‘Out of the three of them, I liked the tallest boy’

The Greek data, therefore, supports Matushansky’s claim that superlatives must be attributive, as they are excluded from the polydefinite construction which is strictly predicative. In addition, it appears that comparatives are allowed in indirect modification.²⁹

Going back to the issue of the ordering, I conclude that superlative adjectives are quite high in the structure, possibly higher than the indirect modification source. This is why superlative adjectives always appear to the left of any other adjectives in languages with prenominal adjectives. Comparatives also appear higher than other adjectives:

- (104) a. Fangfang lives in the older big house.
 b. ??Fangfang lives in the big older house.

However, comparatives differ from superlatives as the latter are excluded from indirect modification (polydefinites), but the former are allowed.

3.6 Chapter summary

The aim of this chapter was to show that violations in adjective ordering can be accounted for by a variety of factors, without having to eliminate the idea that adjective ordering is a syntactic constraint. The first factor that affects ordering is the type of modification: parallel and indirect modification do not observe any ordering restrictions, while inflexibility of the order is found with direct modification.

The next factor has to do with the level of modification. I argued that adjectives in direct modification can modify the noun either as phrases or heads. Phrases are hierarchically higher than heads, and consequently, in phrases where

²⁹The fact that comparatives have access to the indirect source is in line with Adger’s (2005) proposal that comparatives in Scottish Gaelic are in fact relatives.

some adjectives modify the noun as phrases and others as heads, it is likely that we will find violations of the order.

Focus can also affect the unmarked ordering of adjectives, as focussed adjectives undergo focus fronting above any other adjectives. In relation to this, it was claimed that adjectives which modify the noun as heads cannot undergo focus fronting.

The discussion about the ordering of intensional adjectives, revealed that unmarked orders come with two interpretations, while marked orders are restricted to a single interpretation. What was proposed was that unmarked ordering is associated with both head-modifiers (e.g. $A^0 > A^0 > N$), as well as phrasal- and head-modifiers (e.g. $AP > A^0 > N$). On the other hand, when the marked order involves adjectives in direct modification, then it can only be of type $AP > A^0 > N$. The order $*A^0 > AP > N$ is excluded as head adjectives are hierarchically merged lower than phrasal adjectives.

Finally, we saw that superlative and comparative adjectives appear to be merged high in the extended nominal projection, which is why adjectives marked for these categories do not comply with the unmarked universal order.

Chapter 4

Greek Polydefinites

4.1 Introduction

The present chapter focuses on adjectival modification in Greek, and particularly on the phenomenon of *polydefiniteness*¹ (Kolliakou 2004, Velegrakis 2011, Lekakou and Szendrői 2012). In polydefinite constructions, the definite article emerges in front of each modifier, as well as the noun. The multiple instantiations of the definite article are mandatory with postnominal adjectives, but optional with prenominal ones. This is what we see in (1).

- (1) a. *(o) kleftis *(o) psilos
the thief the tall
b. o psilos (o) kleftis
the tall the thief
'the tall thief'

The fact that adjectives are permitted both in a prenominal and a postnominal position, is unique to polydefinites. In Greek *monodefinitive* constructions where, analogously to English, a single definite article is present, the adjectives are strictly prenominal as shown in (2).² If, however, there are multiple occurrences of the definite article, as in (3), then both positions become available to the adjective. The definite articles, adjectives and noun always agree in case, number and gender both in monodefinites and polydefinites.

¹Another term that has been used in the literature for the same syntactic phenomenon is *determiner spreading*, first introduced by Androutsopoulou (1995).

²Kolliakou (2004) labels these constructions *monadics*.

(2) *Monodefinites*

- a. to prasino trapezi
the.N.NOM.SG green.N.NOM.SG table.N.NOM.SG
- b. *to trapezi prasino
the.N.NOM.SG table.N.NOM.SG green.N.NOM.SG
'the green table'

(3) *Polydefinites*

- a. to prasino to trapezi
the.N.NOM.SG green.N.NOM.SG the.N.NOM.SG table.N.NOM.SG
- b. to trapezi to prasino
the.N.NOM.SG table.N.NOM.SG the.N.NOM.SG green.N.NOM.SG
'the green table'

Another characteristic of polydefinites which sets them apart from monodefinites is the flexibility of the adjective order. As is evident from (4), stacked adjectives in monodefinites follow the semantic order mentioned in previous chapters.

(4) *Monodefinites*³

- a. to strojilo prasino trapezi *Shape* \succ *Colour* \succ *N*
the round green table
- b. #to prasino strojilo trapezi *#Colour* \succ *Shape* \succ *N*
the green round table
'the round green table'

In polydefinites all possible orders are grammatical. Taking into account that adjectives are also permitted postnominally, then we expect that a polydefinite construction with two adjectives will be able to generate six orders. This is indeed what we witness in (5).⁴

³The order in (4b) is acceptable in a context where the set of 'round tables' is already familiar in the discourse. Building on the discussion from chapter 3, this means that 'green' is either focussed or it might just be that it modifies the noun as an AP while 'round' modifies the noun as a head.

⁴Not all speakers agree that all orders in polydefinites are unmarked. For instance, Alexiadou and Wilder (1998) claim that (5b) is marked, in the sense that it is acceptable under a context where 'green' is more salient than 'round' in the discourse and it consequently has to scope over it. Velegrakis (2011) agrees, and also considers the order in (5c) to be marked. On the other hand, all orders in (5) are acceptable for Lekakou and Szendrői (2012) and Panagiotidis and Marinis (2011). What is, therefore, important to note is that even though there is variation between speakers, the markedness effects are not as strong as when there is an ordering violation in monodefinites.

- (5) *Polydefinites*
- | | | |
|----|--|---|
| a. | to strojilo to prasino to trapezi
the round the green the table | <i>Shape</i> \succ <i>Colour</i> \succ <i>N</i> |
| b. | to prasino to strojilo to trapezi
the green the round the table | <i>Colour</i> \succ <i>Shape</i> \succ <i>N</i> |
| c. | to trapezi to strojilo to prasino
the table the round the green | <i>N</i> \succ <i>Shape</i> \succ <i>Colour</i> |
| d. | to trapezi to prasino to strojilo
the table the green the round | <i>N</i> \succ <i>Colour</i> \succ <i>Shape</i> |
| e. | to strojilo to trapezi to prasino
the round the table the green | <i>Shape</i> \succ <i>N</i> \succ <i>Colour</i> |
| f. | to prasino to trapezi to strojilo
the green the table the round | <i>Colour</i> \succ <i>N</i> \succ <i>Shape</i> |

The ordering freedom observed above is restricted when the noun or an adjective are not preceded by the definite article. The article can skip the noun as long as there is at least one prenominal adjective. The prenominal adjective in this case, can also be articleless only if it is preceded by an articulated adjective. In other words, this means that it is possible to find a monodefinitive and a polydefinitive in the same structure. The monodefinitive in the examples in (6) is marked with square brackets. What we also observe in the following examples is that the articulated adjectives are free to either precede or follow the monodefinitive.

- (6)
- | | |
|----|--|
| a. | to strojilo *(to) prasino to trapezi
the round the green the table |
| b. | to mevalo [to strojilo (prasino) trapezi]
the big the round green table |
| c. | [to strojilo (prasino) trapezi] to mevalo
the round green table the big |

The purpose of this chapter is to investigate Greek polydefinites and to provide an analysis that will account for the flexibility in adjective ordering. The structure of the chapter is as follows. In section 4.2 I explore the pragmatic and semantic properties of polydefinites, which served as the starting point for several previous analyses. Section 4.3 presents some of the previous analyses on polydefinite constructions and concludes that none of these analyses fully captures the data, as they either overgenerate or undergenerate. In section 4.4 I introduce an alternative analysis, which draws on many of the analyses presented in the previous section, but which at the same time, tries to avoid the problems that come with

them. The main idea of the analysis that I put forward is that adjectives in polydefinites have a different source from adjectives in monodefinites. The former are derived in a reduced relative clause, while the latter are merged in the specifiers of dedicated functional projections in the extended nominal projection, in the manner of Cinque 2010. Another important feature of my analysis is the introduction of a functional head *Def* which, I claim, has a presuppositional force. Finally, in section 4.5 I briefly discuss indefinites and conclude that they too seem to allow two sources of adjectival modification.

4.2 Semantic and pragmatic properties

The most obvious difference between monodefinitive and polydefinite constructions is the occurrence of multiple definite articles in the latter. However, as Kolliakou (2004) mentions, the two constructions are semantically similar, since the additional definite articles do not contribute anything to the semantics. The definite article is only interpreted once in both constructions.

On the other hand, the two constructions differ pragmatically. Kolliakou (2004) was the first to notice that polydefinites do not freely alternate with monodefinites and that they tend to appear in contexts where familiarity or presupposition is relevant. Consider example (7), where A asks B what she did the previous day, without A having any previous knowledge of what B's plans were for that day. Kolliakou argues that a polydefinite is infelicitous (marked as #) in such a context.

- (7) A: What did you do yesterday?
 B: a. *evapsa* to *meyalo* *đomatio*
 painted.1SG the big room
 b. #*evapsa* to *meyalo* to *đomatio*
 painted.1SG the big the room
 c. #*evapsa* to *đomatio* to *meyalo*
 painted.1SG the room the big
 'I painted the big room.'

If, however, the conversation continues and A asks B what Catherine did the previous day, then both the prenominal and postnominal polydefinites in (8) are felicitous, while the monodefinitive is appropriate as long as the adjective is focussed. This is because 'the small room' contrasts with 'the big room' which has already been established in the discourse.

- (8) A: What did Catherine do yesterday?
 B: a. evapse to MIKRO ðomatio
 painted.3SG the small room
 b. evapse to mikro to ðomatio
 painted.3SG the small the room
 c. evapse to ðomatio to mikro
 painted.1SG the room the small
 ‘He painted the SMALL room’

Drawing on the above observations, Kolliakou introduces the *Polydefiniteness Constraint* stated in (9).

- (9) THE POLYDEFINITENESS CONSTRAINT. Greek polydefinites are unambiguously non-monotone anaphoric expressions: the discourse referent Y of a polydefinite is anaphoric to an antecedent discourse referent X, such that $Y \subset X$. (Kolliakou 2004:273, (12))

A consequence of this constraint is that it accounts for the restrictions on the type of adjectives permitted in polydefinite constructions. As Kolliakou mentions, intensional adjectives are not allowed in polydefinites, as they cannot pick out a proper subset. An example of this is given in (10), with the adjective ‘alleged’.

- (10) a. i ipotiθemenes sinantisis me eksojiinus
 the alleged meetings with aliens
 b. *i ipotiθemenes i sinantisis me eksojiinus
 the alleged the meetings with aliens

Something that Kolliakou does not mention, however, is that some speakers accept intensional adjectives in a polydefinite construction if the set that the noun denotes is already established in the discourse. For example, if a set of meetings with aliens is given in the discourse as in (11), then ‘alleged’ could appear in a polydefinite construction. What is important to note, however, is that this is only possible if the adjective appears prenominal. If it appears postnominally as in B’, then the polydefinite construction is unavailable to the nonintersective adjective.⁵

- (11) A: John said that he had met with aliens several times.

⁵Later in the discussion it will be claimed that these are not true polydefinites. As a result, this set of data should not be seen as a problem for Kolliakou’s polydefiniteness constraint.

- B: ke pu akri vos ejinan i ipotiθemenes i sinantisis?
 and where exactly happened the alleged the meetings?
 ‘Where exactly did the alleged meetings take place?’
- B’: *... i sinantisis i ipotiθemenes
 ... the meetings the alleged

Kolliakou points out another distinction between monodefinites and polydefinites. She argues that while monodefinites are ambiguous between restrictive and nonrestrictive readings, polydefinites are strictly restrictive. The examples that Kolliakou (2004:271) provides to demonstrate the restrictive nature of polydefinites are given in (12) and (13). The monodefinitive in (12) has all four readings given in (a)–(d). On the other hand, the polydefinite, according to Kolliakou, only has the two readings where there are necessarily non-young cats in the set of cats, not just young cats.

- (12) o janis taise ta zoa. i mikres Yates itan pinasmenes.
 the John fed the animals. the young cats were hungry.
 ‘John fed the animals. The young cats were hungry.’

Readings:

- a. All the animals John fed were cats, and there were only young cats.
- b. All the animals John fed were cats, but there were young and non-young cats.
- c. John fed cats and non-cats, and all of the cats were young.
- d. John fed cats and non-cats, and there were young and non-young cats.

- (13) o janis taise ta zoa. i mikres i Yates itan pinasmenes.
 the John fed the animals. the young the cats were hungry.
 ‘John fed the animals. The young cats were hungry.’

Readings:

- b. All the animals John fed were cats, but there were young and non-young cats.
- d. John fed cats and non-cats, and there were young and non-young cats.

I would like to claim, however, that the polydefinite can still have the nonrestrictive reading where all the cats are young. While the restrictive reading is indeed more obvious, this is to be expected as the restrictive reading is the more obvious one even in the monodefinitive example. This is a point where we find variation

among speakers.

Manolessou (2000) and Panagiotidis and Marinis (2011) also argue against the restrictive nature of polydefinites and claim that the interpretation of polydefinites is predicative. The examples in (14) are given as evidence of this. The sentence in (14a) does not involve a subset of types of weather, but the adjective simply describes that the weather is cold just as it would in a monodefinitive. Similarly, in (14b) it does not have to be the case that the speaker has a particular set of children in her/his mind from which s/he only picks out the good children. Again, the polydefinitive in this case could alternate with a monodefinitive. For these data we find no variation, as native speakers agree that the polydefinites in these examples can be nonrestrictive.

- (14) a. *vjike ekso ston krio ton kero*
went out in-the cold the weather
'S/he went out in the cold weather.'
- b. *ti θelun ta kala ta peðia?*
what want the good the children
'What do the good children want?'

(Panagiotidis and Marinis 2011:273, (9a) & (9b))

Another property of polydefinites mentioned in Alexiadou and Wilder 1998 is that they disambiguate adjectives that have two meanings. Alexiadou and Wilder give an example with the adjective *ftoxos* 'poor', which is ambiguous between the readings 'impoverished' and 'pitiable' when found in a monodefinitive, as in English. If, on the other hand, *ftoxos* is found in a polydefinitive then it can only have the 'impoverished' meaning as in (15).

- (15) a. *o ftoxos anθropos*
the poor man
'the impoverished/pitiable man'
- b. *o ftoxos o anθropos*
the poor the man
'the impoverished/*pitiable man'

A similar example is found with the adjective 'beautiful'. In (16a) 'beautiful dancer' has two readings, a nonintersective reading and an intersective one. The nonintersective reading is the one where the dancer dances beautifully, and it does not necessarily mean that he is handsome. In the intersective reading the dancer is good looking, and for all we know his dancing skills might be really bad.

In contrast to the monodefinitive, the only available reading for the polydefinitive in (16b) is the intersective one.

- (16) a. i Eva parusiase ton oreo xorefti
 the Eva introduced the beautiful dancer
 ‘Eva introduced the beautiful dancer.’
 (Intersective and nonintersective reading)
- b. i Eva parusiase ton oreo to xorefti
 the Eva introduced the beautiful the dancer
 ‘Eva introduced the beautiful dancer.’
 (Intersective reading)

A final interpretational property of polydefinites, which has not been noticed before, is that polydefinites with collective nouns like ‘couple’ can only be read collectively.⁶ For instance, while ‘beautiful couple’ in a monodefinitive can have both readings given in (17a), the distributive reading is lost with the polydefinitive.

- (17) a. to oreo zevyari
 the beautiful couple
 Reading 1: ‘they are beautiful collectively as a couple’
 Reading 2: ‘the two people are beautiful independently’
- b. to oreo to zevyari
 the beautiful the couple
 Reading 1: ‘they are beautiful collectively as a couple’
 *Reading 2: ‘the two people are beautiful independently’

The conclusion drawn from the present discussion is that there are interpretive differences between monodefinites and polydefinites. One of these differences is that polydefinites are sensitive to presupposition/familiarity constraints, something that does not apply to monodefinites. In addition, adjectives in polydefinites are unambiguously intersective and can only be read collectively when appearing with collective nouns, while adjectives in monodefinites can be ambiguous between an intersective and a nonintersective reading, and have both a collective and distributive reading with collective nouns. As for the restrictive nature of polydefinites, it appears that polydefinites do indeed give rise to restrictive readings more often than monodefinites do, but this does not imply that they are obligatorily restrictive. Rather, it is possible that restrictiveness is

⁶I am indebted to Sarah Ouwya for bringing up the question of whether the two constructions give rise to different readings with collective nouns.

the outcome of other factors. For example, given that polydefinites tend to be presuppositional it follows that the adjective in a polydefinite will often restrict a set that is already established in the discourse. This, however, does not mean that the polydefinite will always be the proper subset of the previously mentioned set as claimed by Kolliakou (2004).

The above conclusions on polydefinites are in line with Cinque's (2010) observations for the properties of postnominal adjectives in Germanic, which were discussed in chapter 2. As we saw in that chapter, Cinque argues that adjectives appearing after the noun in Germanic are always predicative, intersective, unambiguous and have a restrictive reading. On the other hand, the picture for prenominal adjectives in Germanic is more blurred; they have intersective or non-intersective readings, they are either restrictive or nonrestrictive, predicative or nonpredicative and their meaning can be ambiguous. Cinque accounts for these interpretive possibilities by proposing that postnominal adjectives in Germanic are always derived from a reduced relative clause, while prenominal adjectives are either merged in the Specs of dedicated functional projections or are again derived from a reduced relative clause. In section 4.4 I build on this analysis to account for the interpretive constraints observed with polydefinites. Before moving on to that, I will first present some of the previous analyses of polydefinites in the next section.

4.3 Previous analyses

The analyses of polydefinites presented in the first part of this section are based on the idea that polydefinites and monodefinites are derived in distinct structures. In particular, they argue that polydefinites have a predicative source. The analyses in subsection 4.3.2, on the other hand, argue against the predicative source, and do not assume an alternative source of modification for polydefinites. The basic idea is that both polydefinites and monodefinites have a similar structure.

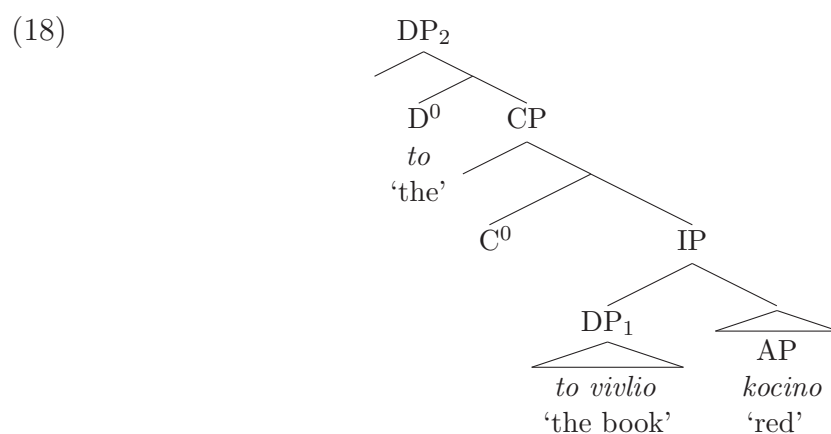
4.3.1 Predicative analyses

4.3.1.1 Alexiadou and Wilder 1998, Alexiadou 2003

Alexiadou and Wilder (1998) suggest that polydefinites involve a different DP structure from monodefinites. In monodefinitive constructions, they suggest that the APs either adjoin to the NP or they merge in the Specs of dedicated FPs

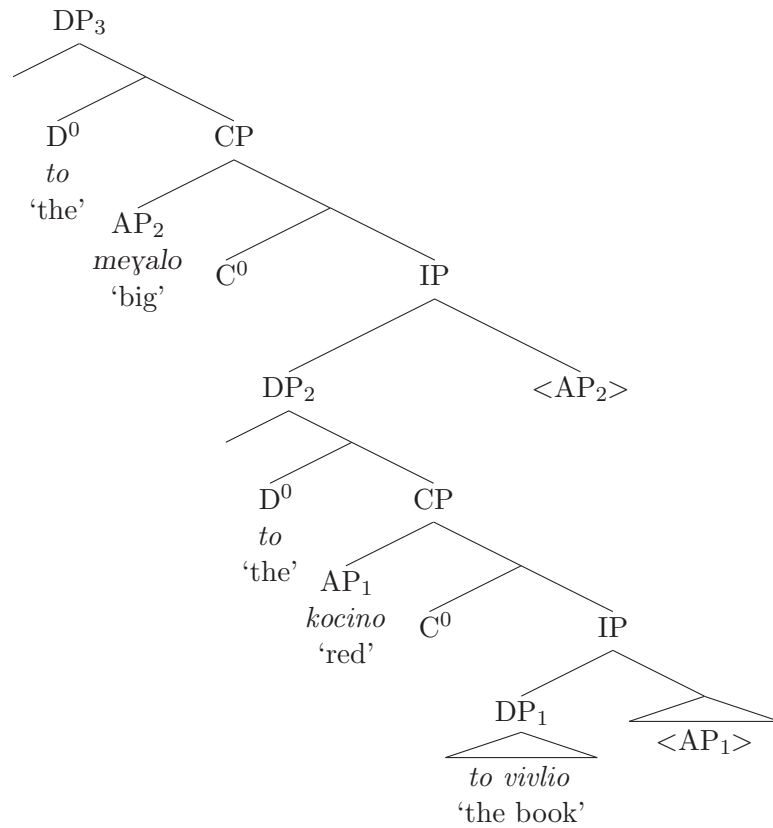
above the NP. As for polydefinites, they observe that only predicative adjectives can enter this construction and they, therefore, conclude that the structure needs to reflect this.

In order to account for the predicative nature of polydefinites, Alexiadou and Wilder adopt a reduced relative structure along the lines of Kayne (1994) who analyses adjectives as reduced relatives (see section 2.3.1, chapter 2). In contrast to Kayne's analysis, however, Alexiadou and Wilder assume that in Greek only polydefinites are derived in a reduced relative structure, which is why they are necessarily predicative. The base structure they propose is given in (18), where the AP is a predicate heading a clausal complement of the D⁰ head. The nominal, in this case 'the book', is the subject of the clause and is thus found in Spec,IP.



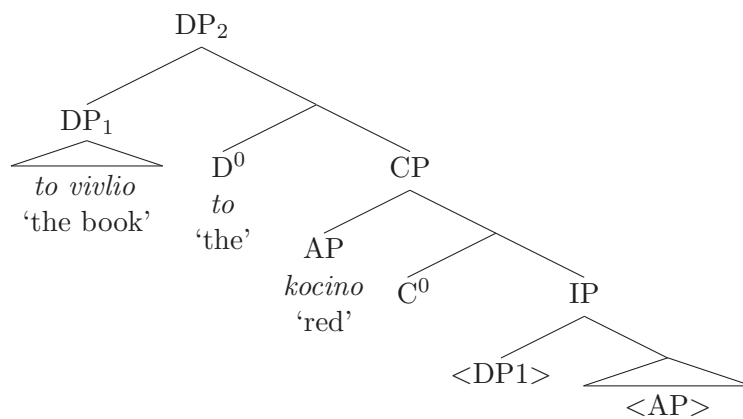
Alexiadou and Wilder claim that there is obligatory predicate raising of each AP to Spec,CP as shown below in (19). This obligatory raising is, according to Kayne (1994), responsible for deriving prenominal APs in English and, under the present analysis, prenominal APs in Greek polydefinites.

(19)



An additional assumption that Alexiadou and Wilder make is that the subject DP, which is found in Spec,IP, has the option to move higher to the Spec of the superordinate DP as in (20). This optional step is what derives postnominal APs in polydefinites.

(20)



This movement is also responsible for the freedom that is observed in the order of polydefinites. In (21) we see how all attested orders between two adjectives and a noun are derived, by employing the obligatory and optional movements mentioned above.

- (21) a. [DP₃ the big [DP₂ the red [DP₁ the book]]]
 b. [DP₃ the big [DP₂ [DP₁ the book] the red <DP₁>]]
 c. [DP₃ [DP₂ the red [DP₁ the book]] the big <DP₂>]
 d. [DP₃ [DP₂ [DP₁ the book] the red <DP₁>] the big <DP₂>]
 e. [DP₃ [DP₁ the book] the big [DP₂ <DP₁> the red <DP₁>]]

According to Alexiadou and Wilder, the sixth possible order *to kocino to mevalo to vivlio* ‘the red the big the book’ is only grammatical with a marked reading, where ‘red’ is more salient than ‘big’. If the base structure is the one given in (21a), then it is obvious that none of the movements described above suffices to derive this order. This particular order is possible only if ‘red’ is base generated higher than ‘big’. Alexiadou and Wilder (1998:323) claim that there is nothing syntactic that blocks ‘red’ from merging higher than ‘big’, considering that both adjectives “begin from the same Numeration” and “their derivations are equally costly”.⁷ Rather, it appears that it is some interpretational principle that determines which adjective is merged first. While the canonical order is the one in (21a), where ‘big’ takes scope over ‘red’ in line with the cognitive hierarchy put forward by Sproat and Shih (1988), the reverse order is preferred in contexts where a set of big books is already established in the discourse (Alexiadou and Wilder 1998:323).

The proposal that polydefinites have a distinct syntactic structure from monodefinites, captures several of the interpretational differences observed between the two. Firstly, if adjectives in polydefinites are merged in a reduced relative clause it follows that they will be unambiguous, as adjectives merged inside a relative lose their ambiguity. Moreover, the loss of the ‘components of’ reading with collective nouns is also predicted as the only available reading of adjectives found in a relative clause is the collective one. Supporting evidence for both of these points is provided in (22).

- (22) a. o fititis pu ine ftochos
 the student who is poor
 ‘impoverished’/*‘pitiable’

⁷If we follow Cinque 2010 then we expect that the ordering of adjectives in polydefinites is free, since they are indirect modifiers. In Cinque’s analysis, therefore, it is indeed possible to merge the reduced relative in which ‘red’ is generated higher than the reduced relative which accommodates ‘big’. See discussion in chapter 3 about the distinction between direct vs. indirect modification.

- b. to zevyari pu ine oreo
 the couple that is beautiful
 ‘beautiful as a couple’/*‘beautiful independently’

An issue with this analysis, however, which Campos and Stavrou (2004) and Panagiotidis and Marinis (2011) raise, is that it requires movement operations that are not motivated. This is based on the fact that the optional movement of the DP is motivated only by the need to derive the correct word order. In addition, they point out that under this analysis, the default order is D-A-D-N, but there is no evidence to suggest that this should be the case.⁸

With regard to the multiple instantiations of the definite article in polydefinites, this is accounted for by the assumption that the nominal in the reduced relative is a DP in the case of Greek, and not an NP as in Kayne’s original analysis. Given that each adjective requires its own determiner (Kayne 1994) and the Greek subject is a DP, it follows that an additional determiner will be present in polydefinites. As was already mentioned in the previous section, however, the multiple occurrences of the definite article are semantically vacuous. Lekakou and Szendrői (2012) indicate that Alexiadou and Wilder’s analysis does not make any clear assumptions about which determiner in the polydefinite structure is the one that contributes definiteness semantically and which determiners are vacuous.

Alexiadou (2003) investigates in more detail which adjectives enter the relative structure that was proposed in Alexiadou and Wilder 1998, and examines some issues considering the behaviour of Greek polydefinites that were not considered in the Alexiadou and Wilder analysis.⁹ Following Manolesou (2000), Alexiadou points out that not all predicative adjectives can appear in a polydefinite construction. For instance, numerals and subjective adjectives which are possible in a predicative position as witnessed in the (b) examples of (23) and (24), are ungrammatical in a polydefinite construction:^{10,11}

⁸In fact, Manolesou (2000) shows that only the order D-N-D-A was available in Ancient and New Testament Greek.

⁹Alexiadou also looks at polydefinites found in other languages and compares them to Greek. Her conclusion is that polydefinites found in Scandinavian, Albanian, Hebrew and Romance are the outcome of morphological processes, while Greek polydefinites are the result of syntactic constraints. For this reason, I will not be concerned with any of that data.

¹⁰What Alexiadou refers to as subjective comment adjectives are typically Quality adjectives, such as *wonderful* and *brutal*.

¹¹The judgements are Manolesou’s and Alexiadou’s.

- (23) a. *i somatofilakes i tris
the musketeers the three
‘the three musketeers’
b. i somatofilakes itan tris
the musketeers were three
‘There were three musketeers’
- (24) a. *i jiyandiea i gafa
the gigantic the blunder
‘the gigantic blunder’
b. i gafa itan jiyandiea
the blunder was gigantic
‘The blunder was gigantic’

According to Alexiadou, the ungrammaticality of the above phrases suggests that only lower ranked predicative adjectives enter the reduced relative structure. Specifically, the adjective classes that Alexiadou assumes are allowed in polydefinites are the ones found lower than Quality in the adjective hierarchy. The reason we find this restriction is because higher ranked modifiers, such as numerals and subjective adjectives, as well as nonintersective, nonpredicative, thematic and quantificational adjectives, block the reading associated with polydefinites, where the polydefinite is the proper subset of a previously introduced set. Alexiadou thus concludes that the predicative source of adjectives is not available to adjectives that are found high in the hierarchical order of modifiers, even if they are predicative, which is why they are excluded from polydefinites.

While speakers share the judgements for (23a), they seem to generally accept numerals when these are found prenominal, something that Alexiadou does not point out. Related to this point, however, Alexiadou mentions that the (a) examples in (23) and (24) can become acceptable if an appropriate context is created, where the polydefinite picks out a proper subset of an established set. The example in (25) shows that quality adjectives like ‘clever’ and ‘handsome’ are indeed acceptable in polydefinites given the right context. It should be noted that both the prenominal and postnominal positions of subjective adjectives in polydefinites are acceptable, in contrast to numerals.

- (25) xtes ynorisa ðio epistimones. me [ton eksipno ton epistimona]
yesterday met.1SG two scientists. with the clever the scientist
milisame ja to somatiðio Higgs, ke me [ton omorfo ton
talked.1PL for the particle Higgs, and with the handsome the

epistimona] xorepsame.
 scientist danced.1PL
 ‘I met two scientists yesterday. I talked about the Higgs particle with
 the clever scientist, and I danced with the handsome scientist.’

Alexiadou also identifies a correlation between the classes of adjectives that appear in polydefinites in Greek and the adjectives that appear postnominally in Romance languages; if a specific type of adjective appears postnominally in Romance then it can appear in Greek polydefinites and vice versa. For example, colour adjectives which tend to appear postnominally in Romance are also found in Greek polydefinites:

- (26) *Italian*
- a. la palla rossa
 the ball red
 - b. ?*la rossa palla
 the red ball

- (27) *Greek polydefinites*
- a. i kocini i bala
 the red the ball
 - b. i bala i kocini
 the ball the red

On the other hand, if a specific type of adjective cannot occur in a polydefinite construction in Greek, then that type of adjective has to obligatorily appear prenominally in Romance. This correlation is observed with higher modifiers, for instance, intensional adjectives:

- (28) *Italian*
- a. l' ex presidente
 the former president
 - b. *il presidente ex
 the president former

- (29) *Greek polydefinites*
- a. *o proin o proedros
 the former the president
 - b. *o proedros o proin
 the president the former

Drawing on the above observations, Alexiadou proposes that the types of adjectives which occur postnominally in Romance languages be analysed as reduced relatives similarly to Greek polydefinites, and for the rest to be analysed as APs in Spec,FPs. Alexiadou's conclusion is that both the reduced relative structure and the attributive monodefinitive structure are necessary in order to account for cross-linguistic phenomena on adjectival modification. This, as we saw in previous chapters, is something also observed by Cinque (2010), who provides evidence from Romance and Germanic, but also from other languages like Chinese, Maltese and Croatian for the existence of two separate sources of adjectival modification. In contrast to Alexiadou, however, Cinque claims that postnominal adjectives in Romance are not always derived in a reduced relative clause, and that there are occasions when these are merged in the Specs of dedicated FPs. Nevertheless, both Alexiadou and Cinque agree that prenominal adjectives in Romance are always merged in the Spec,FP position.

A drawback of the reduced relative clause analysis is that it cannot account for the instances where some speakers accept nonpredicative adjectives in polydefinites, when contextually forced. An adjective like 'previous', which as seen in (30a) is nonpredicative, is able to enter a polydefinite construction if a set of presidents is already established in the discourse. If we compare (30b) to (30c), however, we observe that, as with numerals, the nonpredicative adjective has to appear in a prenominal position. This distinction between the prenominal and the postnominal position has not, to the best of my knowledge, been mentioned before.

- (30) a. *o proeđros itan proiyumenos
 the president was previous
 b. o proiyumenos o proeđros
 the previous the president
 c. *o proeđros o proiyumenos
 the president the previous

Velegrakis (2011) argues that the reduced relative analysis also fails to capture the possibility of splitting the polydefinite as in (31). What this sentence is meant to reveal is that the determiner and the adjective need to form a constituent. Under the reduced relative analysis D and A do not form a constituent, since the AP is found inside a clause which is the complement of D. Nevertheless, Alexiadou and Wilder could postulate further movement operations in order to derive this. The DP 'the watch' would first move out of the high DP, and then there would

be subsequent movement of the latter DP to a Focus position.

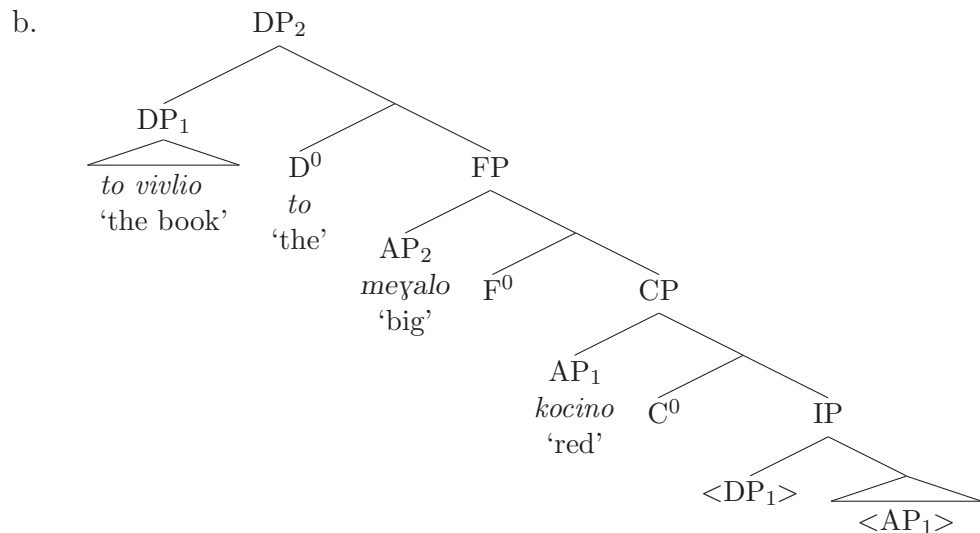
- (31) to CHRISSE thelo to roloi
 the golden want.1SG the watch
 ‘It is the golden watch that I want’. (Velegarakis 2011:61, (47))

Velegarakis also points out that if polydefinites do indeed involve a reduced relative clause, then it is surprising that adverbials cannot be present. He provides an example with a temporal adverbial as an argument for this:

- (32) *to mikro perisi to trapezi
 the small last-year the table (Velegarakis 2011:61, (48))

Another problem with Alexiadou and Wilder’s analysis, which Velegarakis does not point out, is that it assumes a fully fledged DP and, as a result, it overgenerates. Under this analysis it is possible to find both sources of adjectives within the same DP. As demonstrated in (33b), nothing blocks an AP, in this case ‘big’, from merging in the Spec of an FP above the CP. This structure, however, derives the ungrammatical phrase in (33a).

- (33) a. *to vivlio to mevalo kocino
 the book the big red



Following the same reasoning, there is also nothing to prohibit numerals from appearing between D⁰ and CP, or inside the subject DP which is merged in Spec,IP. In examples (34) to (37), however, we see that all the examples in (a) are ungrammatical, even though it is possible to derive them in the Alexiadou and Wilder structure as witnessed in the (b) examples.

- (34) a. *ta tria mavra ta aftocinita
the three black the cars
b. [DP₂ the three black [DP₁ the cars]]]
- (35) a. *ta aftocinita ta tria mavra
the cars the three black
b. [DP₂ [DP₁ the cars] the three black <DP₁>]]
- (36) a. ??ta tria aftocinita ta mavra
the three cars the black
b. [DP₂ [DP₁ the three cars] the black <DP₁>]]
- (37) a. *ta mavra ta tria aftocinita
the black the three cars
b. [DP₂ the black [DP₁ the three cars]]]

Finally, Alexiadou and Wilder’s analysis cannot account for the unavailability of coordinated adjectives in polydefinites. While coordination of two adjectives is possible in the monodefinitive structure in (38a), this is disallowed in the polydefinite construction in (38b). The ungrammaticality of (38b) is not predicted under this analysis.

- (38) a. to mikro ce ftino đomatio
the small and cheap room
b. *to mikro ce ftino to đomatio
the small and cheap the room
‘the small and cheap room’

To summarise, we have seen that Alexiadou and Wilder’s analysis captures the predicative nature of polydefinites, as well as the interpretive differences between monodefinites and polydefinites by proposing that the two involve distinct structures. It, nevertheless, faces several problems, the most serious being overgeneration.

4.3.1.2 Campos and Stavrou 2004

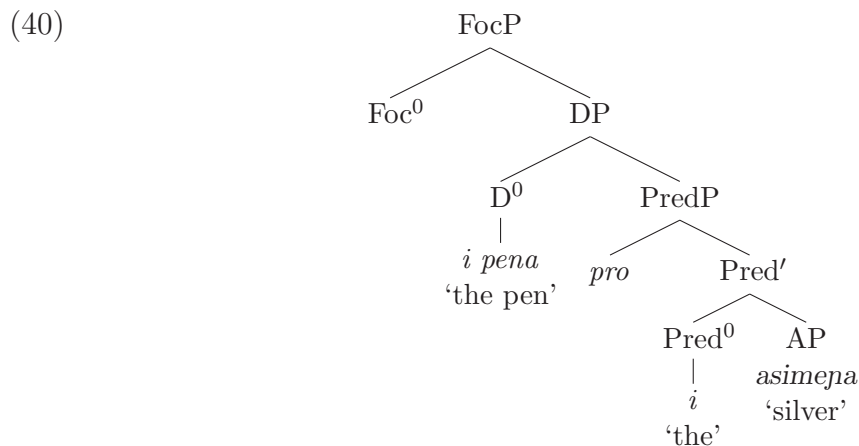
Campos and Stavrou (2004) provide a unified account of polydefinites in both Greek and Aromanian, a Balkan Roman language. Crucially, they argue that only one definite adjective can appear in a polydefinite construction and that any additional adjectives are instances of *parallel* modification as defined by Sproat and Shih (1991:578–579). As was discussed in section 3.2 of chapter 3, the claim is

that adjectives in parallel modification modify the noun in a separate phonological and syntactic phrase, and do not follow the fixed order that is observed cross-linguistically.

Campos and Stavrou analyse polydefinites with a single adjective in a predicative structure, which involves the functional category PredP. The fact that adjectives are unambiguous and only come with a single reading with collective nouns, follows directly from the assumption that polydefinites have a predicative source. What we see below is that only one reading is available when the adjective is found in a postcopular position:

- (39) a. o fititis ine ftochos
 the student is poor
 ‘impoverished’/*‘pitiable’
- b. to zevyari ine oreo
 the couple is beautiful
 ‘beautiful as a couple’/*‘beautiful independently’

The base structure Campos and Stavrou propose is given in (40).



Campos and Stavrou assume that the second definite article, which is found with the adjective, is the realisation of the predication operator and is, therefore, merged under Pred⁰. The subject of Pred⁰ is a silent pronoun, which can be optionally spelled out as the anaphoric demonstrative *afto* ‘this’, and the complement of Pred⁰ is the AP.¹²

¹²The same demonstrative can be deictic when it is pronominal, but must be anaphoric when postnominal. This is illustrated in the examples below, taken from Campos and Stavrou (2004:159, (42)):

- (41) a. afto (eđo) to vivlio
 this here the book

As witnessed in the structure in (40), Campos and Stavrou consider the definite article and the noun in polydefinites to be a complex head, under D^0 . Their motivation for analysing D+N as a complex head is twofold: a) in Balkan languages N+D seems to form a word, and b) nothing seems to be able to intervene between D+N in Greek polydefinites. Nevertheless, the judgements that Campos and Stavrou give in favour of the second motivation are not shared across Greek speakers. The first piece of evidence they provide comes from the fact that the noun in polydefinites cannot be preceded by a numeral or a quantifier:

- (42) *ta tria/pola aftocinita ta mavra
 the three/many cars the black
 ‘the three/many black cars’

This judgement is shared across native speakers. The controversy, however, occurs when the same claim is extended to include adjectives. Campos and Stavrou state that adjectives, just like numerals, are forbidden from appearing between the definite article and the noun, but most speakers find the phrase in (43) acceptable.¹³

- (43) to oreo aftocinito to mavro
 the nice car the black
 ‘the nice black car’

Given the grammaticality of the above phrase, it is reasonable to conclude that the definite article and the noun do not form a complex head, even if there is variation among speakers. Another argument against the complex head D+N is the fact that it is possible to find a genitive with the noun in a polydefinite. Under this analysis we expect that the sequence D+N+genitive would be ungrammatical as it is not clear where the genitive would be merged. However, as is evident from the example below, this sequence is grammatical:

-
- b. to vivlio afto (??eđo)
 the book this here
 ‘this book here’

¹³Another example of this was given in (6b) and (6c), repeated below:

- (6) b. to mevalo [to strojilo (prasino) trapezi]
 the big the round green table
 c. [to strojilo (prasino) trapezi] to mevalo
 the round green table the big

- (44) to aftocinito tis xristinas to kokino
 the.NOM car.NOM the.GEN Christina.GEN the.NOM red.NOM
 ‘Christina’s red car’

So far we have only seen how polydefinites with postnominal adjectives are derived. In order to derive polydefinites with prenominal adjectives, Campos and Stavrou propose that A^0 moves to $Pred^0$, picks up the definite article, and then there is subsequent head movement of $Pred+A$ to a Focus head above the DP. Building on this point, the authors suggest that the reason polydefinites with prenominal adjectives are unavailable to Aromanian or Ancient Greek might be because a Focus position is not available to these languages.

Be that as it may, implementing movement of the adjective to a Focus position has unwelcome results. It predicts that prenominal adjectives are necessarily focussed, something that is not borne out. Consider the examples in (45). In all of them we see that there is a polydefinite with a prenominal adjective, that is ‘the chubby the alien’. In the first example, the speaker continues the sentence by adding that aside from kissing the chubby alien, Sarah also kissed the thin alien. In the second example, however, where the only difference from the first example is that ‘chubby’ is intonationally marked, the same continuation of the sentence is infelicitous. An appropriate continuation in this case must be contrastive, as in (45c). Taking into account the fact that focus in Greek is marked by stress, it becomes obvious that if the prenominal adjective in the polydefinite in (45a) was focussed as it is in (45b), then it would also require a contrastive continuation.

- (45) a. i Sara filise ton paxulo ton eksojiino, kaθos ke ton
 the Sarah kissed.3SG the chubby the alien, while and the
 lepto
 thin
 ‘Sarah kissed the chubby alien, as well as the thin one.’
- b. i Sara filise ton PAXULO ton eksojiino, #kaθos ke ton
 the Sarah kissed.3SG the chubby the alien, while and the
 lepto
 thin
 ‘Sarah kissed the CHUBBY alien, #as well as the thin one.’
- c. i Sara filise ton PAXULO ton eksojiino, oçi ton lepto
 the Sarah kissed.3SG the chubby the alien, NEG the thin
 ‘Sarah kissed the CHUBBY alien, not the thin one.’

The proposal that the prenominal order is derived via head movement is also

problematic for this analysis. Campos and Stavrou claim that only postnominal adjectives in polydefinites can be modified or take a complement as the examples in (46) and (47) indicate. Drawing from these data, they conclude that prenominal adjectives in polydefinites must be heads.

- (46) a. *to toso/poli/pjo oreo to vivlio
 the so/very/more nice the book
 b. to vivlio to toso/poli/pjo oreo
 the book the so/very/more nice
 ‘the very nice/nicer book’

(Campos and Stavrou 2004:140, (7) & fn. 2)

- (47) a. *i perifani ja ta peđia tis i mana
 the proud of the children her the mother
 b. i mana i perifani ja ta peđia tis
 the mother the proud of the children her
 ‘the mother proud of her son’

(Campos and Stavrou 2004:140, (8) & fn. 3)

However, the judgements in (46a) and (47a) are again not shared by other Greek speakers, a point that is also brought up by Panagiotidis and Marinis (2011). For many speakers, the prenominal adjective can be modified and it can also appear with a complement, which suggests that the prenominal adjective is not a head, but an AP.

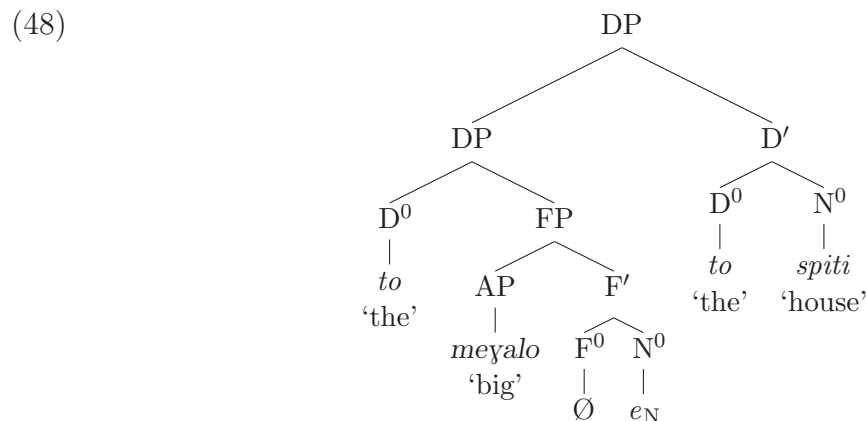
Finally, Campos and Stavrou’s analysis does not make any predictions about where numerals or nonpredicative adjectives are merged in the instances where speakers accept them in prenominal polydefinites. A way forward would be to propose that, at least numerals, which are predicative, are the complement of Pred⁰ when the context permits this. If this was the case, however, we would expect that numerals would be free to appear either prenominally or postnominally in polydefinites. Yet, as was already mentioned, numerals are only allowed prenominally when they appear in a polydefinite.

Even if there is a way to derive numerals in polydefinites, the presence of non-predicative adjectives still remains a puzzle, as the Campos and Stavrou analysis only allows predicative modifiers to enter PredP.

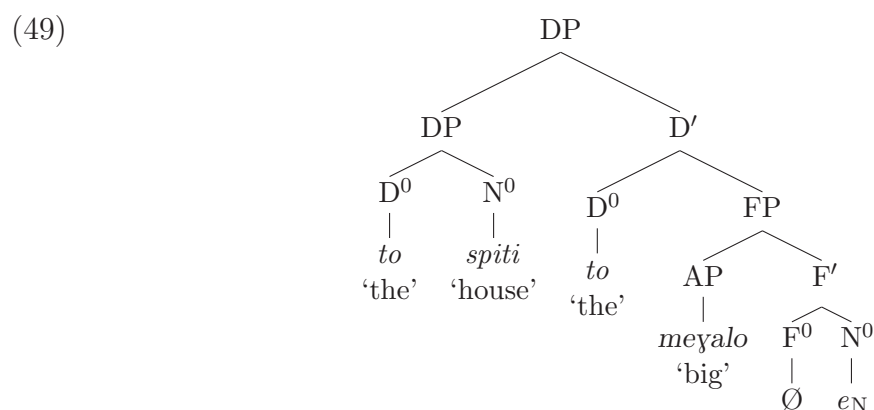
4.3.1.3 Panagiotidis and Marinis 2011

Panagiotidis and Marinis (2011) analyse polydefinites in a DP-predication struc-

ture. They assume that the adjective and the definite article that precedes it are part of a DP with a null noun. When the adjective is prenominal, the elliptical DP is the subject, while the noun and its article are the predicate, as schematised in (48). The meaning linked to this structure is ‘the big one which is the house’.



In the instances where the adjective is found postnominally the order is again base generated, but this time it is the DP which contains the noun that is the subject. The corresponding meaning for the structure in (49) is ‘the house which is the big one’.



The predication operator in these structures is the D⁰ head of the top DP. This entails that the D⁰ in polydefinites has different properties from the D⁰ in monodefinites. Panagiotidis and Marinis propose that the D⁰ in monodefinites can only be referential and its specifier is an A'-position. On the other hand, the D⁰ in polydefinites is both referential and predicative and its specifier is an A-position, as it hosts the subject of predication.

A question that arises from this analysis is why Panagiotidis and Marinis do not adopt a reduced relative structure, if, as Alexiadou and Wilder (1998), their main purpose is to account for the predicative nature of polydefinites. Their

argument against adopting such an analysis is that while the D-A constituent can stand as an elliptical DP in predicative environments with a copula, it cannot do so within a relative clause. This is illustrated in the example below, taken from Panagiotidis and Marinis (2011:280–281, (16)):

- (50) Context: The personnel of an institute consists of researchers (*erevnites*) and teaching staff. In this particular institute some of the personnel are competent and some are incompetent. A number of people have just left the institute and someone comments:
- a. i erevnites i ikani efiyan *Polydefinite*
the researchers the competent left
 - b. i erevnites pu itan (??i) ikani efiyan *Relative clause*
the researchers that were the competent left
'The researchers who were the competent ones left.'
 - c. i erevnites itan i ikani e *With copula*
the researchers were the competent
'The researchers were the competent ones.'

If Greek polydefinites are indeed derived in a relative clause, then it is unclear why the presence of the definite article in front of the adjective results in unacceptability in (50b).

Concerning the semantics of polydefinites, Panagiotidis and Marinis argue that their interpretation is predicative and intersective. As for the restrictive interpretation which is often associated with polydefinites, they claim that it is actually derived from the predication relation. Under their analysis a polydefinite is interpreted as the intersection of two or more sets, depending on the number of adjectives in the structure. As a result, it could sometimes be the case that one of the sets is the proper subset of the other one.

Another point that Panagiotidis and Marinis bring up is that while (51a) is unacceptable, there is nothing in their analysis to prevent indefinites from appearing as subjects. The reason this is ungrammatical, they claim, is due to the fact that Greek forbids bare plurals from appearing as subjects of sentences and small clauses. This is seen in (51b) and (51c) respectively, where both a generic subject and the subject of a small clause require a definite article.

- (51) a. *ena paputsi to mevalo
one shoe the big

- b. *(i) karxaries ine epikinđini
 the sharks are dangerous
 ‘Sharks are dangerous’
- c. θ eoro *(to) γ rapsimo vareto
 consider.1SG the writing boring
 ‘I consider writing boring.’

Some of the criticisms for Alexiadou and Wilder’s analysis, also hold for Panagiotidis and Marinis’s analysis. Firstly, it cannot account for the instances where a nonpredicative adjective enters a polydefinite as in *o proiyumenos o proeđros* ‘the previous the president’. Moreover, it assumes that the adjective and its definite article are merged inside a fully fledged DP, which predicts that it should be possible to find another modifier in the DP, but as we have seen above in examples (34) and (35), the patterns in (52) are ungrammatical.

- (52) a. *D–Num/A–A–D–N
 b. *D–N–D–Num/A–A

Panagiotidis and Marinis (2011:293–94), however, argue that ellipsis sufficiently accounts for the unavailability of the above sequences. The claim is that an elliptical DP is never acceptable when more than one adjective is present, and they state that this is something observed in both Greek and English. Given that in their analysis the sequence D–A is always part of a DP which contains an elided noun (i.e. D–A– e_N), a second adjective will be disallowed from appearing in the same DP. Nevertheless, there seems to be a problem with this presumption. Crucially, Greek speakers seem to agree that the (a) examples in (53) and (54) are acceptable, and English speakers accept the English translations of the same examples. As for the Greek speakers who find the elided examples with two modifiers somewhat degraded, they note that there is a strong contrast between those examples and polydefinites with two modifiers; while the elided examples are simply dispreferred, the polydefinites in the (b) examples are ungrammatical.

- (53) a.(?) agaliasa tus paxulus prasinus eksojiinus ke i Ruth tus
 hugged.1SG the chubby green aliens and the Ruth the
 leptous mov e
 thin purple
 ‘I hugged the chubby green aliens, and Ruth the thin purple ones.’
- b. *i eksojiini i lepti mov
 the aliens the thin purple
 ‘the thin purple aliens’

- (54) a.(?) *agaliasa tus ðio prasinus eksojiinus ke i Ruth tus tris*
 hugged.1SG the two green aliens and the Ruth the three
mov e
 purple
 ‘I hugged the two green aliens, and Ruth the three purple ones.’
- b. **i eksojiini i tris mov*
 the aliens the three purple
 ‘the three purple aliens’

This shows that the ungrammaticality of the patterns in (52) is not simply the result of ellipsis. As a consequence, Panagiotidis and Marinis’s analysis, as it stands, incorrectly generates the polydefinite patterns in (52). Related to this point is that, as we have seen in (38), which is repeated below, polydefinites do not allow coordination of two adjectives. Again, this is not something that could be explained by employing ellipsis, as coordination survives under ellipsis. This is shown in (55).

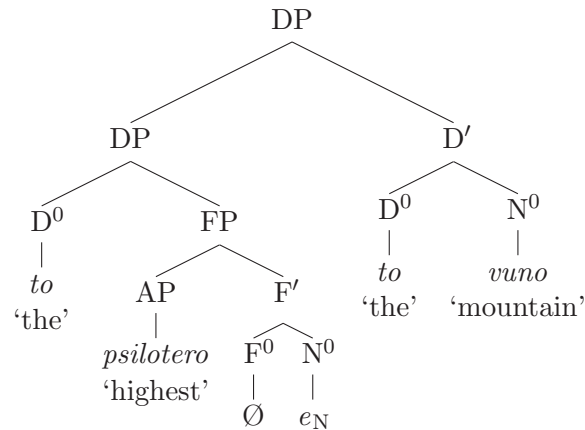
- (38) a. *to mikro ce ftino ðomatio*
 the small and cheap room
- b. **to mikro ce ftino to ðomatio*
 the small and cheap the room
 ‘the small and cheap room’
- (55) *ðialeksa to mikro ce ftino ðomatio eno o Ahmad to meyalo*
 picked.1SG the small and cheap room while the Ahmad the big
ce akrivo
 and expensive
 ‘I picked the small and cheap room, while Ahmad picked the big and expensive one.’

Another problem for this analysis, which again arises from the assumption that adjectives in polydefinites are merged inside a fully fledged DP with an elided noun, is that it incorrectly predicts that superlatives should be allowed in polydefinites. In section 3.5.3 of chapter 3, it was mentioned that Matushansky (2008) analyses superlatives as attributive modifiers. Specifically, Matushansky argues that even in cases where the noun is not phonologically realised, there must be an elided noun in the structure. In other words, the structure Matushansky proposes for superlatives corresponds to Panagiotidis and Marinis’s subordinate DP structure in which adjectives in polydefinites are merged. If Matushansky’s analysis is correct, then the ungrammaticality of (56a) under Panagiotidis and Marinis’s

analysis is unexpected, as it can be derived in their proposed structure:

- (56) a. *to psilotero to vuno ine to Everest
 the highest the mountain is the Everest
 ‘The highest mountain is Everest.’

b.



Finally, the analysis does not make any clear predictions as to which DP is the subject in one case, but the predicate in another. While Panagiotidis and Marinis claim that each order is associated with a different reading, there does not seem to be an obvious interpretive difference between the two orders.

4.3.2 Nonpredicative analyses

4.3.2.1 Lekakou and Szendrői 2007, 2012

Lekakou and Szendrői (2007, 2012) treat polydefinites as instances of close apposition, where two nominals appear side by side, the one restricting the other. Lekakou and Szendrői (2007) show that close appositives differ from loose appositives in several respects. Firstly, close appositives are part of the same intonational phrase, while loose appositives are not. This becomes obvious by the fact that loose appositives can be separated as in (57a), while, as witnessed in (57b), close appositives cannot. The appositives in the following structures are marked with italics.

- (57) a. Loose apposition:
Thalia, that is, *the Muse of comedy*, was the daughter of Mnemosyne.
- b. Close apposition:
 I was referring to *Thalia the Muse of comedy*, not *Thalia* (*that is) *the Grace*.

What is also evident from the above examples, is that in close appositives the referent is picked out by both nominals, while in loose apposition only one of the two constituents picks out the referent, and the other constituent serves as an epexegetis.

In addition to the above differences, close apposition is restricted to a relationship between two nominals, but loose apposition can involve any category. For instance, in (58) the loose appositive involves two verbs.

(58) Ollie *ate*, or rather, *swallowed* his breakfast before he had to rush off.

Lekakou and Szendrői (2012) argue that close appositives and polydefinites share several similarities, the most obvious ones being that in close apposition we also find multiple occurrences of the definite article, and the two nouns can appear in any order:

(59) a. o aetos to puli
 the eagle the bird
 b. to puli o aetos
 the bird the eagle
 ‘the eagle that is a bird’

(Lekakou and Szendrői 2012:110, (6))

Furthermore, in close apposition one of the two parts has to be interpreted restrictively with respect to the other part, as shown in (60).

(60) i thalia i musa, oçi i thalia i xaris
 the Thalia the muse, not the Thalia the grace
 ‘Thalia the Muse, not Thalia the Grace’

Their final point, which is an observation first made by Stavrou (1995), is that it is not possible to find indefinites in close apposition, as it is also impossible to find polyindefinites:

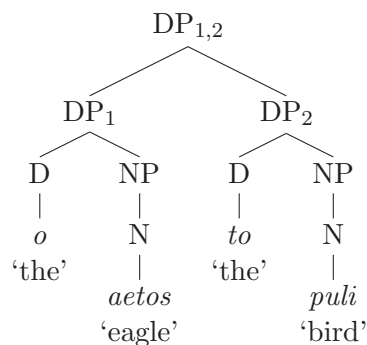
(61) a. *enas aetos (ena) puli
 an eagle a bird
 b. *ena puli (enas) aetos
 a bird an eagle

(Lekakou and Szendrői 2012:110, (8))

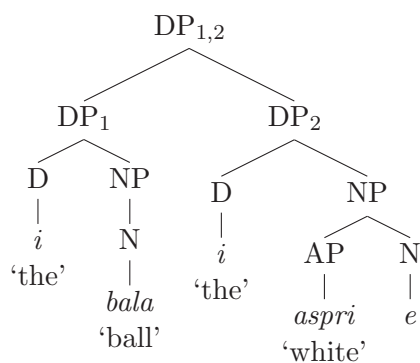
In order to account for the above data, Lekakou and Szendrői propose that poly-

definites and close appositives are derived in the same structure, where two DPs form subparts of another DP. The only difference between the two constructions is that polydefinites also involve noun ellipsis, as in Panagiotidis and Marinis’s (2011) analysis. The structures put forward by Lekakou and Szendrői (2012) are given in (62) and (63).

(62) *Close apposition*



(63) *Polydefinites*



The freedom in the ordering follows straightforwardly from the above structures. Given that the DP subparts enter a symmetric relationship where neither is the head of the construction, any DP can be merged first. With regard to the semantics, both in close apposition and polydefinites the referents are picked out by the intersection of the two subparts. Lekakou and Szendrői, following Williams (1981a, 1989), Higginbotham (1985), Zwarts (1993) and Baker (2005), propose that all nominals come with an external theta role, an R-role. They argue that in the case of close apposition and polydefinites, the R-role of the one DP subpart is identified with the R-role of the other, as schematised below:

$$(64) \quad \begin{array}{c} \text{DP}_{1,2}[\text{R}_1 = \text{R}_2] \\ \swarrow \quad \searrow \\ \text{DP}_1[\text{R}_1] \quad \text{DP}_2[\text{R}_2] \end{array}$$

Nevertheless, for intersection to take place in this structure, the two DP subparts have to denote in type $\langle e, t \rangle$ and not the usual type $\langle e \rangle$. As a result, Lekakou and Szendrői assume that the definite determiner in Greek does not saturate the NP predicate, and that it is the top DP, namely $\text{DP}_{1,2}$, that is of type $\langle e \rangle$. Specifically, they argue that the Greek definite article is semantically expletive, not just in the case of polydefinites or close appositives, but in general. Definiteness, according to their analysis, is interpreted above the DP level at a functional head *Def*, which is occupied by a phonologically null element. Further support for distinguishing between D^0 and Def^0 , comes from the fact that proper names in Greek obligatorily appear with a definite article, even though according to Kripke (1980) proper names are rigid designators (Lekakou and Szendrői 2012:117). The authors conclude that the Greek definite article does not contribute semantically, and that it is the Def^0 head that is associated with the semantics of definiteness.

According to Lekakou and Szendrői one of the benefits of their analysis of polydefinites is that they do not need to make any further assumptions as to why polydefinites are restrictive. Given that one of the two DPs contains noun ellipsis and that any non-elided material must be informative (Williams 1997; Giannakidou and Stavrou 1999), it follows that the non-elided material cannot be nonrestrictive. The example below is given as evidence for this claim (Lekakou and Szendrői 2012:129, (35a)):

- (65) o jannis taise ta mikra zoa. #ta mikra (ta zoa) itan
 the Yannis fed the young animals the young the animals were
 pinasmena.
 hungry
 ‘Yannis fed the young animals. The young ones/animals were hungry.’

Another property of polydefinites which is accounted for by the presence of ellipsis in the structure, is the ungrammaticality of phrases like (66a). Lekakou and Szendrői follow Panagiotidis and Marinis (2011) who, as we have seen, argue that it is impossible for noun ellipsis to take place when more than one adjective is present in a definite construction. As a consequence, the postnominal adjectives need to each come with their own definite article, as in (66b).

- (66) a. *o eksojiinos o paxulos prasinos
 the alien the chubby green
 b. o eksojiinos o paxulos o prasinos
 the alien the chubby the green
 ‘the chubby green alien’

By adopting this position, however, Lekakou and Szendrői run into the same problems as Panagiotidis and Marinis (2011) since noun ellipsis is actually permitted with more than one modifier. Taking into consideration that ellipsis is not responsible for blocking the generation of phrases like the one in (66a) and that polydefinites are analysed in fully fledged DPs, it is unclear how the generation of (66a) is excluded. The same criticisms apply to coordinated APs, which under the present analysis cannot be blocked from polydefinite constructions. Moreover, Lekakou and Szendrői’s analysis, just as Panagiotidis and Marinis’s, incorrectly predicts that superlatives should be allowed in polydefinites.

Lekakou and Szendrői (2012), as well as Velegrakis (2011), who also analyses polydefinites as instances of close apposition, point out that one of the advantages of their analysis is that they do not need to introduce a new syntactic structure to derive polydefinites, as adjectives in both monodefinites and polydefinites are derived under a uniform analysis. Nevertheless, in chapter 2 we saw that the distribution and interpretation of adjectives across languages supports the existence of two sources of adjectival modification. As a result, to assume that polydefinites are syntactically distinct from monodefinites should not be seen as a weakness, as the two sources of modification are independently motivated. In fact, the unavailability of the distributive reading with collective nouns in polydefinites, suggests that adjectives in these constructions involve a distinct merging position from adjectives in monodefinites. Lekakou and Szendrői’s analysis does not make any predictions about this interpretational restriction. We can confirm that this restriction is not a consequence of ellipsis, as both readings survive under it:

- (67) χτες sinantisa to asçimo zevçari ke simera to omorfo e
 yesterday met.1SG the ugly couple and today the beautiful
 ‘I met the ugly couple yesterday and today I met the beautiful one.’
 Reading 1: ‘beautiful collectively as a couple’
 Reading 2: ‘beautiful independently’

A clear advantage of the Lekakou and Szendrői approach, however, is that it can account for the instances where nonintersective or nonpredicative adjectives are

allowed in a polydefinite construction. They claim that these adjectives are allowed to enter the construction as long as there is an appropriate context, where the polydefinite can pick out a proper subset. For example, the nonpredicative adjective ‘previous’ in (68a) can appear in a polydefinite construction when it is used contrastively. This is because the set of prime ministers is already established in the discourse and it is therefore possible to pick a subset from it.

- (68) a. o proiyumenos o proθipuryos peθane (oçi o torinos)
 the previous the prime.minister died not the current
 ‘It is the previous prime minister that died, not the current one.’
 b. *o proθipuryos itan proiyumenos
 the prime.minister was previous

This is an important point for Lekakou and Szendrői’s analysis, as other analyses which derive polydefinites in a predicative structure have difficulties capturing the occasional acceptability of nonpredicative adjectives. As witnessed in (68b), the occurrence of the adjective ‘previous’ in a predicative position results in ungrammaticality, which indicates that (68a) should also be ungrammatical if polydefinites involved a subject–predicate relationship. Be that as it may, Lekakou and Szendrői’s analysis faces a different problem; it strongly relies on the restrictive character of polydefinites, but as was already discussed in section 4.2, polydefinites are not always restrictive. The examples given as evidence of this are repeated below:

- (14) a. vjike ekso ston krio ton kero
 went out in-the cold the weather
 ‘S/he went out in the cold weather.’
 b. ti θelun ta kala ta peðia?
 what want the good the children
 ‘What do the good children want?’

The polydefinite ‘cold weather’ in the first example is not the proper subset of types of weather, but the adjective simply describes the weather, and in the second sentence it is not necessarily the case that there is also a set of children that are not good. While Lekakou and Szendrői (2012:109, fn. 4) mention these examples, they do not address the issue in detail and they simply state that “it remains to be seen how widespread such usage is and what the exact pragmatic status of such cases is”.

Another problem with Lekakou and Szendrői’s analysis stems from the as-

sumption that the two DP subparts in close apposition and polydefinites enter a symmetrical relationship. As Kyriakaki (2011:57) points out, if neither of the two DPs is the head of the construction, then both sentences in (69) should be available, as it would be possible for the adjective ‘huge’ to agree in gender with either of the two DPs. The examples, however, show that the adjective ‘huge’ can only agree with ‘the whale’ and not ‘the mammal’.

- (69) a. i falena to θilastiko ine terastia
 the.F whale.F the.N mammal.N is.3SG huge.F
 b. *i falena to θilastiko ine terastio
 the.F whale.F the.N mammal.N is.3SG huge.N
 ‘The mammal whale is huge’

(Kyriakaki 2011:57, (64))

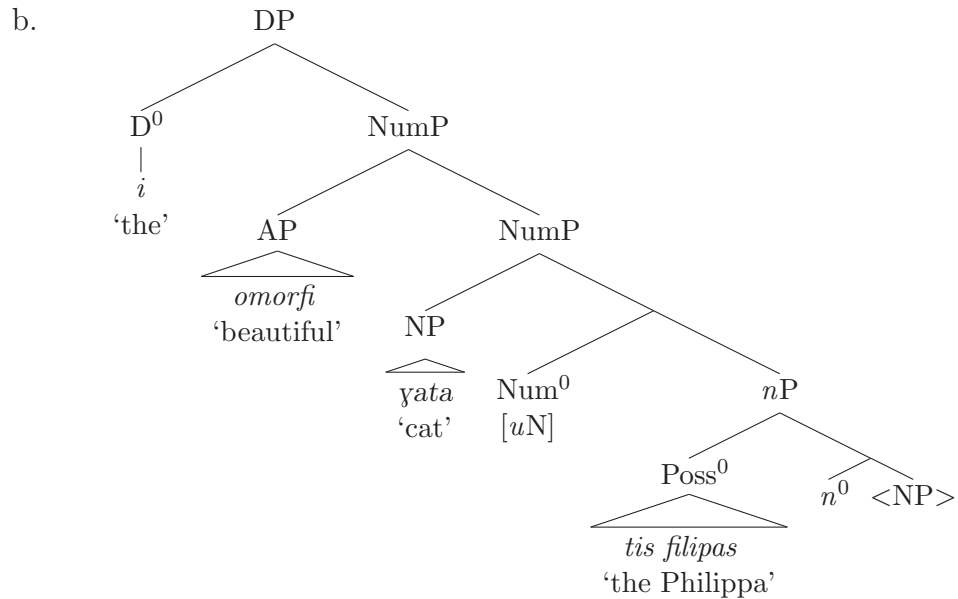
In addition to what Kyriakaki observes, it appears that if ‘the mammal’ surfaces before ‘the whale’, the adjective will have to agree with ‘the mammal’ as indicated in (70). Given these data, we can conclude that the two nominals are in fact in an asymmetrical relationship, where the first nominal is the head of the construction.

- (70) a. to θilastiko i falena ine terastio
 the.N mammal.N the.F whale.F is.3SG huge.N
 b. *to θilastiko i falena ine terastia
 the.N mammal.N the.F whale.F is.3SG huge.F
 ‘The mammal whale is huge’

4.3.2.2 Kyriakaki 2011

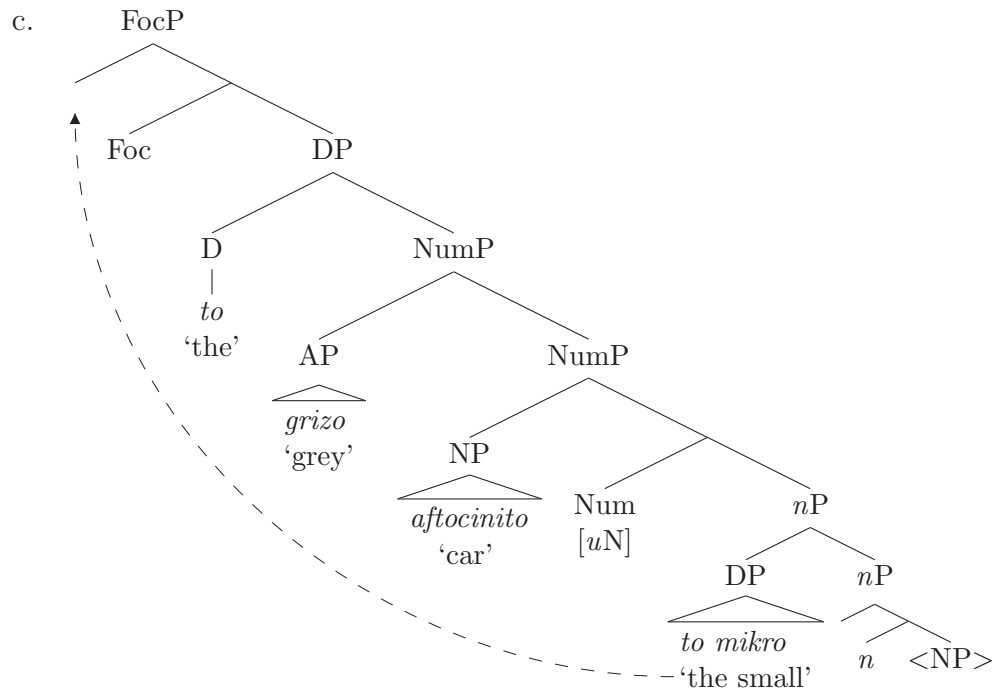
Kyriakaki (2011) assumes that monodefinitive modifiers and polydefinitive modifiers are merged in the same structure, but in different syntactic positions. In monodefinites, the adjectives are adjoined to NumP as I demonstrate in (71). Kyriakaki claims that the NP in Greek will always move to Spec,NumP to check a strong uninterpretable feature [N] on Num. This, she argues, is why possessors are found postnominally in Greek; under her analysis, the possessor is merged in Spec,*n*P, which is found lower than NumP.

- (71) *Monodefinites*
 a. i omorfi yata tis filipas
 the beautiful cat the.GEN Philippa.GEN
 ‘Philippa’s beautiful cat’



As for polydefinite modifiers, Kyriakaki treats them similarly to monodefinitive modifiers, in the sense that she considers them to be adjuncts. In order to account for their restrictive nature, however, she claims that modifiers in polydefinites are merged lower. She bases this claim on standard analyses of restrictive relative clauses, where the restrictive relative is adjoined to NP (Chomsky 1977, Jackendoff 1977). Kyriakaki, therefore, assumes that polydefinite modifiers are adjuncts of *nP*. Given that the NP will always move higher, to Spec,NumP, it follows that the polydefinite modifiers will be postnominal as shown in (72). If the polydefinite modifier is prenominal, then Kyriakaki claims that it must be focussed, either informationally or contrastively (Kyriakaki 2011:62), and consequently it will move to Spec,FocP. This analysis also captures the possibility of having both a monodefinitive and a polydefinite in the same structure, as the examples in (72) demonstrate. The optionality of the polydefinite modifier to move to Spec,FocP is marked with a dashed arrow:

- (72) a. [to grizo aftocinito] to mikro
 the grey car the small
 b. to mikro [to grizo aftocinito]
 the small the grey car
 'the small grey cat'



For the instances where two or more modifiers are found in a polydefinite construction, Kyriakaki predicts that they all adjoin to *nP* and that they can be fronted in a similar manner as multiple *wh*-elements.

A question that remains unanswered at this point is what kind of phrase hosts the polydefinite modifier. In the tree above, it is evident that Kyriakaki considers the modifier to be part of a DP, which accounts for the presence of the additional definite article. However, she observes that these DPs that host the polydefinite modifiers seem to be ‘small’, in the sense that they only allow a definite article, an adjective and possibly an empty noun, as in Lekakou and Szendrői (2012) and Panagiotidis and Marinis (2011). The presence of additional elements in the phrase, like adjectives or adverbs, results to ungrammaticality:

- (73) a. *to kenurjo kokino to podilato
 the new red the bicycle
 ‘the new red bicycle’
 b. *to pjo/poli kokino to pođilato
 the most/very red the bicycle
 ‘the most/red bicycle’

(Kyriakaki 2011:112, (131))

Kyriakaki provides an alternative to the noun ellipsis analysis of polydefinites and claims that adjectives in these constructions might be nominalised. The proposal is that adjectives in polydefinites are bare roots that merge with *n*. This gives rise

to the DP structure in (74), where NumP is not part of the DP. Given that NumP is absent, it follows that any additional modifiers will also be absent (Kyriakaki 2011:122).



In order to rule out nonintersective adjectives from appearing in polydefinites, Kyriakaki proposes that these can only merge with *a*, while intersective adjectives have the option of merging with either *a* or *n*. Kyriakaki claims that if an adjective merges with *a* then the AP will have to be adjoined to NumP, while if it merges with *n*, it will be a nominalised adjective which is merged inside a small DP that adjoins to *nP*.

Kyriakaki's analysis faces a similar problem to Campos and Stavrou's analysis, namely that there are speakers who consider (73b), where the polydefinite adjective is modified by an adverb, grammatical. In addition, if the adjective is nominalised, then it is not clear how the acceptability of (47a), repeated below, arises.¹⁴ Both of these points suggest that the adjective is not nominalised, but rather that it is an AP as it is possible for the adjective to be modified by a degree word, and to also have a complement.

- (47) a. i perifani ja ta peðia tis i mana
 the proud of the children her the mother
- b. i mana i perifani ja ta peðia tis
 the mother the proud of the children her
 'the mother proud of her son'

As already mentioned, there are Greek speakers who also accept nonintersective adjectives in polydefinites. This is another fact that this analysis cannot capture, as it predicts that nonintersective adjectives are always merged with *a*, which in turn entails that nonintersective adjectives will always be adjoined to NumP, thus being excluded from polydefinites. Moreover, it is unclear how the distributive reading with collective nouns is excluded in Kyriakaki's analysis. It could be

¹⁴The example in (47a) was marked as ungrammatical when it was presented above, but that was representing Campos and Stavrou's (2004) judgement. Panagiotidis and Marinis (2011), and also my informants, do not share that judgment.

stipulated that when the adjective merges with *n* only the collective reading is available. However, there is no reason, beyond pure stipulation, why this should be the case.

A final problem of the analysis is that it derives all prenominal modifiers in polydefinites by employing movement of the modifier to a Focus position. Yet, in (45) we saw that if polydefinites were focussed, then the noncontrastive continuation ‘as well as the thin one’ would have to be infelicitous, but it is not:

- (45) a. i Sara filise ton paxulo ton eksojiino, kaθos ke ton
the Sarah kissed.3SG the chubby the alien, while and the
lepto
thin
‘Sarah kissed the chubby alien, as well as the thin one.’
- b. i Sara filise ton PAXULO ton eksojiino, #kaθos ke ton
the Sarah kissed.3SG the chubby the alien, while and the
lepto
thin
‘Sarah kissed the CHUBBY alien, #as well as the thin one.’
- c. i Sara filise ton PAXULO ton eksojiino, oçi ton lepto
the Sarah kissed.3SG the chubby the alien, NEG the thin
‘Sarah kissed the CHUBBY alien, not the thin one.’

Kyriakaki’s analysis could nevertheless account for the unavailability of coordinated adjectives in polydefinites, by assuming that the DP in which the adjectives are merged in polydefinites is small and therefore excludes anything other than a *nP*.

In table 4.1 we see a summary of the main problems that the analyses presented in this section encounter.¹⁵ The first problem is overgeneration and it is a problem for Alexiadou and Wilder (1998), Panagiotidis and Marinis (2011) and Lekakou and Szendrői (2012). This is due to the fact that their analyses make use of fully fledged DPs, and ellipsis does not sufficiently restrict the generation of unattested orders. On the other hand, the analyses by Campos and Stavrou (2004) and Kyriakaki (2011) undergenerate. This is because the former analysis assumes that there is head movement of A^0 in polydefinites, while the latter takes polydefinite modifiers to be nominalisations. As a result, both of these analyses incorrectly predict that modifiers in polydefinites cannot be modified

¹⁵The abbreviations in the table refer to Alexiadou and Wilder 1998; Campos and Stavrou 2004; Panagiotidis and Marinis 2011; Lekakou and Szendrői 2012; Kyriakaki 2011, respectively.

or take complements. The upside of these two analyses, however, is that they can exclude coordination in polydefinites, while the analyses that employ fully fledged DPs cannot.

Table 4.1: Previous analyses: summary of problems

	A&W	C&S	P&M	L&S	K
Overgenerates	×		×	×	
Undergenerates		×			×
Permits coordination	×		×	×	
Permits superlatives			×	×	
Permits distributive reading				×	×
No predictions about the semantics of definiteness	×				×
Blocks nonintersective, nonpredicative As	×	×	×		×
Blocks nonrestrictive interpretation				×	×
Prenominal As are obligatorily focussed		×			×

The two analyses that involve noun ellipsis, namely Panagiotidis and Marinis 2011 and Lekakou and Szendrői 2012, cannot block superlatives from entering the structure, even though these are excluded from polydefinites. As for the two nonpredicative analyses by Lekakou and Szendrői and Kyriakaki, they falsely predict that the distributive interpretation in polydefinites with collective nouns should be available, as modifiers in polydefinites are still attributive.

Alexiadou and Wilder, and also Kyriakaki, do not make any clear predictions about which determiner is semantically responsible for definiteness in their analyses. Moreover, none of the analyses, except for Lekakou and Szendrői's, accounts for the variation observed among speakers, where some speakers allow nonpredicative adjectives in polydefinites, as long as they are prenominal. However, Lekakou and Szendrői's analysis predicts that nonpredicative adjectives would be allowed in either position and not just prenominally. In addition, their analysis cannot account for the presence of nonrestrictive polydefinites as it strongly relies on the restrictive nature of polydefinites. Finally, Campos and Stavrou, as well as Kyriakaki, require prenominal adjectives in polydefinites to be focussed, but it was shown that this is not a valid requirement.

In addition to the above, there are problems that are specific to each analysis.

For instance, movement in Alexiadou and Wilder’s analysis is only motivated by word order parameters, while Campos and Stavrou assume a complex head D+N, which again seems to be unmotivated. For Panagiotidis and Marinis the problem lies with the assumption that different readings are associated with each order, and for Lekakou and Szendroi the problem is found in the symmetrical relationship of the DPs.

4.4 An alternative analysis

In this section I will present an account that captures the interpretive differences between polydefinites and monodefinites. The analysis will draw upon Cinque’s (2010) analysis of indirect modification adjectives. As was briefly mentioned in section 4.2, there appears to be a correlation between postnominal adjectives in Germanic and Greek polydefinites. The table in 4.2 summarises the shared properties of postnominal adjectives in Germanic and polydefinites.¹⁶ Firstly, they are necessarily predicative, something that follows directly if we analyse them in a reduced relative clause. In addition, they are unambiguously interpreted as intersective and they tend to be restrictive.

Table 4.2: Properties of Germanic postnominal adjectives & Greek polydefinites

	Post-N Germanic As	Greek polydefinites
Predicative	✓	✓
Intersective	✓	✓
Unambiguous	✓	✓
Restrictive	✓	(✓)

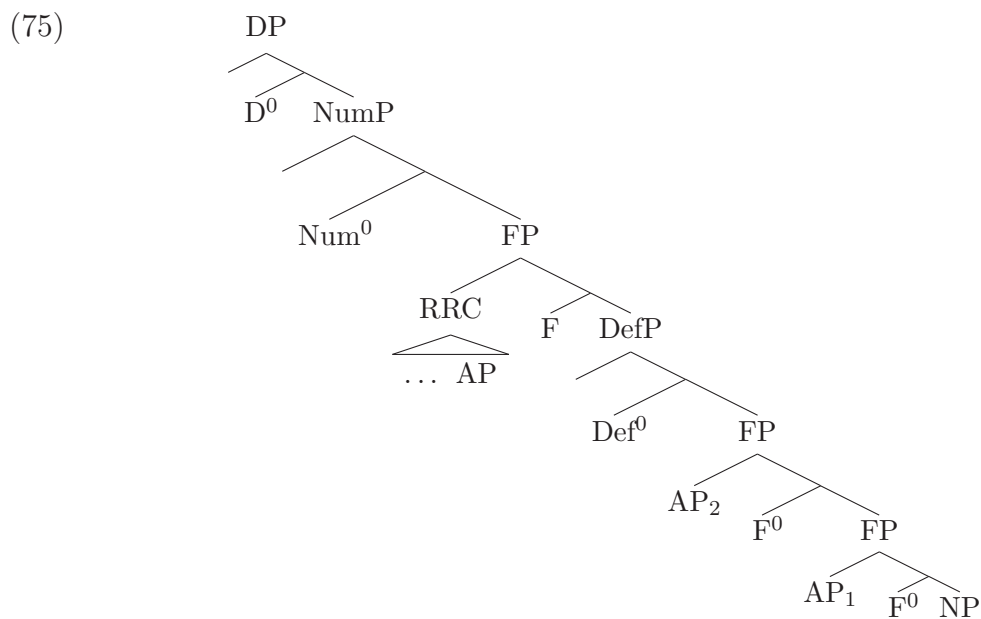
Taking these similarities into account, and drawing upon the fact that according to Cinque (2010) postnominal adjectives in Germanic always have an indirect source of modification, I conclude that Greek polydefinites also have an indirect source. This is in line with Alexiadou and Wilder’s (1998) analysis, which argues that all polydefinites are merged inside a reduced relative structure, while Greek monodefinites have a direct modification source.

¹⁶Cinque provides further semantic distinctions between the prenominal and postnominal positions for Germanic, but not all of the interpretations can be tested in polydefinites. This does not undermine the analysis presented here, as the readings that can be tested in polydefinites show the exact same effects as the Germanic postnominal adjectives.

Intensional adjectives, which sometimes appear in constructions with multiple occurrences of the definite article, are excluded from the indirect source due to the fact that they are nonpredicative. What will be argued instead, is that these are instances of *pseudopolydefinites*, which do not share the properties of true polydefinites. The fact that intensional adjectives always have a direct modification source will become clearer in section 4.4.3. Let us now look at the analysis in detail.

4.4.1 The basic structure

The structure I propose for the Greek DP is the following:¹⁷



What we first notice is that the DP splits into a DP and a DefP. Karanassios (1992) was the first to propose an additional functional head for Greek that has similar properties to the ones standardly assumed for D^0 . In his work, this extra functional head only hosts the definite article, while all other determiners are found under D^0 . Stavrou (1996), Alexiadou (2006) and, as we have seen in section 4.3.2.1, Lekakou and Szendrői (2012) have also argued in favour of a separate functional head for Greek, which they label Def^0 . Here, I adopt Alexiadou’s (2006) proposal which states that Def^0 marks familiarity/presupposition. D^0 is the head associated with the semantics for definiteness, in other words, uniqueness

¹⁷I am only presenting the functional projections that are relevant to my analysis. However, there are more heads that are standardly assumed to be present in the structure, e.g. Dem^0 .

and referentiality.¹⁸

Alexiadou (2006), following Anagnostopoulou (1994), notes that Greek poly-definites resemble clitic doubling in Greek, where the nominal phrase which is doubled is strongly presuppositional. This becomes evident when we compare (76a) to (76b) and (76c), where the clitic is doubled. In the first example ‘the alien’ can, but need not be new information in the discourse. For instance, (76a) is a licit answer to the question ‘Who did you kiss?’. On the other hand, (76b) and (76c) are not suitable answers to that question. In these last two examples, ‘the alien’ is already given in the discourse and, consequently, the verb is responsible for bringing new information into the discourse. We notice this by the fact that the verb is accented and is optionally contrastive as the parenthetical phrase suggests.

- (76) a. *filisa ton eksojiino*
 kissed.1SG the.ACC alien.ACC
 ‘I kissed the alien.’
- b. **ton** *FILISA ton eksojiino* (ðen ton agaliasa)
 him kissed.1SG the.ACC alien.ACC NEG him hugged.1SG
 ‘I KISSED the alien; (I didn’t hug him.)’
- c. *ton eksojiino ton* **FILISA** (ðen ton agaliasa)
 the.ACC alien.ACC him kissed.1SG NEG him hugged.1SG
 ‘I KISSED the alien; (I didn’t hug him.)’

Regarding the position of Def⁰ in the structure, I assume that this is merged above direct modification adjectives, but below numerals and indirect modification adjectives as represented in (75). The proposed position of Def⁰ sets the present analysis apart from previous analyses (Karanassios 1992, Stavrou 1996, Lekakou and Szendrői 2012) which take the two heads, D⁰ and Def⁰, to be merged the one immediately above the other. Interestingly, the position in which DefP is merged in my analysis corresponds to the position in which Cinque (2010:34) proposes that dP is generated. In Cinque’s (2008; 2010) analysis, d⁰ is the head of the relative clause and is assumed to have an indefinite character. In summary, Cinque (2008) provides evidence from three sets of facts in favour of the indefinite nature of d⁰:

1. In some languages, for instance Kusaiean, an indefinite article is present between the relative clause and the head.

¹⁸This is reminiscent of Lekakou and Szendrői 2012, with the difference that for them it was Def⁰ and not D⁰ that was higher in the structure, and, consequently, it was Def⁰ that was associated with the semantics of definiteness.

2. Readings that are typically found with indefinite DPs in Italian and other languages, are also available to relatives, even if the relatives do not come with an overt indefinite article.
3. Relative clauses in Lakhota only allow weak determiners such as ‘a’, ‘some’ and ‘few’.

Even though d^0 has an indefinite character, Cinque (2010:34) suggests that it still assigns some referential import. As a result, adjectives that are merged higher than d^0 , in other words indirect modifiers, modify something that has a referential status. In contrast, direct modification adjectives, which are lower than d^0 , modify something that still has a predicative nature. As Cinque notes, this idea can be traced back to Bolinger 1967 where it is claimed that there is an interpretational distinction between *reference*-modification and *referent*-modification. The former is associated with the attributive position of adjectives and the latter with the predicative position. In (77) we see an example of the distinction between the two types (Bolinger 1967:15). In the attributive position the adjective modifies the reference of the noun, and as a result, in (77a) we get the reading where the individual is eager as a student. In the predicative postcopular position, however, the student can be eager as an individual and not just as a student.

- (77) a. the eager student *reference-modification*
 b. The student is eager. *referent-modification*

Going back to Def^0 , it seems possible that this is the same head as Cinque’s d^0 and that presupposition is part of its referential import. In the present analysis I presume that this head is phonologically realised only when the nominal phrase has a presuppositional force, in other words, when it involves a polydefinite.¹⁹ The phonological realisation of Def^0 is the definite article, which precedes the noun and any articleless adjectives as indicated in the following examples:

- (78) a. o paxulos o eksojiinos
 the chubby the alien
 b. o paxulos o prasinus eksojiinos
 the chubby the green alien

¹⁹In section 4.4.3, however, I will suggest that there are exceptions to the generalisation that Def^0 is only realised with polydefinites.

Before examining in detail how these assumptions derive all attested orders of polydefinite constructions there is a final issue that needs to be addressed. As already mentioned, I follow Alexiadou and Wilder (1998) in assuming that the adjective in polydefinites is merged inside an RRC. Where I depart from their analysis, however, is that while they analyse the relative clause as the complement of D^0 , I adopt Cinque's (2010) structure where the RRC is merged in the Spec of a functional head in the extended nominal projection. This was schematised above in (75).

With regard to the structure of the RRC itself, I follow Bhatt (2000), who argues that RRCs lack a CP layer and, as a consequence, relative pronouns and complementisers. For Bhatt, an RRC is a small projection (PrtP), which has a PRO subject. A PrtP with a PRO subject is a predicate, while a PrtP with a non-PRO subject denotes a proposition. Bhatt shows that the PrtP with a PRO subject is of type $\langle e, t \rangle$, which entails that it can combine directly with the NP via Predicate Modification (Heim and Kratzer 1998). This is because the PRO subject is semantically vacuous and is only present for syntactic reasons. For instance, the PRO is needed for examples like (79), where it has to A-move to the subject position of 'likely' for EPP reasons (Bhatt 2000:31 (50)).

- (79) the student likely to win the race
the [[student] [PRO λx likely [x to win the race]]]

My analysis of an RRC also involves a small projection, in this case a PredP. I adopt Bhatt's idea that the subject position is filled with a semantically vacuous PRO, and I take the polydefinite modifier to be the complement of Pred^0 . As is obvious from the representation in (80) no other elements are permitted in the structure.

- (80)
- $$\begin{array}{c}
 \text{PredP} \\
 \swarrow \quad \searrow \\
 \text{PRO} \quad \text{Pred}^0 \quad \text{AP}
 \end{array}$$

The question that arises is where the additional determiner that we find in polydefinites is merged. Following Campos and Stavrou (2004), I would like to propose that the article preceding the AP is the head of the predication structure and is thus merged under Pred^0 . Panagiotidis and Marinis (2011:283) also claim something along the same lines, where one of the articles in polydefinites serves as the predication operator. The difference with their analysis, however, is that

for them the predicative article is merged under a D^0 that possess both referential and predicative properties. They, therefore, have to stipulate that there are two different types of D ; one that is strictly referential and another that can be both referential and predicative.²⁰

In addition, in Panagiotidis and Marinis’s analysis the order of the modifiers and the noun is responsible for determining which article will function as the predicative operator each time. For example, for ‘the green the alien’, they would predict that the article preceding ‘alien’ is the predicative operator, while for ‘the alien the green’, which shares the exact same meaning as the first phrase, they would have to assume that it is the article preceding the adjective ‘green’ that is associated with predicativity. These issues are avoided in the current analysis, since the predicative “article” is always the one before the adjective.

Supporting evidence for treating the additional definite article in polydefinites as being a predicative operator does not just come from Greek polydefinites. As we have seen throughout the chapter, Greek polydefinites are predicative by nature, in the sense that only predicative adjectives are allowed to enter the construction.²¹ Siloni (1995) argues that the definite article in Semitic languages can also have a predicative function, as participial clauses in Hebrew and Standard Arabic are introduced by a definite article. This is witnessed in (81) (Siloni 1995:451, (11b) & 461, (28a)).

- | | | | |
|------|----|--|------------------------|
| (81) | a. | hine ha-’ish ha-ma’aric ’et sara
here the-man the-admiring ACC Sara
‘Here is the man admiring Sara.’ | <i>Hebrew</i> |
| | b. | ’ar-rajulu ’al-qaadimu yadan
the-man the-arriving tomorrow
‘the man arriving tomorrow’ | <i>Standard Arabic</i> |

In addition, Siloni (1995:461, (28c)) provides the Ancient Greek example from Sophocles’ *Antigone* 441, where again a participial clause is introduced by a definite article:

²⁰My analysis, however, runs into a similar problem as it predicts that there are two different $Pred^0$ heads; one that is involved in copular constructions and another which is pronounced like the definite article. A way out of this is to claim that $Pred^0$ gets pronounced as the definite article when it is embedded under an FP in the extended nominal projection, but as a copula in all other cases.

²¹Of course, it was noted that there is variation among speakers and some speakers sometimes allow intensional adjectives in polydefinites too. I will come back to this point in section 4.4.3, where I show that these are not real polydefinites. Polydefinites are always predicative.

- (82) se tɛ:n neuosan ɛ:s pedon kara
 you the lowering to ground head
 ‘you, who lower your head to the ground’

Siloni, in her work, distinguishes between two types of D^0 , one that comes with a [-modifier] feature and another with [+modifier]. In the former case D^0 is referential, whereas in the latter case it heads a modifying phrase. Given that participial clauses are also a type of a reduced relative clause we can conclude that the definite article that introduces participial clauses in Semitic and Ancient Greek, is a predicative operator as the definite article with indirect modification adjectives in Modern Greek.²²

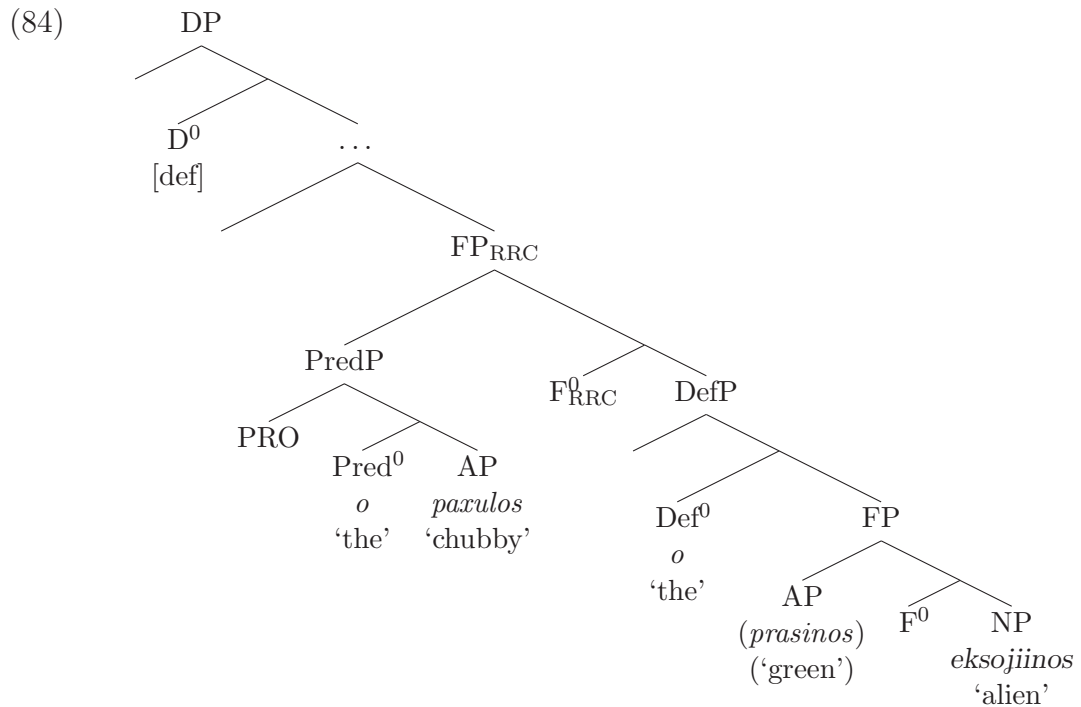
Keeping all of the above points in mind, let us now examine how polydefinites are derived.

4.4.2 Deriving the orders

The diagram in (84) encapsulates the proposal put forward in the previous subsection. First, we notice that the polydefinite modifier is merged inside the RRC, together with the predicative definite article. Given that polydefinites are strongly presuppositional, it follows that Def^0 , which is the head associated with presupposition, is obligatorily realised in a polydefinite.

²²More Ancient Greek examples where the definite article is used to introduce a relative are found in Homer and Herodotus (Goodwin 1900:205, §§ 935 & 939):

- (83) a. pyra pola ta kaieto
 fires many the burning
 ‘many fires which were burning’ *Iliad*, 10, 12
- b. alos ornis iros, tɔ:i ounoma foiniks
 another bird sacred, the name Phoenix
 ‘another sacred bird, whose name is Phoenix’ *Histories*, 2, 73



The question that arises at this stage, is how definiteness is semantically and syntactically realised in polydefinites. The standard assumption is that the head which is responsible for the semantics of definiteness is D^0 . According to Longobardi (1994) in order for a nominal expression to be semantically definite D^0 needs to be lexically filled. If it is empty, then the nominal will have an existential interpretation. For this reason, Longobardi proposes that there is obligatory movement of N^0 to D^0 in the instances where D^0 is empty, in order for the nominal to receive a definite interpretation. Supporting evidence for N^0 -to- D^0 movement comes from the position of proper names in Italian. Proper names, which are definite expressions, must appear in the position where the definite article normally surfaces when the latter is absent. The set of data which supports this claim is given in (85) (Longobardi's (28)), where it is obvious that the proper name obligatorily precedes the possessive adjective *mio* when the definite article is not present.

- (85)
- a. Il mio Gianni ha finalmente telefonato.
the my Gianni AUX finally called.up
 - b. *Mio Gianni ha finalmente telefonato.
my Gianni AUX finally called.up
 - c. Gianni mio ha finalmente telefonato.
Gianni my AUX finally called.up

- d. Il Gianni mio ha finalmente telefonato.
 the Gianni my AUX finally called.up

Longobardi's proposal for D^0 can also be captured in the *Exhaustive Lexicalisation Principle*, put forward by Fábregas (2007) and Ramchand (2008):²³

- (86) *Exhaustive Lexicalisation Principle*:
 Every syntactic feature must be lexicalised.

What this principle predicts is that if a definiteness feature [def] is present in the structure, then it will need to be lexicalised. In Greek monodefinites I assume that the definiteness feature is satisfied by realising the definite article in D^0 . If, we follow Fábregas (2007) in assuming that the syntax and the lexicon are directly related, then we can postulate that the definite article and [def] have some matching feature which allows the former to satisfy the latter.

Let us now return to the issue of how definiteness is realised in polydefinites. What we observe in (84) is that [def] is found on D^0 , which is empty. My proposal is that the empty D^0 will need to attract an element, paralleling Longobardi's analysis for Italian. In contrast to Longobardi's analysis, however, the claim is that what is attracted is a phrase and not just a head. In particular, the phrase that moves is either the DefP or a larger phrase that contains the DefP.²⁴

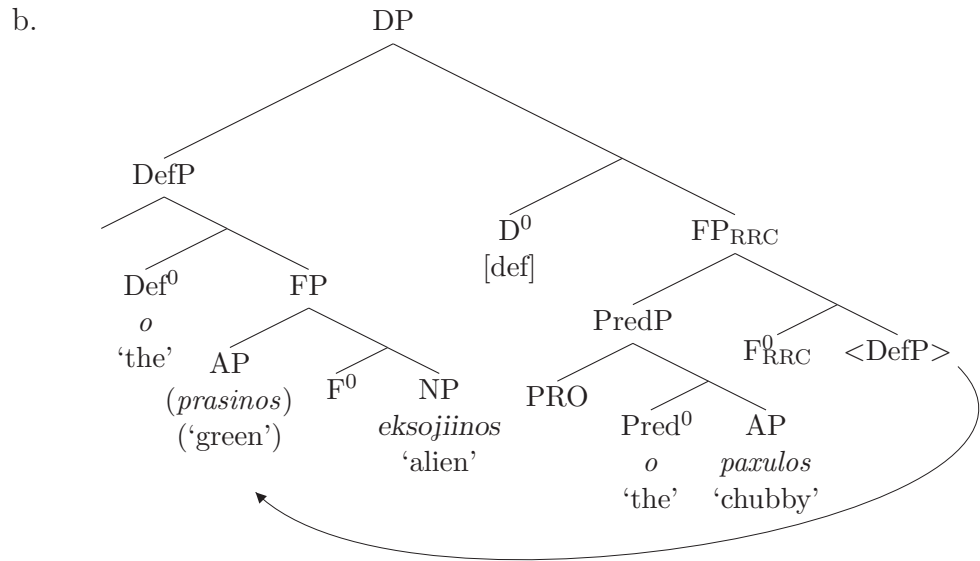
The question that arises is why it is obligatory for the moved phrase to include DefP. A possible answer is related to the assumption that there is a direct link between the syntax and the lexicon; if definite articles can satisfy the lexicalisation requirement of the definiteness feature, it follows that the definite article found on Def^0 will be a suitable candidate for satisfying [def] on D^0 . The definite article in $Pred^0$, on the other hand, is not a suitable candidate as it is not a real article and has no referential import. It is simply the predication operator.

The obligatory movement of a phrase that contains DefP to Spec,DP is responsible for deriving most of the orders attested in polydefinites. For example, a polydefinite with a postnominal adjective is the result of moving DefP to Spec,DP:

- (87) a. o (prasinós) eksojiínos o paxulos
 the green alien the chubby

²³Fábregas (2007) clarifies that the principle does not imply that the syntactic feature must also be phonologically realised, as a lexical item can be phonologically null.

²⁴Adger (2013:119–123) argues something similar for Gaelic, where movement of a genitive or of the defP to D gives rise to a definite interpretation of the nominal.



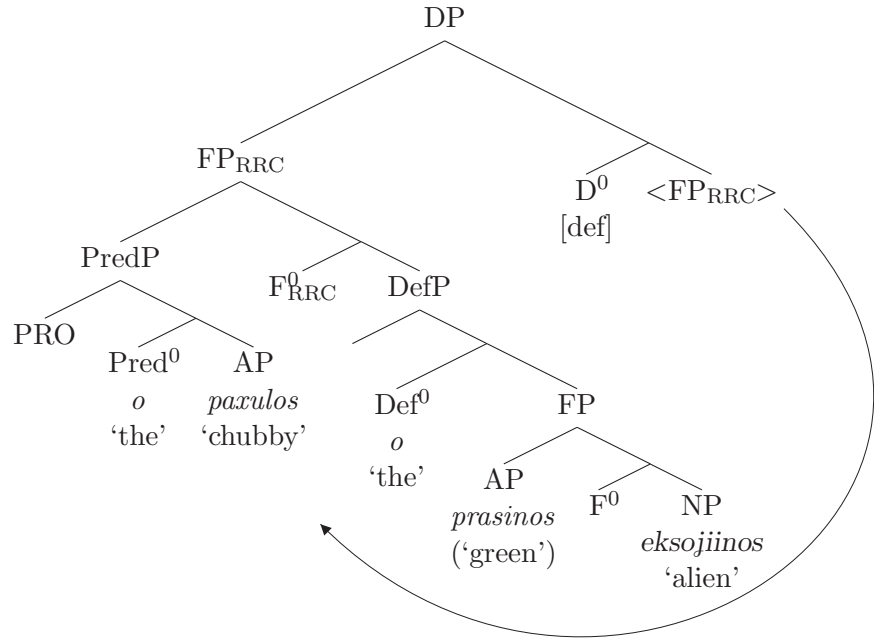
The adjective in parenthesis in (87) is a direct modification adjective, and is simply there to show that the present analysis captures the possibility of finding a direct modification adjective with the noun in a polydefinite. This, as we saw earlier, was a problem for Campos and Stavrou (2004).

Regarding polydefinites with prenominal adjectives I assume that these are derived by moving the FP that hosts the reduced relative clause to Spec,DP as illustrated in (88). The FP_{RRC} is allowed to move to that position as it contains DefP, which satisfies the lexicalisation requirements of [def] on D⁰, by the presence of the definite article on Def⁰.²⁵

- (88) a. o paxulos o (prasinος) eksojiinos
 the chubby the green alien

²⁵The optionality between the two types of movement could be the result of whether the relevant definiteness feature pied-pipes the larger structure or not.

b.



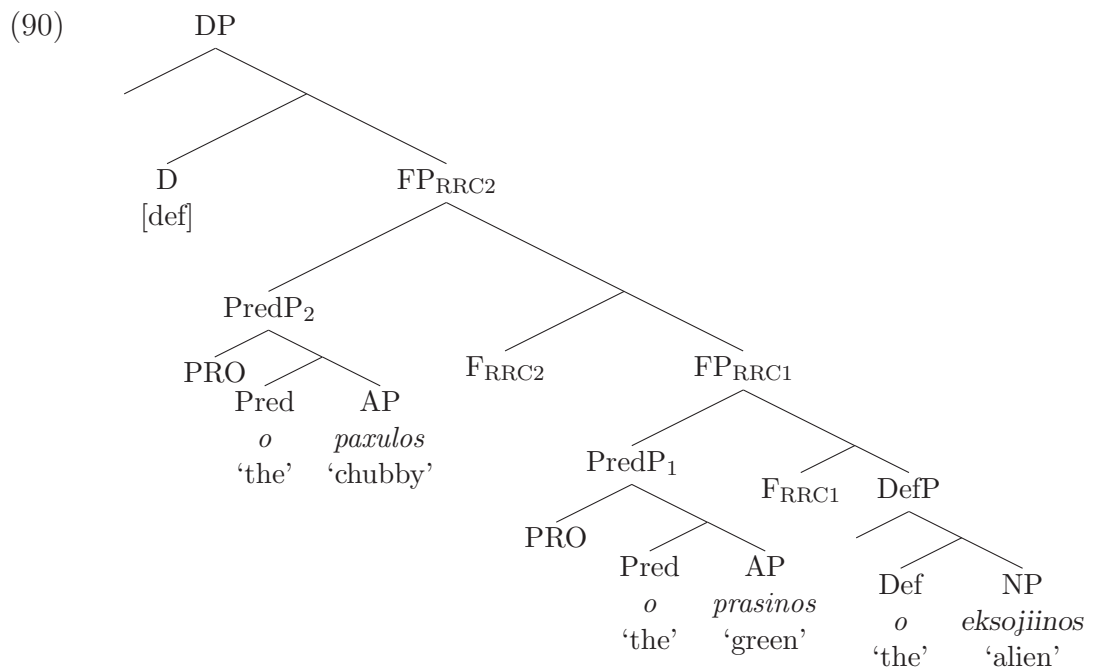
This analysis makes a number of predictions and avoids several of the problems that were laid out for previous analyses. First of all it does not under- or over-generate. It is obvious from the above structures that a monodefinitive, i.e. ‘the green alien’ is correctly allowed in the polydefinite. This is due to the proposal that direct modification adjectives are found lower than Def⁰. What this analysis blocks is additional adjectives from appearing inside the RRC. Considering that the RRC is a small projection that only allows PRO as a subject, a Pred⁰ head, and an AP as a complement, it follows that any additional adjectives will be excluded. This is a welcome outcome as phrases like (66a), repeated below, are unacceptable. The phrase can be rescued if *prasinος* ‘green’ is accompanied by an article, in which case the analysis predicts that it will be merged inside a separate PredP.

- (66) a. *o eksojiinos o paxulos prasinος
 the alien the chubby green
 b. o eksojiinos o paxulos o prasinος
 the alien the chubby the green
 ‘the chubby green alien’

Allowing multiple PredPs in the structure is supported by the fact that Greek permits stacked relatives as is obvious from the following examples:

- (89) a. *aȳorasa to vivlio, pu iȳele i ȳimitra, pu itan*
 bought.1SG the book that wanted.3SG the Dimitra that was
akrivo.
 expensive
- b. *aȳorasa to vivlio, pu itan akrivo, pu iȳele i*
 bought.1SG the book that was expensive that wanted.3SG the
ȳimitra
 Dimitra.
 ‘I bought the book that Dimitra wanted that was expensive.’

As Cinque (2010) notes, the RRCs are not merged in a hierarchical order, hence the freedom in the order of indirect modifiers. That relatives have free ordering, is also evident from the examples in (89). Consequently, in the structure in (90) there are no syntactic principles to stop [PRO the green] from merging above [PRO the chubby]. Rather, scope effects are responsible for determining which RRC will be merged first.²⁶



The six possible orders for a polydefinite construction with two adjectives are therefore derived as in (91). In examples (a)–(c) the adjective ‘chubby’ is merged higher than ‘green’. In (a), the highest FP_{RRC} moves to Spec,DP and takes the lower FP_{RRC} and DefP with it. In (b) the lower FP_{RRC} moves to Spec,DP together with the DefP, while the higher FP_{RRC} stays in situ. Finally, in (c) only the DefP moves and the two functional projections hosting the reduced relative

²⁶This was discussed in more detail in section 4.3.1.1.

clauses stay in their merging position. Examples (d)–(f) involve the exact same movements, with the only difference being that ‘green’ is merged higher than ‘chubby’.

- (91) a. [DP [FPRRC2 the chubby the green the alien] D⁰ <FPRRC2>]
 b. [DP [FPRRC1 the green the alien] [D⁰ [FPRRC2 the chubby <FPRRC1>]]]
 c. [DP [DefP the alien] [D⁰ [FPRRC2 the chubby [FPRRC1 the green <DefP>]]]]
 d. [DP [FPRRC2 the green the chubby the alien] D⁰ <FPRRC2>]
 e. [DP [FPRRC1 the chubby the alien] [D⁰ [FPRRC2 the green <FPRRC1>]]]
 f. [DP [DefP the alien] [D⁰ [FPRRC2 the green [FPRRC1 the chubby <DefP>]]]]

Now recall that, for Campos and Stavrou (2004), prenominal adjectives in poly-definites are not allowed to be modified or to take a complement. However, it was noted that their judgements are not shared across Greek speakers.²⁷ As a result, the acceptability of the examples in (94) and (47) cannot be captured under their analysis. The present analysis, on the other hand, can account for the possibility of the adjective being modified or taking a complement when in a polydefinite construction, both prenominally and postnominally, as it has a phrasal nature (AP).

- (94) a. o eksojiinos o poli paxulos
 the alien the very chubby
 b. o poli paxulos o eksojiinos
 the very chubby the alien
 ‘the very chubby alien’

- (47) a. i perifani ja ta peðia tis i mana
 the proud of the children her the mother
 b. i mana i perifani ja ta peðia tis
 the mother the proud of the children her
 ‘the mother proud of her son’

²⁷The fact that for Campos and Stavrou (2004) only the postnominal position is acceptable when the adjective is modified or takes a complement, might be related to some heaviness constraint as in English:

- (92) a. a book yellow with age
 b. *a yellow with age book (Hawkins 1994)
- (93) a. a student keen on jazz
 b. *a keen on jazz student (Escribano 2004)

A problem encountered with most of the previous analyses was the failure to exclude coordination in polydefinites. An example of coordination, which is repeated below, was given in (38). This analysis, however, makes the correct predictions. Given that the polydefinite modifier is a PredP it is not possible for it to be coordinated with a direct modification AP as the two conjuncts are not constituents.

- (38) a. to mikro ce ftino đomatío
 the small and cheap room
 b. *to mikro ce ftino to đomatío
 the small and cheap the room
 ‘the small and cheap room’

Another problem that this analysis avoids is admitting superlatives in polydefinites. As was mentioned earlier in this chapter, Matushansky (2008) argues that superlatives are always attributive even when the noun is not phonologically realised. If adjectives in polydefinites are merged as APs in a PredP, it follows that superlatives will be excluded from the indirect source of modification as there is no room in the PredP for the noun.

While polydefinites are often associated with a restrictive interpretation, I agree with Panagiotidis and Marinis (2011) and Manolessou (2000) that polydefinites are not necessarily restrictive, and that the interpretation of polydefinites is predicative and intersective. In the analysis presented here, the reduced relatives are not restrictive by nature. What brings about the restrictive reading is a combination of factors: a) the presuppositional force of DefP, and b) the intersectivity of the adjectives in PredP. If the DefP is already given, then it is likely that the adjective will restrict the presupposed set since it brings new information in the discourse. Taking into account that all adjectives in polydefinites are intersective, then it is possible for the polydefinite to be the proper subset of a previously established set.

With regard to the unavailability of the distributive reading in polydefinites with collective nouns, this is straightforwardly captured in the present analysis as the reading is lost when the adjective that modifies the noun is merged in a predicative position. The relevant examples that support this claim are repeated below:

- (17) a. to oreo zevyari
 the beautiful couple

- Reading 1: ‘they are beautiful collectively as a couple’
 Reading 2: ‘the two people are beautiful independently’
- b. to oreo to zevyari
 the beautiful the couple
 Reading 1: ‘they are beautiful collectively as a couple’
 *Reading 2: ‘the two people are beautiful independently’
- (22) b. to zevyari pu ine oreo
 the couple that is beautiful
 ‘beautiful as a couple’/*‘beautiful independently’
- (39) b. to zevyari ine oreo
 the couple is beautiful
 ‘beautiful as a couple’/*‘beautiful independently’

In table 4.3 we find a revised version of table 4.1, which includes a sixth column (P) with the problems of the present analysis. What is still unaccounted for is how it is possible for nonintersective/nonpredicative adjectives to sometimes appear in polydefinites.

Table 4.3: Previous and present analyses: summary of problems

	A&W	C&S	P&M	L&S	K	P
Overgenerates	×		×	×		
Undergenerates		×			×	
Permits coordination	×		×	×		
Permits superlatives			×	×		
Permits distributive reading				×	×	
No predictions about the semantics of definiteness	×				×	
Blocks nonintersective, nonpredicative As	×	×	×		×	×
Blocks nonrestrictive interpretation				×		
Prenominal As are obligatorily focussed		×			×	

One of the outcomes of assuming a predicative source for adjectives in polydefinites is that nonpredicative adjectives will be prevented from entering the polydefinite. At first blush, this seems to yield the correct results as intensional adjectives appear to be excluded from polydefinites:

- (95) a. *i ipotithemenes i mistikes i sinantisis
 the alleged the secret the meetings
 b. *i ipotithemenes i sinantisis i mistikes
 the alleged the meetings the secret
 ‘the alleged secret meetings’

Nevertheless, we have seen examples where nonpredicative adjectives are acceptable in a polydefinite as long as the adjective appears prenominally:

- (30) a. *o proeðros itan proiyumenos
 the president was previous
 b. o proiyumenos o proeðros
 the previous the president
 c. *o proeðros o proiyumenos
 the president the previous

The issue of nonpredicative polydefinites is the topic of the next section (4.4.3). However, before finishing this section, I would like to briefly look at numerals whose distribution in polydefinites is puzzling. Numerals, which are predicative and should therefore be allowed to enter the PredP, seem to have a more restricted distribution than other predicative modifiers:

- (96) a. ta tria ta mavra ta aftocinita
 the three the black the cars
 b. ta tria ta aftocinita ta mavra
 the three the cars the black
 c. ?*ta aftocinita ta tria ta mavra
 the cars the three the black
 d. *ta aftocinita ta mavra ta tria
 the cars the black the three
 e. *ta mavra ta aftocinita ta tria
 the black the cars the three
 f. *ta mavra ta tria ta aftocinita
 the black the three the cars

In section 4.3.1.1 we saw that Manolessou (2000) and Alexiadou (2003) exclude numerals from polydefinites. The supporting examples for this claim are repeated here:

- (23) a. *i somatofilakes i tris
the musketeers the three
‘the three musketeers’
- b. i somatofilakes itan tris
the musketeers were three
‘There were three musketeers’

The generalisation that appears to hold, however, is that polydefinites with numerals are acceptable as long as the numeral surfaces first, which is what we find in (96a) and (96b). If the numeral comes after the noun or an adjective, the phrase becomes unacceptable. A possible explanation for the unacceptability of the above phrases would be to claim that it is due to a scopal constraint rather than a syntactic condition. Given that numerals generally scope over adjectives, it could be the case that they will need to take scope over them even in polydefinites. This, nevertheless, is a speculation and I therefore leave open the question of what the syntax of numerals in polydefinites is.

4.4.3 A note on *pseudopolydefinites*

An issue that has not been addressed yet is the variation observed amongst speakers with regard to allowing polydefinites with nonpredicative adjectives. What seems to be the case, is that some speakers accept these adjectives in polydefinites if the set that the noun denotes is presupposed/familiar. The example that was given earlier is repeated below:

- (11) A: John said that he had met with aliens several times.
B: ke pu akriivos ejinan i ipotiθemenes i sinantisis?
and where exactly happened the alleged the meetings?
‘Where exactly did the alleged meetings take place?’
- B’: *... i sinantisis i ipotiθemenes
... the meetings the alleged

Crucially, the same speakers who allow these adjectives in polydefinites, only accept them when these surface prenominaly. I take this to suggest that these are not real polydefinites, but rather, *pseudopolydefinites*. Further support that these constructions differ from polydefinites comes from the fact that if more adjectives are added to the structure, then the phrase becomes unacceptable, even if the set that the additional adjective and the noun denote is already established in the discourse. This is demonstrated in (97). The phrase becomes even more degraded if the additional adjective appears to be in a polydefinite construction

as in B'.

- (97) A: John said that he had secret meetings with aliens several times.
B: ??ke pu akriivos ejinan i ipotiθemenes i mistices
and where exactly happened the alleged the secret
sinantisis?
meetings?
B': *... i ipotiθemenes i mistices i sinantisis?
... the alleged the secret the meetings
'Where exactly did the alleged secret meetings take place?'

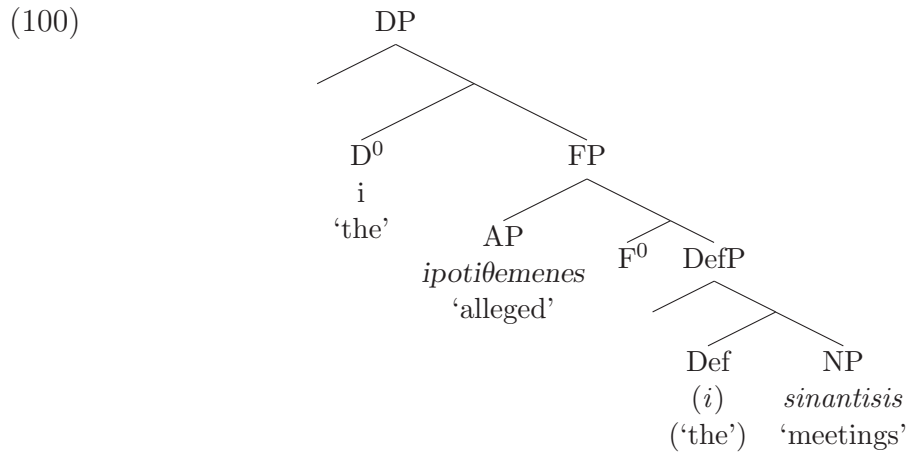
What the data suggest is that these cases should not be analysed in the same manner as polydefinites. What appears to be happening in these constructions is that some speakers seem to allow realisation of Def with nonpredicative adjectives when there is a strong familiarity force. Given the nonpredicative nature of the adjective, however, it will still be disallowed from merging inside PredP.

The question then, is where intensional adjectives are merged. A tentative suggestion is that intensional adjectives are merged higher than DefP, even in monodefinites. Suggestive evidence of this comes from the fact that while other direct modification adjectives, which are extensional, can appear inside a monodefinite in a phrase that also includes a polydefinite adjective, intensional adjectives cannot. This contrast is illustrated below, where the monodefinite is found inside the brackets:

- (98) *Polydefinite + monodefinite with extensional A*
a. o psilos [o omorfos fititis]
the tall the handsome student
b. [o omorfos fititis] o psilos
the handsome student the tall
- (99) *Polydefinite + monodefinite with intensional A*
a. ?*o psilos [o proin fititis]
the tall the former student
b. ??[o proin fititis] o psilos
the former student the tall

If intensional adjectives are indeed merged above DefP as schematised in (100), then variation among speakers comes down to whether Def⁰ is realised or not in presuppositional contexts. This accounts for the fact that nonpredicative adjectives in *pseudopolydefinites* are never found in a postnominal position, unlike

predicative adjectives in true polydefinites.



The fact that nonpredicative adjectives are not allowed in polydefinites under the analysis presented in this chapter, should therefore not be seen as a shortcoming. On the contrary, assuming a predicative source for polydefinites correctly excludes nonpredicative adjectives from this type of modification. The variation witnessed with some speakers can be accounted for without having to eliminate the proposal that true polydefinites have a predicative source.

4.5 Mono*in*definites and Poly*in*definites

In this short section I will claim that adjectives in Greek indefinites also have two sources: a direct and an indirect source. Alexiadou and Wilder (1998) argue that indefinites are similar to polydefinites, but with a null determiner. The indefinite determiner *ena* ‘one’ only appears once in indefinites, at the leftmost position as in (101).

- (101) *ena aftocinito kokino*
 one car red
 ‘a red car’

Velegrakis (2011), however, claims that there is no indefinite article in Greek and that ‘*ena*’ is in fact a quantifier. He supports this, by showing that *ena* presents the same distribution as the quantifiers *kaθe* ‘every’ and *kapjo* ‘some’:

- (102) a. *ena/kaθe/kapjo aftocinito kokino*
 one/every/some car red

- b. ena/kaθe/kapjo kokino aftocinito
 one/every/some red car
 ‘a/every/some red car’

For Alexiadou and Wilder, the evidence that indefinites are parallel to polydefinites comes from the flexibility of the adjective ordering:

- (103) a. enas paxulos prasinos eksojiinos
 one chubby green alien
 b. enas prasinos paxulos eksojiinos
 one green chubby alien
 c. enas eksojiinos paxulos prasinos
 one alien chubby green
 d. enas eksojiinos prasinos paxulos
 one alien green chubby
 e. enas paxulos eksojiinos prasinos
 one chubby alien green
 f. enas prasinos eksojiinos paxulos
 one green alien chubby
 ‘a chubby green alien’

What we observe in (103) is that the ordering freedom of the adjectives in indefinites corresponds to the freedom witnessed in polydefinites. If, as Velegrakis claims, there is no indefinite article in Greek, then it is not surprising that we do not find multiple instantiations of the indefinite article in Greek polyindefinites. As to how the ordering freedom of polyindefinites is accounted for, it could again be that a feature on D^0 , possibly a [-def], triggers movement.

In addition to the parallels between indefinites and polydefinites, we can also draw comparisons between indefinites and monodefinites. Firstly, nonpredicative adjectives, which are excluded from polydefinites, are forbidden from appearing postnominally in indefinites. The prenominal position is, nevertheless, acceptable. Given that the postnominal position is strictly available to adjectives derived in an RRC, it follows that nonpredicative adjectives will be disallowed postnominally, both in definites and indefinites.

- (104) a. kapjos proin proedros
 some former president
 b. *kapjos proedros proin
 some president former
 ‘some former president’

Moreover, we have seen that polydefinites often give rise to restrictive readings, while pronominal direct modification adjectives allow both restrictive and non-restrictive readings. Consider (105). Kolliakou (2004) argues that the adjective ‘poisonous’ cannot enter a polydefinite construction with the noun ‘cobras’, as all cobras are poisonous and the adjective cannot be interpreted restrictively. In (106a) we see that even in the indefinite construction, ‘poisonous’ is infelicitous when it appears postnominally. On the other hand, the pronominal indefinite is acceptable. This is an observation that Velegrakis (2011:147) also makes.

(105) #iða tis kobres tis ðilitirioðis
 saw.1SG the cobras the poisonous
 ‘I saw the poisonous cobras’

(106) a. #iða mia kobra dilitiriodi
 saw.1SG one cobra poisonous
 b. iða mia dilitiriodi kobra
 saw.1SG one poisonous cobra
 ‘I saw a poisonous cobra’

What we can conclude from the data presented in this section is that the syntactic and semantic differences observed with definites are also witnessed in indefinites. At first blush, indefinites appear to pattern with polydefinites, but given the data in this section it is reasonable to assume that they pattern with monodefinites too. The two sources of adjectival modification are therefore available not just to definites, but to indefinites as well.

4.6 Chapter summary

In this chapter we saw that polydefinites come with different syntactic and semantic properties than monodefinites. The flexibility in the order and the interpretive differences were accounted for by claiming that polydefinites are derived in a syntactic structure different from that of monodefinites. This idea was adopted from Cinque 2010 which shows that, cross-linguistically, adjectives have two sources of modification: a direct source and an indirect source.

Thorough investigation of previous analyses on polydefinites led us to conclude that none of these analyses can sufficiently capture the data. The alternative analysis presented in this chapter attempted to overcome the problems that previous analyses face. One of the main ideas of the proposal is that adjectives in

polydefinites are merged in a reduced relative clause (Alexiadou and Wilder 1998; Cinque 2010), which I assumed has the form of a PredP. The AP is merged as the complement of Pred^0 , while the article that precedes the adjective is a predicative operator and is therefore the head of the phrase. The PredP is merged in the Spec of a dedicated functional projection, which is found between D^0 and DefP. I argued that Def^0 has a presuppositional force, and given the presuppositional nature of polydefinites, it was claimed that the article which precedes the noun in polydefinites is merged under this head.

The freedom of the order in polydefinites is the outcome of two hypotheses: a) the DefP or a larger phrase that contains DefP obligatorily moves to Spec,DP when D^0 is empty, and b) PredPs are freely ordered with respect to one another and, consequently, adjectives merged inside PredPs do not exhibit any ordering restrictions.

In the final section, it was shown that definites and indefinites in Greek are two sides of the same coin, as the direct modification source and the RRC source appear to be available to both.

Chapter 5

Adjective ordering and placement in Cypriot Maronite Arabic

5.1 Introduction

This chapter is concerned with adjective ordering in Cypriot Maronite Arabic, an endangered Arabic dialect spoken by Maronites who originate from the village of Kormakitis in North-Western Cyprus. The dialect has no written counterpart, and all of its speakers are bilinguals in Cypriot Maronite Arabic (henceforth CMA) and (Cypriot) Greek.

CMA has been heavily influenced by Greek as a result of intensive contact. When Newton (1964) studied the language, he claimed that thirty-eight percent of the vocabulary was borrowed from Greek. Later studies (Tsiapera 1969; Borg 1985; Hadjidemetriou 2009) showed that the borrowing was not limited to vocabulary items and that CMA came to borrow a variety of linguistic features especially in relation to morphology and phonology. The present study is the first syntactic investigation of the language.

This chapter begins by presenting some of the CMA data which, at first glance, seem to be problematic for any analysis that takes the position that adjectives which belong to the same class behave uniformly. This is done in section 5.2. In section 5.3 I look at adjective distribution in Modern Arabic, as this will become relevant when analysing the CMA data later in the chapter. The discussion returns to CMA in section 5.4 where I investigate the morphology and syntax of each adjective class separately, in order to gain a better understanding of the CMA facts. In section 5.5 I compare adjective distribution in CMA to Modern Arabic, Greek polydefinites, and Welsh, and I conclude that even though

some parallels can be drawn, the CMA facts appear to be unique. The final section 5.6 presents an analysis for CMA adjectives. I argue that the CMA orders which appear to be puzzling, can be accounted for once we understand what motivates movement in the nominal domain. This section also examines two different systems, an antisymmetric and a symmetric analysis, that derive the mirror image order of modifiers in the nominal domain.

5.2 The puzzle

What sets CMA apart from other Arabic dialects is the fact that adjective ordering and placement appears to be quite flexible. Firstly, adjectives in CMA can surface both before and after the head noun as in (1), while adjectives in Modern Standard Arabic (MSA), are strictly postnominal as shown in (2).^{1,2}

- (1) *CMA*
- a. tin-i varka li-prasini
give-me paper.DEF.F the-green.F
 - b. tin-i li-prasini varka
give-me the-green.F paper.DEF.F
'Give me the green book/paper'
- (2) *MSA*
- a. al-kitab al-aḥmar
the-book.M the-red.M
 - b. *al-aḥmar al-kitab
the-red.M the-book.M

However, not all adjectives in CMA are free to appear in both positions. For instance, the adjective in (3) must appear postnominally, even though the sentence is identical to the one in (1) apart from the fact that a different colour term is used. This example patterns with the MSA positioning of adjectives.

¹All the CMA examples are transcribed in IPA. Examples from other languages, which have been taken from a variety of sources, are transcribed as in the original source.

²Definiteness in CMA is marked by the use of the definite article *l-*. However, the article is assimilated when the following word begins with a single consonant. If the word-initial consonant is a plosive, the plosive must become aspirated. When the following word begins with a consonant cluster, then a vowel is added to the definite article, giving the form *li-*. In the glosses, I distinguish between the phonetically present and the assimilated definite article. The former is glossed as 'the', while the latter is marked on the noun or adjective as DEF.

- (3) *CMA*
- a. tin-i varka χabra
give-me paper.DEF.F red.DEF.F
- b. *tin-i χabra varka
give-me red.DEF.F paper.DEF.F
'Give me the red book/paper'

What appears to be relevant to the positioning of the adjective is whether the adjective is a native Arabic word or a borrowed Greek word. In (1), where the adjective is allowed in either position, *prasino* 'green' is borrowed from Greek, while in (3) the colour term *χabra* 'red' is a native Arabic word. As is evident in (4), the same restriction is observed with native Arabic words from other classes of adjectives.³

- (4) a. varka li-ybire
paper.DEF.F the-big.F
- b. ??li-ybire varka
the-big.F paper.DEF.F
'the big book/paper'

Interestingly, the size adjective is permitted preminally when it occurs with a borrowed Greek adjective, while the native colour adjective must remain postnominal even then. This is what we see in (5).⁴

- (5) a. li-ybir li-strodzilo t^havli
the-big.N the-round.N table.DEF.N
'the big round table'
- b. ??li-strodzilo l-axmar t^havli
the-round.DEF.N the-red.DEF.N table.DEF.N
'the round red table'

The way adjectives are ordered with respect to one another in CMA does not follow one set order. Prenominally, adjectives adhere to the order in (6a) which,

³The unacceptability of the example in (3b) is marked with * while (4b) is marked with ?. I abstract away from this distinction and I simply treat judgements marked with these symbols as being unacceptable.

⁴Unlike other Arabic dialects which only distinguish between masculine and feminine gender, CMA makes a three-way distinction that also includes neuter. Neuter gender does not occur with any native Arabic nouns, but is only found with borrowed nouns that are neuter in Greek. Agreement between a native Arabic adjective and a neuter noun is achieved by specifying the adjective with the default gender, which is masculine. In examples such as (5), where the noun is neuter, the native arabic adjectives for 'big' and 'red' appear in the masculine form *axmar* but they are glossed as neuter.

as was indicated in previous chapters, is assumed to be the underlying hierarchical sequence of adjectives. That this is the case is evident from example (5a), where a size adjective appears to the left of a shape adjective. Postnominally, the preferred order for most adjective classes is again the universal order which is given in (6b). The phrase in (7) is an example of this order. Nevertheless, the mirror image order in (6c), which happens to be the MSA order, is also witnessed and is in fact the preferred order for a small number of adjectives. An example of the mirror image order is given in (8).

- (6) a. Quality > Size > Shape > Colour > Nationality > N
 b. N > Quality > Size > Shape > Colour > Nationality
 c. N > Nationality > Colour > Shape > Size > Quality

(7) *Non-mirror image*

- a. t^havli li-prasino l-italiko
 table.DEF.N the-green.N the-italian.N
 b. ??t^havli l-italiko li-prasino
 table.DEF.N the-italian.N the-green.N
 ‘the green Italian table’

(8) *Mirror image*

- a. t^havli l-italiko l-aχmar
 table.DEF the-italian.N the-red.N
 b. ??t^havli l-aχmar l-italiko
 table.DEF.N the-red.N the-italian.N
 ‘the red Italian table’

What is noteworthy in examples (7) and (8) is that, as we saw earlier, the only difference between the two phrases is that in the first example a borrowed colour term is used, while in the latter the colour term is a native Arabic word. The fact that these are associated with different orders is surprising as adjectives that belong to the same class typically exhibit uniform behaviour. For instance, as was discussed in chapter 2, adjectives in French surface both before and after the noun, yet each position is associated with different classes of adjectives and not with specific lexical items. Colour adjectives and intersective adjectives in general are restricted to the postnominal position as in (9) and (10), while intensional adjectives must be prenominal as shown in (11) and (12).⁵

⁵Intersective adjectives in French can appear prenominally, but as was discussed in chapter 2 they lose their intersective reading.

- (9) a. la voiture blanche
the car white
b. ??la blanche voiture
the white car
- (10) a. la voiture rouge
the car red
b. ??la rouge voiture
the red car
- (11) a. le futur président
the future president
b. *le président futur
the president future
- (12) a. le présumé espion
the alleged spy
b. *l' espion présumé
the spy alleged

In order to account for the orders attested in CMA, I will propose that there are three types of movement in the nominal domain of CMA: Spec-to-Spec NP-movement, roll-up movement, and head movement. I will argue that the motivation for movement stems from maintaining nominality in the extended nominal projection. The complete analysis for CMA adjective ordering is presented in section 5.6. In the following section I turn my attention to the syntax of adjectives in Modern Arabic.

5.3 Modern Arabic

At this point I would like to look at the distribution of adjectives in other varieties of Modern Arabic. Given that CMA is an Arabic dialect, investigating the syntax of adjectives in other Arabic dialects will aid us in drawing parallels between the former and the latter.

Adjectives in Modern Arabic dialects normally occur postnominally, although it is also possible to find prenominal adjectives. The adjectives that appear postnominally must agree with the noun they modify in definiteness, case, number and gender, and they follow the mirror image order (Fassi-Fehri 1999:107). This can be seen in the following examples from Standard Arabic:

- (13) a. l-kitaab-u l-ʔaxḍar-u ʃ-ʃaḡiir-u
the-book-NOM the-green-NOM the-little-NOM
‘the little green book’
- b. ʃaay-un ʃiiniy-un ʔaxḍar-u jayyid-un
tea-NOM Chinese-NOM green-NOM excellent-NOM
‘an excellent green Chinese tea’
- c. ʔ-al‘ab-u bi-l-kurat-i l-kabiirat-i l-jamiilat-i
I-play with-the-ball-GEN the-big-GEN the-beautiful-GEN
‘I play with the beautiful big ball’

(Fassi-Fehri 1999:107, (1)–(3))

In (13a) all adjectives and the noun are marked for definiteness and nominative case, in (13b) they are all indefinite, while in (13c) where the noun appears with genitive case, the adjectives must also appear with genitive marking. That Modern Arabic adjectives appear in a mirror image order becomes apparent when we compare their order to that of the adjectives in the English translation.

Prenominal adjectives are possible, but they come with special interpretational and syntactic properties. As is evident from the examples in (14) prenominal adjectives have a partitive reading. Moreover, the noun in these constructions is always in genitive, while the adjective receives external structural case. This is obvious from the fact that the adjective receives accusative in the first example where it is in object position, but genitive in the second example where it is inside a prepositional phrase. A final difference between postnominal and prenominal adjectives is that the latter are not overtly marked for definiteness, even when these are interpreted as being definite as in the two examples in (14). The noun in these constructions, on the other hand, is marked for definiteness.

- (14) a. ʔakal-tu laḍiida ʔ-ta‘aam-i
ate-I delicious-ACC the-food-GEN
‘I ate the delicious (of the) food.’
- b. yaḥḍutu haadaa fii muxtalif-i l-mayaadiin-i
happens this in various-GEN the-fields-GEN
‘This happens in various fields.’ (literally: in the various of the fields)

(Fassi-Fehri 1999:115, (35) & (37))

Given that prenominal adjectives in Arabic do not behave like typical attributive prenominal adjectives in other languages, in that they do not agree with the head noun, it is reasonable to conclude that these are not attributive and, consequently,

we will not be concerned with their syntax here.⁶ The only real attributive adjectives in Arabic then, are postnominal adjectives. The fact that postnominal adjectives are attributive and can have a direct source of modification instead of an indirect/predicative source, is confirmed by the fact that nonpredicative adjectives are grammatical in a postnominal position:

- (15) a. l-qaatil-u l-maz‘uum-u
 the-killer-NOM the-alleged-NOM
 ‘the alleged killer’
 b. l-mudiir-u s-saabiq-u
 the-director-NOM the-former-NOM
 ‘the former director’
 c. l-xamiis-u l-faarit-u
 the-thursday-NOM the-last-NOM
 ‘last Thursday’

(Fassi-Fehri 1999:110, (16))

Sproat and Shih (1991:583–584) argue that Arabic adjectives do not observe any ordering restrictions and they account for this by proposing that Arabic adjectives are appositive constructions, in which the adjective modifies a full DP not just the head noun. One of the motivations for their analysis is derived from the fact that adjectives can never occur inside a possessive, as shown in (16). The corresponding structure for the phrase in (16) is given in (17a) and the interpretation in (17b).

- (16) a. kitaabu l-waziiri l-aḥmaru
 book the-minister-GEN the-red
 b. *kitaabu l-aḥmaru l-waziiri
 book the-red the-minister-GEN
 ‘the minister’s red book’
 (17) a. [DP [DP book the-minister’s] [the-red]]
 b. ‘the minister’s book, the red one’

In contrast to Sproat and Shih (1991), Shlonsky (2004:1485, fn. 22) notes that the claim that Arabic adjectives are freely ordered is not corroborated in the literature. Indeed, Fassi-Fehri (1999) and Kremers (2003) argue that postnominal adjectives in Arabic obey the mirror image order, and Shlonsky (2004) asserts

⁶For an analysis of prenominal adjectives in Arabic see Kremers 2003. These constructions can be compared to what Danon (2008) calls *Adjectival Construct States* for Hebrew.

the same for both Arabic and Hebrew, as the two behave remarkably similarly with regard to the syntax of the nominal phrase.

Some of my informants, however, who are native speakers of Hebrew and of different dialects of Modern Arabic (Jordanian, Lebanese and Libyan), seem to share the view that adjectives are freely ordered, and that there is no real interpretational contrast between the different orders. As is obvious from the examples in (18) and (19), the first reading where the house is big and old is accessible in any order. This contrasts with English which only allows this reading with the canonical order of adjectives. This generalisation about English was made in section 3.5 of chapter 3, and is also demonstrated below in (20). As for the reading where one adjective takes scope over the combination of the adjective and the noun, this is only accessible to the adjective that is found further away from the noun. As a result, the second reading in the (a) examples in (18) and (19) is ‘the old one among the big houses’, while in the (b) examples it is ‘the big one among the old houses’.

(18) *Hebrew*

- a. kaniti et ha-bait ha-gadol ha-yašan
 bought.1SG ACC the-house the-big the-old
Reading 1: $\lambda x.[\text{old}(\text{house}(x)) \wedge \text{big}(\text{house}(x))]$
Reading 2: $\lambda x.\text{old}(\text{big}(\text{house}(x)))$
- b. kaniti et ha-bait ha-yašan ha-gadol
 bought.1SG ACC the-house the-old the-big
Reading 1: $\lambda x.[\text{old}(\text{house}(x)) \wedge \text{big}(\text{house}(x))]$
Reading 2: $\lambda x.\text{big}(\text{old}(\text{house}(x)))$

(19) *Lebanese Arabic*

- a. ftreet l-beet l-kbiir l’adiim
 bought.1SG the-house the-big the-old
Reading 1: $\lambda x.[\text{old}(\text{house}(x)) \wedge \text{big}(\text{house}(x))]$
Reading 2: $\lambda x.\text{old}(\text{big}(\text{house}(x)))$
- b. ftreet l-beet l’adiim l-kbiir
 bought.1SG the-house the-old the-big
Reading 1: $\lambda x.[\text{old}(\text{house}(x)) \wedge \text{big}(\text{house}(x))]$
Reading 2: $\lambda x.\text{big}(\text{old}(\text{house}(x)))$

(20) a. the big old house

Reading 1: $\lambda x.[\text{old}(\text{house}(x)) \wedge \text{big}(\text{house}(x))]$

Reading 2: $\lambda x.\text{big}(\text{old}(\text{house}(x)))$

- b. the old big house

#Reading 1: $\lambda x.[\text{old}(\text{house}(x)) \wedge \text{big}(\text{house}(x))]$

Reading 2: $\lambda x.\text{old}(\text{big}(\text{house}(x)))$

The flexibility in the ordering of adjectives in Semitic, however, might be the result of adjectives having access to both the direct and indirect source of modification. Cinque (2010:29) claims that the rigidity of the order in English is often obscured by the ability of predicative adjectives to be used either as direct or indirect modifiers.⁷ Fassi-Fehri (1999) provides MSA examples where it is obvious that adjectives which have a predicative source are indeed possible post-nominally, and they are usually found further away from the noun than other adjectives. For instance, when the head noun appears with a complement as in (22), the adjective must appear before the complement if it has a direct source. If, however, the adjective is found after the complement then it can only receive a predicative interpretation:⁸

- (22) a. muḥaarabat-u l-ḥukuumat-i **l-muntaḍarat-u**
fighting-NOM the-government-GEN the-expected-NOM
li-l-irtiṣaa?-i
of-the-corruption
'the expecting fighting of the corruption by the government'
b. muḥaarabat-u l-ḥukuumat-i li-l-irtiṣaa?-i
fighting-NOM the-government-GEN of-the-corruption

⁷For a detailed discussion of this see chapter 3.

⁸Shlonsky (2004:1470–1471) reports a heaviness effect in Hebrew; the adjective is generally found between the noun and the complement as in (21a), but if the AP is phonologically heavy or structurally complex the positioning of the adjective after the complement is not as degraded as with simple adjectives:

- (21) *Hebrew*
a. ha Volvo ha xadaš šel Schneider
the Volvo the new of Schneider
'Schneider's new Volvo'
b. *ha Volvo šel Schneider ha xadaš
the Volvo of Schneider the new
c. ?ha Volvo šel Schneider ha xadaš ve ha mruvax
the Volvo of Schneider the new and the spacious
'Schneider's new and spacious Volvo'

The examples that Fassi-Fehri gives, however, show that both positions are available in MSA, but each position is associated with a different interpretation.

l-muntaḍarat-u

the-expected-NOM

‘the fighting of the corruption by the government, which is expected’

(Fassi-Fehri 1999:111, (20))

Furthermore, in phrases where numerals (both ordinal and cardinal) appear post-nominally, direct modification adjectives must appear to their left, obeying the mirror image order, as in the (a) examples in (23) and (24). If they follow the numerals then the adjectives are obligatorily interpreted as being predicative, which is what we find with the (b) examples.

- (23) a. l-kutub-u **l-faransiyyat-u** l-xamsat-u l-ʔuulaa
the-books-NOM the-French-NOM the-five-NOM the-first
‘the first five French books’
b. l-kutub-u l-xamsat-u l-ʔuulaa **l-faransiyyat-u**
the-books-NOM the-five-NOM the-first the-French-NOM
‘the first five books which are French’

(Fassi-Fehri 1999:111, (31) & (33a))

- (24) a. l-hujuum-u **l-ʔamiriikiyy-u** l-muḥtamal-u
the-attack-NOM the-American-NOM the-probable-NOM
t-taalit-u
the-third-NOM
‘the third probable American attack’
b. l-hujuum-u l-muḥtamal-u t-taalit-u
the-attack-NOM the-probable-NOM the-third-NOM
l-ʔamiriikiyy-u
the-American-NOM
‘the third probable attack, which is American’

(Fassi-Fehri 1999:111, (32) & (33b))

These facts suggest that the apparent freedom in the adjective order in Semitic might indeed be the result of the rightmost adjective being merged inside a reduced relative clause as suggested by Cinque (2010) for indirect modifiers. The flexibility in the ordering of the adjectives in (18) and (19) can, therefore, be accounted for by proposing that in the (a) examples ‘old’ is merged inside a reduced relative clause, which is why it is found in the rightmost position. Accordingly, in the (b) examples the adjective that has a predicative source is ‘big’. Alternatively, it could also be that both of the adjectives in the phrase have an indirect source, in which case the freedom in the order is the outcome of having freely

ordered reduced relative clauses.

If the flexibility in the ordering is the result of merging one or both adjectives as indirect modifiers then we expect that in a phrase where one of the two adjectives is nonpredicative there will be strict ordering. As we see in (25) this is borne out. Even speakers who allow free ordering with two predicative adjectives show strong preference for the order in (25a). Once more, we notice that the adjective which directly modifies the noun is found closer to it, while the predicative adjective, which can have an indirect source, is found further away.

- (25) *Modern Standard Arabic*
- a. l-mudiiru s-saabiqu t-tawiilu
the-director the-former the-tall
 - b. *l-mudiiru t-tawiilu s-saabiqu
the-director the-tall the-former
'the tall former director'

What also becomes clear from the examples in (23) and (24) and is worth noting, is that the mirror image order is obeyed by all Arabic postnominal modifiers. In particular, the order we have witnessed in the above examples is the one in (26b), which is the reverse of the order we find in English. If all modifiers other than adjectives appear in the mirror image order, then this might suggest that the unmarked order of adjectives is also the mirror image order, which is in line with what has been claimed by Fassi-Fehri (1999), Kremers (2003) and Shlonsky (2004).

- (26) a. ordinal \succ cardinal \succ direct mod. A \succ N *Prenominal (English)*
b. N \succ direct mod. A \succ cardinal \succ ordinal *Mirror image (Arabic)*

The question that arises is how the postnominal mirror image order is derived. As was briefly discussed in chapter 2, Cinque (2010) derives this order via roll-up movement. This analysis is also found in Shlonsky 2004. In section 5.6.1 I explore the movement analysis and I also discuss an alternative analysis by Abels and Neeleman (2012) in which modifiers are base generated to the right of the head. For now, however, we turn our attention back to CMA.

5.4 Adjective classes in CMA: morphology and syntax

In order to gain a better understanding of adjective distribution in CMA we need to examine each adjective class individually. In this section it will be shown that there is a correlation between the morphology of an adjective and its syntax – where it is placed with respect to the noun, and also in relation to other adjectives.

I will start the examination of adjective classes in CMA with structurally higher classes of adjectives and then move to the lower classes. To begin with, CMA does not appear to have any intensional adjectives. Concepts like ‘former’ or ‘current’ are expressed analytically in a relative clause as shown below:

- (27) a. muḡtar ta o alok
mukhtar that is now
‘the current Mukhtar’
b. muḡtar ta kan gidam
mukhtar that was before
‘the former Mukhtar’

For this reason, the investigation starts with subjective adjectives.

5.4.1 *Quality and Size*

The classes of Quality and Size consist of native Arabic words, as well as borrowed Greek words which were, however, morphologically nativised. What this means is that while Greek has concatenative morphology, borrowed Greek words that belong to these two classes must follow rules of nonconcatenative morphology. As in other dialects of Arabic, CMA “native” roots are consonantal and are modified by the insertion of vowels when specified for number and gender. For example, in (28) the insertion of /i/ in the root *ybr* (*CC_C*) signifies masculine gender and singular number, /i/ and /e/ in *CC_C_* mark feminine singular and, finally, /a/ in *CC_C* marks plural.⁹

- (28) ‘big’
a. $\sqrt{ybr} \rightarrow ybir.M.SG$
b. $\sqrt{ybr} \rightarrow ybire.F.SG$
c. $\sqrt{ybr} \rightarrow ybar.PL$

⁹There is no gender distinction in plural.

In (29) we observe that the borrowed Greek size adjective for ‘short/low’ is modified for gender and number in a similar manner as ‘big’ above. The Greek root of the adjective is, in fact, *xamil-*, and gender, case and number are marked by suffixation. As Borg (1985:112) observes, however, the Greek root was nativised to the consonantal root χmn .

- (29) ‘short/low’
- a. $\sqrt{\chi mn} \longrightarrow \chi min.M.SG$
 - b. $\sqrt{\chi mn} \longrightarrow \chi mine.F.SG$
 - c. $\sqrt{\chi mn} \longrightarrow \chi man.PL$

Syntactically, adjectives of quality and size tend to be postnominal. This was witnessed in (4), but is also confirmed by the following examples:

- (30) a. $t^h avli$ $k^h aes$
 table.DEF.N nice.DEF.N
- b. $??k^h aes$ $t^h avli$
 nice.DEF.N table.DEF.N
 ‘the nice table’

- (31) a. $t^h avli$ $li-\chi min$
 table.DEF.N the-low.N
- b. $??li-\chi min$ $t^h avli$
 the-low.N table.DEF.N
 ‘the low table’

As we saw in (5a), which is repeated below in (32a), this restriction is lifted when a size adjective appears with a Greek borrowed adjective that has not been nativised. In this case the adjectives can surface either before or after the noun. This is what we also find with a quality adjective as shown in (33). What we notice in the examples below is that the order in which the two adjectives are found is the same both before and after the noun. In other words, the adjectives follow the universal order prenominaly and postnominaly.

- (32) *Size* \succ *Shape*
- a. $li-ybir$ $li-strodzilo$ $t^h avli$
 the-big.N the-round.N table.DEF.N
 - b. $t^h avli$ $li-ybir$ $li-strodzilo$
 table.DEF.N the-big.N the-round.N
 ‘the big round table’

- (33) *Quality* \succ *Shape*
- a. k^haes li-strodʒilo t^havli
 nice.DEF.N the-round.N table.DEF.N
- b. t^havli k^haes li-strodʒilo
 table.DEF.N nice.DEF.N the-round.N
 ‘the nice round table’

When a quality and a size adjective appear together, then the prenominal position is once again degraded. The order in which the two adjectives are found in the postnominal position, however, is still the universal, non-mirror image order:

- (34) *Quality* \succ *Size*
- a. ??k^haes li-γbir t^havli
 nice.DEF.N the-big.N table.DEF.N
- b. t^havli k^haes li-γbir
 table.DEF.N nice.DEF.N the-big.N
 ‘the nice big table’

CMA does not allow more than two adjectives at once, therefore it is not possible to test the order of the above three classes (Quality, Size, and Shape) in the same construction. Nevertheless, what we can conclude from the above examples is that the order set by transitivity is as in (35). This order corresponds to what I consider to be the universal order of adjectives.

- (35) *Quality* \succ *Size* \succ *Shape*

The generalisations that can be made for quality and size classes are thus the following:

- (36) a. They follow rules of nonconcatenative morphology, even if the adjective is a borrowed word.
- b. They surface postnominally, although the presence of a non-nativised Greek borrowed adjective in the same phrase lifts this restriction.
- c. They follow the same order both prenominally and postnominally, which corresponds to the universal order of adjectives.

5.4.2 *Shape and Nationality*

The next two classes we will look at are the intersective classes of Shape and Nationality. I intentionally leave the Colour class out of the discussion due to

the fact that it presents several irregularities, which I will present in detail in a separate section. As for material adjectives, which are also intersective and are ordered lower than Nationality in the universal adjective hierarchy, CMA does not have any. Instead, CMA makes use of prepositional phrases to express material as shown below:

- (37) a. malaga ma l-afut
 spoon with the-wood
 ‘wooden spoon’
 b. pait ma li-yzar
 house with the-stones
 ‘stone house’

Going back to Shape and Nationality, these two classes exclusively consist of adjectives borrowed from Greek. In contrast to what we have seen with borrowed size adjectives, the borrowed adjectives in these classes have retained the Greek concatenative morphology. This becomes evident in (38) and (39). The roots *tetrayon-* and *italik-* remain the same when they are specified for gender and number, and the two features are marked via suffixation.

- (38) ‘square’
 a. $\sqrt{\text{tetrayon}} \rightarrow \text{tetrayono.M/N.SG}$
 b. $\sqrt{\text{tetrayon}} \rightarrow \text{tetrayoni.F.SG}$
 c. $\sqrt{\text{tetrayon}} \rightarrow \text{tetrayona.N.PL}$
 (39) ‘italian’
 a. $\sqrt{\text{italik}} \rightarrow \text{italiko.M/N.SG}$
 b. $\sqrt{\text{italik}} \rightarrow \text{italiki.F.SG}$
 c. $\sqrt{\text{italik}} \rightarrow \text{italika.N.PL}$

As demonstrated in (40) and (41) adjectives of shape and nationality are free to appear in either a prenominal or a postnominal position. Both positions are acceptable and there are no interpretational differences between the two positions.

- (40) a. ^htetrayono ^htavli
 square.DEF.N table.DEF.N
 b. ^htavli ^htetrayono
 table.DEF.N square.DEF.N
 ‘the square table’

- (41) a. l-italiko t^havli
the-italian.N table.DEF.N
b. t^havli l-italiko
table.DEF.N italian.N
‘the italian table’

Adjectives that belong to these two classes follow the same ordering as quality and size adjectives. In other words, their ordering $\text{Shape} \succ \text{Nationality}$ remains unchanged regardless of whether they surface before or after the noun:

- (42) *Shape* \succ *Nationality*
a. t^hetrayono l-italiko t^havli
square.DEF.N the-italian.N table.DEF.N
b. t^havli t^hetrayono l-italiko
table.DEF.N square.DEF.N the-italian.N
‘the square italian table’

- (43) *Nationality* \succ *Shape*
a. *l-italiko t^hetrayono t^havli
the-italian.N square.DEF.N table.DEF.N
b. ??t^havli l-italiko t^hetrayono
table.DEF.N the-italian.N square.DEF.N
‘the square italian table’

A summary of the morphological and syntactic properties of Shape and Nationality classes is given below:

- (44) a. They consist of borrowed adjectives which have kept the Greek concatenative morphology.
b. They are equally acceptable before and after the noun.
c. They follow the same order both prenominal and postnominal, which corresponds to the universal order of adjectives.

5.4.3 *Colour*

The Colour class in CMA presents an interesting problem as not all adjectives that belong to this class behave similarly. To begin with, it only consists of three native Arabic colour terms which are the terms for ‘black’, ‘white’ and ‘red’,

while all other terms have been borrowed from Greek.¹⁰ The fact that the only native adjectives in this class are specifically these three colour terms, and not any other three colour terms, follows directly from typological findings on colour universals. Berlin & Kay (1991) argue that if a language only contains three colour terms, then these terms will be for white, black and red. The forms of the three native colours in CMA are given in (45). We observe that the consonantal root is modified when specified for number and gender, in the same manner as quality and size adjectives.

(45)	a.	aχmar red.M.SG 'red'	χamra red.F.SG	χumr red.PL
	b.	isfet black.M.SG 'black'	sauta black.F.SG	sut black.PL
	c.	apcað white.M.SG 'white'	peða white.F.SG	pið white.PL

Borrowed colour adjectives, on the other hand, pattern with shape and nationality adjectives as they mark gender and number by suffixation. This is demonstrated in (46) with the adjective 'green'.

(46)	'green'
	a. $\sqrt{\text{prasin}} \rightarrow \text{prasino.M/N.SG}$
	b. $\sqrt{\text{prasin}} \rightarrow \text{prasini.F.SG}$
	c. $\sqrt{\text{prasin}} \rightarrow \text{prasina.N.PL}$

If we look at the placement of the colour terms in relation to the noun, again we find that native terms pattern with adjectives of quality and size, while the behaviour of borrowed colour terms corresponds to shape and nationality adjectives. This means that the former must appear postnominally, as indicated in (47), and the latter are equally acceptable both before and after the noun, something that is evident from (48).

¹⁰Borg (2004:84, 2011:77) claims that CMA has five native words for colour, the two additional terms being *χoðer*.M.SG 'green' and *asfar*.M.SG 'yellow'. However, according to my informants, *χoðer* is restricted to the meaning 'fresh/unripe' and *asfar* conveys the meaning 'pale'. Borg (2004:85) points out that these additional meanings of *asfar* and *χoðer* are shared in many other Arabic dialects. Nevertheless, it appears that in CMA these two terms are limited to the non-colour meanings, and native speakers use the Greek terms for yellow and green instead. As a result, when *asfar* and *χoðer* are used in CMA, they appear as Quality adjectives.

- (47) a. t^havli l-aχmar/l-isfet/l-apcað
table.DEF.N the-red/the-black/the-white.N
b. *l-aχmar/l-isfet/l-apcað t^havli
the-red/the-black/the-white.N table.DEF.N
'the red/black/white table'
- (48) a. t^havli li-prasino/li-tfitrino/li-ble
table.DEF.N the-green/the-yellow/the-blue.N
b. li-prasino/li-tfitrino/li-ble t^havli
the-green/the-yellow/the-blue.N table.DEF.N
'the green/yellow/blue table'

The presence of a borrowed Greek adjective in the same phrase as a native colour term does not make the prenominal position accessible to the native colour term, in any order. This contrasts with the distribution of quality and size adjectives:

- (49) a. ??li-strodzilo l-aχmar/l-isfet/l-apcað t^havli
the-round.N the-red/the-black/the-white.N table.DEF.N
b. *l-aχmar/l-isfet/l-apcað li-strodzilo t^havli
the-red/the-black/the-white.N the-round.N table.DEF.N
'the round red/black/white table'

A further departure from the behaviour of quality and size adjectives is related to the ordering of native colour terms. If we look at the ordering of native colour adjectives and a nationality adjective in (50), we notice that the preferred one is the mirror image order. This is unexpected as all other classes of adjectives in CMA surface in the non-mirror image order postnominally.

- (50) a. ??t^havli l-aχmar/l-isfet/l-apcað l-italiko
table.DEF.N the-red/the-black/the-white.N the-italian.N
b. t^havli l-italiko l-aχmar/l-isfet/l-apcað
table.DEF.N the-italian.N the-red/the-black/the-white.N
'the red/black/white Italian table'

On the other hand, borrowed colour terms not only can appear prenominal, but they also emerge in the same order prenominal and postnominally. This means that borrowed colour adjectives follow the universal order both prenominal and postnominally, as all other adjectives in CMA apart from native colour terms. This is demonstrated in (51) and (52).

- (51) a. t^havli li-prasino/li-tfitrino/li-ble l-italiko
 table.DEF.N the-green/the-yellow/the-blue.N the-italian.N
 b. ??t^havli l-italiko li-prasino/li-tfitrino/li-ble
 table.DEF.N the-italian.N the-green/the-yellow/the-blue.N
 ‘the green/yellow/blue Italian table’
- (52) a. li-prasino/li-tfitrino/li-ble l-italiko t^havli
 the-green/the-yellow/the-blue.N the-italian.N table.DEF.N
 b. *l-italiko li-prasino/li-tfitrino/li-ble t^havli
 the-italian.N the-green/the-yellow/the-blue.N table.DEF.N
 ‘the green/yellow/blue Italian table’

To summarise what we have seen so far, the available orders for colour and nationality adjectives in CMA are the ones given in (53). Borrowed Greek colour adjectives always appear to the left of nationality adjectives regardless of whether they appear before or after the noun, while native Arabic colour adjectives can only appear postnominally in the mirror image order.

- (53) *Ordering of Colour and Nationality*
- a. Colour_{Greek} > Nationality > N
 b. N > Colour_{Greek} > Nationality
 c. N > Nationality > Colour_{Arabic}

The ordering of native colour adjectives becomes even more perplexing when we look at how these are ordered with adjectives that are structurally higher. So far, we have only examined how these are ordered with respect to nationality adjectives. According to the universal adjective order, which is repeated in (54), nationality adjectives are found lower than the merging position of colour adjectives. When we look at higher classes such as Shape in (55) and Size in (56) we notice that the mirror image order is no longer observed and the adjectives appear in the universal order.

- (54) *Universal adjective order:*
 Quality > Size > Shape > Colour > Nationality
- (55) a. t^havli li-strodzilo l-aχmar/l-isfet/l-apcað
 table.DEF.N the-round.N the-red/the-black/the-white.N
 b. ??t^havli l-aχmar/l-isfet/l-apcað li-strodzilo
 table.DEF.N the-red/the-black/the-white.N the-round.N
 ‘the round red/black/white table’

- (56) a. t^havli li-ybir l-aχmar/l-isfet/l-apcað
 table.DEF.N the-big.N the-red/the-black/the-white.N
- b. ??t^havli l-aχmar/l-isfet/l-apcað li-ybir
 table.DEF.N the-red/the-black/the-white.N the-big.N
 ‘the big red/black/white table’

The overall picture that emerges so far is summarised in table 5.1. For the sake of simplicity, I make a distinction between Colour_{Greek} and Colour_{Arabic} and do not list them as a single class. It is evident from this table that the classes which only consist of borrowed Greek adjectives with concatenative morphology exhibit uniform syntactic behaviour; they can access the prenominal position, and the order they follow corresponds to the universal order of adjectives. Quality and Size, which follow rules of nonconcatenative morphology, can access the prenominal position only when they appear with another adjective that is borrowed from Greek. In other words, a shape, nationality or a Greek colour adjective. With regard to their ordering, they too adhere to the universal order. Finally, Colour_{Arabic} adjectives must be postnominal. They follow the universal order most of the times, but when they appear with a nationality adjective they surface in the mirror image order.

Table 5.1: Morphology and Syntax of CMA adjectives

	Morphology	Prenominal	Order
Shape	concatenative	yes	universal
Nationality	concatenative	yes	universal
Colour_{Greek}	concatenative	yes	universal
Quality	nonconcatenative	only with +A _{Greek}	universal
Size	nonconcatenative	only with +A _{Greek}	universal
Colour_{Arabic}	nonconcatenative	no	mirror image (<i>Nation.</i>) universal elsewhere

The conclusion drawn is that there is a three-way distinction in the syntax of CMA adjective classes. Shape, Nationality and Colour_{Greek} follow the same rules, Quality and Size also behave alike, and, finally, Colour_{Arabic} does not pattern with any of the two.

5.5 What CMA adjective ordering is not

Before presenting the analysis for deriving the attested adjective orders in CMA I will compare the CMA data to other languages that exhibit similar (in)flexibilities in the ordering and placement of adjectives. The two obvious languages that CMA should be compared to are Modern Arabic and Greek as it is a dialect of the former, and has been extensively influenced by the latter due to language contact. The third comparison is drawn between Welsh and CMA, as postnominal adjectives in Welsh either appear in the mirror image order or the universal order. It will be shown is that while there are some similarities between CMA and these languages, the CMA facts seem to be unique.

5.5.1 CMA vs. Modern Arabic

The facts elucidated from our exploration of Arabic so far lead us to conclude that adjective ordering and placement in CMA does not pattern with that of other Modern Arabic dialects. The most obvious difference has to do with the fact that some adjectives in CMA can appear prenominal. While adjectives in Modern Arabic can also appear prenominal, we have seen that they come with different syntactic and morphological properties than postnominal adjectives. The fact that prenominal adjectives in Modern Arabic differ from prenominal adjectives in CMA is verified by the lack of the definite article in the former, even when the phrase is definite. Prenominal adjectives in CMA obligatorily come with a definite article when they are definite, just as they do when they are postnominal:^{11,12}

(57) *Modern Arabic*

- a. (*l-)kabiir-u l-sinn-i
the-large-NOM the-age-GEN
'the old (of) age'
- b. al-bayt-u *(l)-kabiir-u
the-house-NOM the-large-NOM
'the large house'

¹¹As was mentioned in footnote 2, the definite article is assimilated when the following word begins with a single non-plosive consonant, which means that an adjective like *ḡabra* 'red' must appear without the definite article in a definite environment. This, however, is not related to whether the adjective is prenominal or not as assimilation occurs in either position.

¹²As is evident from the examples, another property of these constructions in Modern Arabic is that the noun must appear in genitive. In CMA we cannot test whether the noun is in genitive as there is no overt case marking. Nevertheless, the absence of the definite article and the distinct interpretation that comes with prenominal adjectives in Modern Arabic are proof that this is not the same construction as the one we find with prenominal adjectives in CMA.

- (58) *CMA*
- a. *(li)-prasino t^havli
the-green table
 - b. t^havli li-prasino
table the-green

There are, however, parallels that can be drawn between postnominal adjectives in Arabic and the nonconcatenative adjective classes in CMA. The first has to do with the fact that these classes favour the postnominal position. Moreover, when native colour adjectives in CMA appear with a nationality adjective these will surface in the mirror image order which, as we have seen in section 5.3, is the canonical order for direct modifiers in Modern Arabic.

However, the canonical ordering of adjectives with all other classes in CMA seems to follow the universal order rather than the mirror image order. In (19), repeated below, we saw that the universal order is also observed in Modern Arabic, but this was attributed to the fact that these adjectives are predicative and they, therefore, have the option of being merged as indirect modifiers. This would account for the flexibility in their ordering.

- (19) *Lebanese Arabic*
- a. ftreet l-beet l-kbiir l-'adiim
bought.1SG the-house the-big the-old
Reading 1: $\lambda x.[\text{old}(\text{house}(x)) \wedge \text{big}(\text{house}(x))]$
Reading 2: $\lambda x.\text{old}(\text{big}(\text{house}(x)))$
 - b. ftreet l-beet l-'adiim l-kbiir
bought.1SG the-house the-old the-big
Reading 1: $\lambda x.[\text{old}(\text{house}(x)) \wedge \text{big}(\text{house}(x))]$
Reading 2: $\lambda x.\text{big}(\text{old}(\text{house}(x)))$

Considering that the canonical order of adjectives in Modern Arabic is the mirror image order then, it seems that the only adjective class in CMA which patterns with Modern Arabic is that of *Colour_{Arabic}*: it is strictly postnominal and it appears in the mirror image order (at least with nationality adjectives). This speculation will become relevant to the analysis in section 5.6.

5.5.2 CMA vs. Greek polydefinites

A characteristic that Greek polydefinites and CMA definite adjectives seem to share at first glance, is that the definite article appears before each adjective and the noun.¹³ This is not only found in CMA but is instantiated in other Arabic dialects as well:

- | | | | |
|------|----|--|---------------------------|
| (59) | a. | to trapezi to xamilo
the table the low
‘the low table’ | <i>Greek Polydefinite</i> |
| | b. | li -tsan li -tvil
the-man the-long
‘the tall man’ | <i>CMA</i> |
| | c. | al -kitab al -aḥmar
the-book the-red
‘the red book’ | <i>Standard Arabic</i> |

In chapter 4 I argued that the multiple definite articles in Greek polydefinites are not true articles, but the spell-out of a predication operator. In CMA and other Arabic dialects, however, the realisation of multiple definite articles is the result of definiteness agreement. Where CMA differs from other Arabic dialects, is that adjectives in the latter are strictly postnominal whereas CMA also permits prenominal adjectives with most classes. As we have seen in chapter 4, Greek adjectives that appear in polydefinite constructions are also free to appear either before or after the noun. The question that arises is whether we can analyse adjectives that appear both prenominally and postnominally in CMA as polydefinites. Given that the adjectives which tend to appear prenominally are predicative adjectives that have been borrowed from Greek and still obey rules of Greek morphology, it is reasonable to expect that their syntax will be analogous to Greek adjective syntax.

However, if we compare the ordering of the Greek adjective classes in CMA (Shape, Nationality, Colour_{Greek}) to the ordering of adjectives in polydefinites, we notice that it is not as flexible. The two adjectives and the noun in the polydefinite constructions in (60) can appear in any of the six possible orders, and all orders are unmarked.

¹³The reader is referred to chapter 4 for a detailed description and analysis of Greek polydefinites.

- (60) *Greek polydefinites*
- a. to trapezi to tetrayono to kineziko
the table the square the Chinese
 - b. to trapezi to kineziko to tetrayono
the table the Chinese the square
 - c. to tetrayono to kineziko to trapezi
the square the Chinese the table
 - d. to kineziko to tetrayono to trapezi
the Chinese the square the table
 - e. to tetrayono to trapezi to kineziko
the square the table the Chinese
 - f. to kineziko to trapezi to tetrayono
the Chinese the table the square

The data in (61) contrasts with (60) as there are only two unmarked orders out of the possible six for Greek CMA adjectives. These are the orders that correspond to the universal order of adjectives. The mirror image order in (61b) is degraded, while the reverse prenominal order in (61d) is completely unacceptable. The orders in which one adjective is prenominal and another postnominal are acceptable, but come with a marked reading, whereby the prenominal adjective is obligatorily focussed.

- (61) *Greek CMA adjectives*
- a. t^havil t^hetrayono l-italiko
table.DEF.N square.DEF.N the-Italian.N
 - b. ??t^havil l-italiko t^hetrayono
table.DEF.N the-Italian.N square.DEF.N
 - c. t^hetrayono l-italiko t^havil
square.DEF.N the-Italian.N table.DEF.N
 - d. *l-italiko t^hetrayono t^havil
the-Italian.N square.DEF.N table.DEF.N
 - e. #t^hetrayono t^havil l-italiko
square.DEF.N table.DEF.N the-Italian.N
 - f. #l-italiko t^havil t^hetrayono
the-Italian.N table.DEF.N square.DEF.N

These observations are summarised in table 5.2. It is evident is that the ordering is much more flexible in polydefinite constructions while it is quite restricted with Greek CMA adjectives. For this reason, to analyse the three Greek classes

Table 5.2: Comparing the orders of Greek Polydefinites and Greek CMA As

	Greek Polydefinites	Greek CMA As
N \succ Shape \succ Nationality	✓	✓
N \succ Nationality \succ Shape	✓	??
Shape \succ Nationality \succ N	✓	✓
Nationality \succ Shape \succ N	#	*
Shape \succ N \succ Nationality	✓	#
Nationality \succ N \succ Shape	✓	#

as instances of polydefinites does not seem to be a valid option.

5.5.3 CMA vs. Welsh

The final comparison is drawn between CMA and Welsh. First, let us look at adjective ordering in Welsh, where adjectives are predominantly postnominal. What is interesting is that while most adjective classes follow the universal order, adjectives of quality and age surface in the mirror image order. This contrast is shown below:

(62) *Universal order (Size \succ Colour \succ Nationality)*

- a. cwpan mawr gwyrdd Sieineaidd
 cupr big green Chinese
 ‘a big green Chinese cup’

(Rouveret 1994:213)

- b. ci mawr du Dafydd
 dog big black Dafydd
 ‘Dafydd’s big black dog’

(Willis 2006:1808, (1b))

(63) *Mirror image order (Age \succ Quality)*

- a. caneuon newydd gwyh
 songs new great
 ‘great new songs’
- b. athro ifanc hoffus
 teacher young likeable
 ‘a likeable young teacher’

(Willis 2006:1817, (24))

The above data can be compared to CMA, since most adjectives in direct modification follow the universal order with the exception of colour_{Arabic} adjectives and nationality adjectives which must appear in the mirror image order. The Welsh orders in (62), however, become more flexible when scope is involved. If an adjective scopes over another adjective and the noun, then the first adjective has to be found to the right of N+A. As is obvious from the English translations in the examples in (64), the modifiers in this case appear in the mirror image order. The adjective that takes wide scope is marked in bold.

- (64)
- a. acen Saesneg **gref**
 accent English strong
 ‘strong English accent’
 - b. bardd ifane **addawol**
 poet young promising
 ‘a promising young poet’
 - c. ryg Twrcaidd **coch**
 rug Turkish red
 ‘a red Turkish rug’
 - d. to crwn **uchel**
 roof round high
 ‘a high round roof’

(Willis 2006:1818, (25))

Another property of Welsh which is worth noting is that other modifiers which are generally assumed to be merged higher than attributive adjectives in the extended nominal projection (e.g. comparatives, superlatives, demonstratives) must always appear in the mirror image order. This means that they have to follow attributive adjectives as shown in (65).

- (65) *Welsh*
- a. N > A > Comparatives/Superlatives
 - b. N > A > Dem

Interestingly, even if demonstratives and comparatives/superlatives emerge in the mirror image order in Welsh, the adjectives which appear in the same phrase will still be found in the universal order as demonstrated in the examples in (66). We, therefore, find a mixture of the two orders in the same phrase.

$$(66) \quad N \succ \overbrace{\text{Colour} \succ \text{Nationality}}^{\text{Universal}} \succ \text{Superlative/Dem}$$

Mirror image

- a. y cwpan gwyrdd Sieineaidd mwyaf
 the cup green Chinese biggest
 ‘the biggest green Chinese cup’

(Willis 2006:1819, (28a))

- b. y cwpan gwyrdd Sieineaidd hwn
 the cup green Chinese this
 ‘this green Chinese cup’

The question that arises is whether the relative freedom in the ordering of attributive adjectives in Welsh is related to the direct vs. indirect distinction. This does not seem to be the case. Willis shows that adjectives which come with a reading that is associated with the indirect/predicative source of modification are found to the right of superlatives as illustrated in the contrastive examples in (67).¹⁴ Taking into account that the adjectives which appear in the universal order in (66) are found to the left of the superlative, we can assume that these have a direct source of modification.

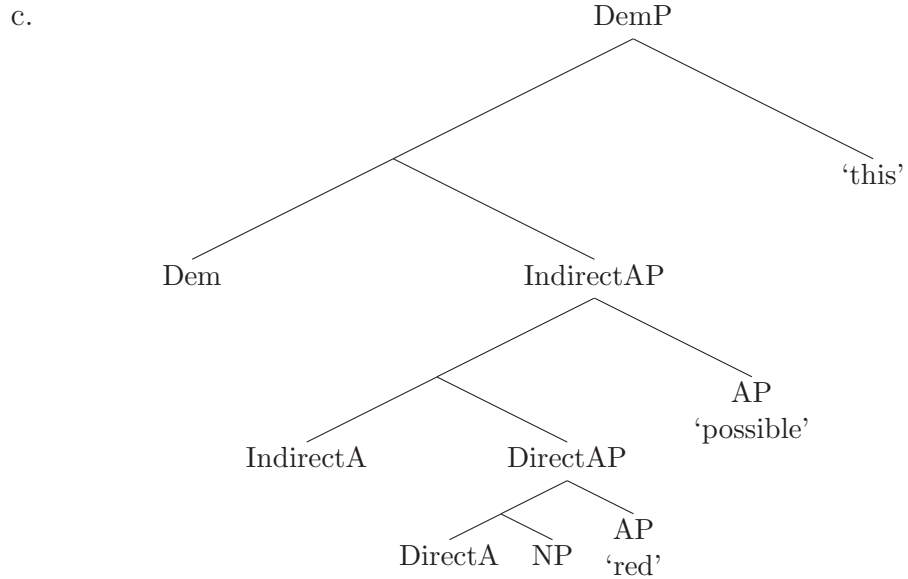
- (67) a. Hwn yw 'r safle **gorau** **posib**. *indirect*
 This is the site best possible
 ‘This is the best possible site (the best site that there could possibly be).’
- b. Hwn yw 'r safle **posib** **gorau**. *direct*
 This is the site possible best
 ‘This is the best possible site (best of the potential/available sites).’

(Willis 2006:1825, (47))

In order to account for the ordering phenomena observed in Welsh, Willis adopts a symmetric analysis where heads are merged to the left but specifiers to the right. Modifiers are merged inside the specifiers, and they follow the same hierarchy as languages with prenominal modifiers. As represented in the simplified tree in (68c), this analysis derives the mirror image order of modifiers in Welsh.

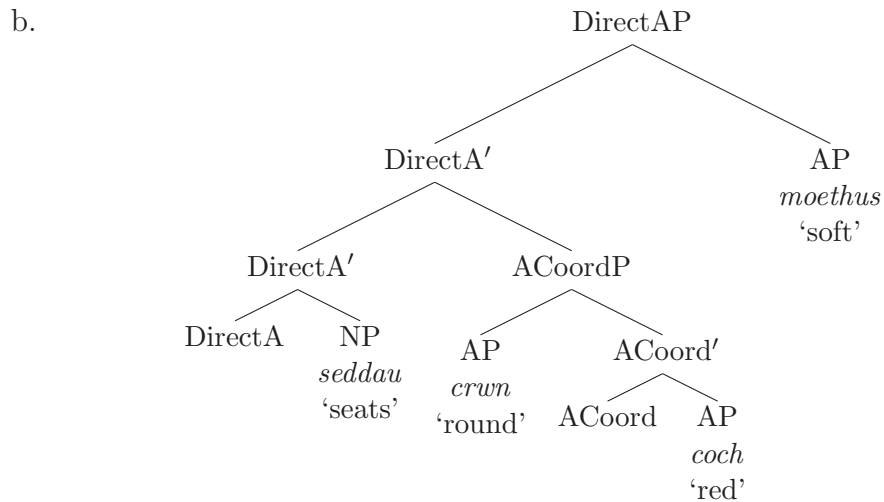
- (68) a. Dem \succ Indirect mod. A \succ Direct mod. A \succ N *English*
 b. N \succ Direct mod. A \succ Indirect mod. A \succ Dem *Welsh*

¹⁴These readings are comparable to the English and Italian readings of examples (81)–(84) in chapter 2.



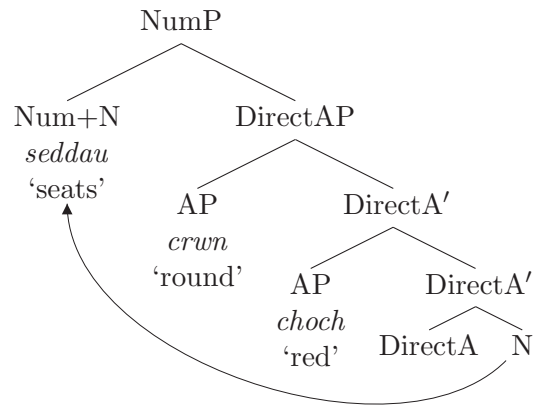
What still needs to be resolved is how the universal order of adjectives in direct modification is derived. Willis proposes two possible solutions. In the first one, adjectives in direct modification join together to form a larger constituent as schematised in (69b) (Willis' (68)). This does not affect the mirror image order of other modifiers as the rest of the structure remains the same as in (68c).

- (69) a. *seddau crwn coch moethus*
 seats round red soft
 'soft round red seats'



The alternative proposal is one where direct modification adjectives are merged as left branched adjuncts. Their postnominal position is derived via head movement of the noun to a head above direct modification adjectives as schematised in (70). The rest of the modifiers are still generated to the right as was shown in (68c).

(70)



The fact that age and quality adjectives appear in the mirror image order but all other direct modification adjectives in the universal order, is still unaccounted for. This is the set of data that interests us the most, as we find something similar with CMA adjectives. Willis does not consider age and quality in his analysis, but he speculates that the reason these two classes of adjectives appear in the mirror image order is because adjectives of quality are typically interpreted with scope over age adjectives (Willis 2006:1818, fn. 12). As we saw in (64), if one adjective scopes over another adjective and the noun, then the former adjective will have to appear to the right of the noun and the adjective it scopes over. In other words, it will appear in the mirror image order.

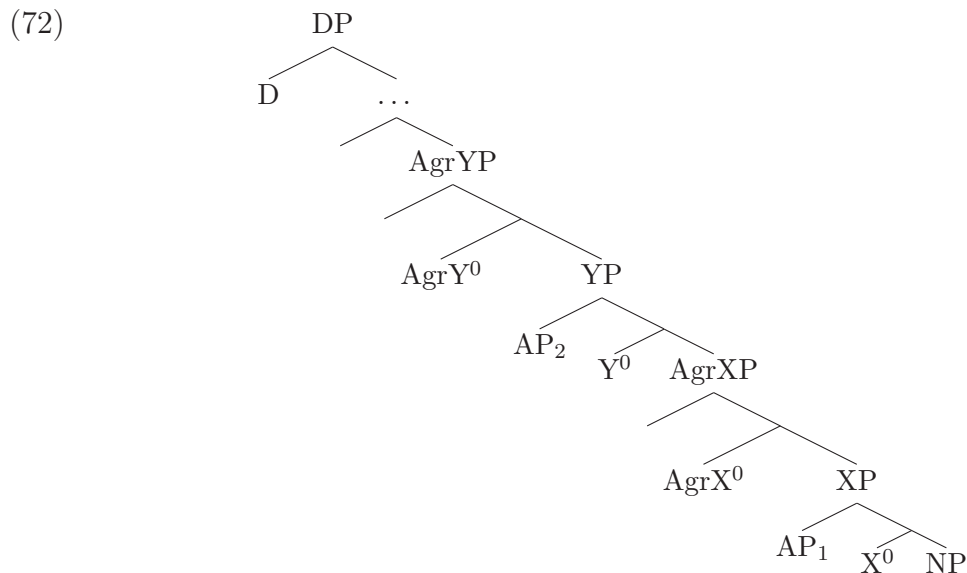
What is puzzling, however, is why scope should affect the order of direct modification adjectives, especially if these are merged as in (70) where the scope effects follow directly from the structure. Given that ‘round’ is merged higher than ‘red’, then the former should be able to scope over the latter. Willis does not address this problem. Nevertheless, if scope is indeed what forces the mirror image order of direct modifiers in Welsh, we can conclude that adjective ordering in CMA does not pattern with Welsh. This is because in the two examples below the colour adjective always scopes over the nationality adjective, even though in (71a) the two adjectives are found in the universal order, and in (71b) in the mirror image order.

- (71) a. t^havli li-tfitrino l-italiko
table.DEF.N the-yellow.N the-italian.N
‘the yellow Italian table’
- b. t^havli l-italiko l-apcað
table.DEF.N the-italian.N the-white.N
‘the white Italian table’

The discussion in this section leads to the conclusion that although there are clear parallels to be drawn between the above three languages and CMA, none of these languages behaves similarly enough to CMA. Consequently, a novel analysis is required in order to capture the facts in CMA.

5.6 Deriving the orders

The analysis presented in this section is based on the assumption that movement is responsible for deriving variation in the nominal phrase. As stated in previous chapters, I follow Cinque (1994) in assuming that adjectives are generated in the Spec of dedicated functional heads which are hierarchically merged. The base structure I adopt, which conforms to Kayne's (1994) antisymmetric model, is represented below:



As is evident from the structure in (72) I presume that adjectives in CMA are phrasal.¹⁵ This assumption stems from the fact that adjectives in Semitic can appear as the head of a construct state, which suggests that they are able to modify the noun as something larger than just a head. Modern Arabic examples of adjectival construct states were given in (14), repeated below. Following Danon

¹⁵In section 3.3, chapter 3, I argued that direct modification adjectives can modify the noun either as heads or phrases. However, I put head adjectives aside for the purposes of this chapter as my proposal that there are two sources of direct modification adjectives needs more investigation with postnominal adjectives. While I have tested the distribution of CMA adjectives with *χtir* ‘very’ the results were unclear, as definiteness inflection (*li-*) would sometimes, but not always, appear on the intensifier. As a result, the distribution of adjectives with *χtir* cannot be used as a diagnostic, and I have to leave this issue for future research.

(2008), I take adjectival construct states to be analysed as an AP where the NP in genitive is the complement of A⁰. In the Hebrew example in (73), which again involves an adjectival construct state, it is evident that the construct state is not only able to modify the head noun ‘man’, but it also appears postnominally which is the canonical position of adjectival modifiers.

- (14) a. ?akal-tu laḏiida t-ṭa‘aam-i
 ate-I delicious-ACC the-food-GEN
 ‘I ate the delicious (of the) food.’
- b. yaḥduṭu haadaa fii muxtalif-i l-mayaadiin-i
 happens this in various-GEN the-fields-GEN
 ‘This happens in various fields.’
 (literally: in the various of the fields)

(Fassi-Fehri 1999:115, (35) & (37))

- (73) pagašti et ha-iš [AP švur [NP ha-ecba]]
 met.1SG ACC the-man broken the-finger
 ‘I met the man who has a broken finger.’

(Danon 2008:880, (15a))

Another characteristic of Semitic attributive adjectives which could suggest that they do not modify the noun as heads but as phrases, is that they always carry an article when definite. However, without going into any detail, I do not take the definite article in Semitic to be the realisation of D⁰ or of another syntactic head. Instead, I consider it to be a morphological agreement marker as argued by Siloni (1997), Borer (1999), and Danon (2001, 2008), among others. The main reason for this is that it does not seem to contribute anything to the semantics of definiteness, but rather, it shows up as an agreement marker paralleling ϕ -features.

Any attested order that does not correspond to the base structure in (72) I assume is derived via movement, as argued by Cinque (1994, 2005, 2010), Shlonsky (2004), Laenzlinger (2005), and others. According to Cinque (2005, 2010), in order to derive all the cross-linguistically possible orders of modifiers in the nominal domain, movement must be phrasal. In particular, Cinque employs two types of movement: roll-up and Spec-to-Spec NP-movement. The latter type of movement is responsible for deriving the non-mirror image postnominal (or N-medial) order in which adjectives appear in the universal order. Given that the NP moves cyclically from one Spec,AgrP to another Spec,AgrP, the order of the

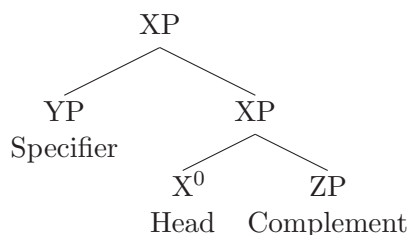
modifiers will not be affected. As for the mirror image order, this is derived via roll-up. The following section is concerned with roll-up movement, and with the deeper question of what kind of theoretical systems are able to derive the mirror image order. The discussion begins with the movement analysis, and continues with a symmetric analysis put forth by Abels and Neeleman (2012).

5.6.1 Deriving the mirror image order

5.6.1.1 Roll-up movement

Shlonsky (2004), in accordance with Cinque (1994, 2009, 2010), adopts the hypothesis that phrasal constituents appear in a fixed order that is defined by Universal Grammar. In the case of modifiers in the extended nominal projection, the assumption is that their base position is before the noun and they follow Kayne's (1994) Linear Correspondence Axiom (LCA), where the universal underlying order is assumed to be Specifier \succ Head \succ Complement:

(74)



Variation in the order of (74) is derived via movement, which is always leftward. Given that the landing site of a moved constituent must c-command the launching site, the landing site will have to be higher than the extraction site. Rightward movement in (74) would only result in moving items lower in the structure, and is, consequently, excluded.¹⁶

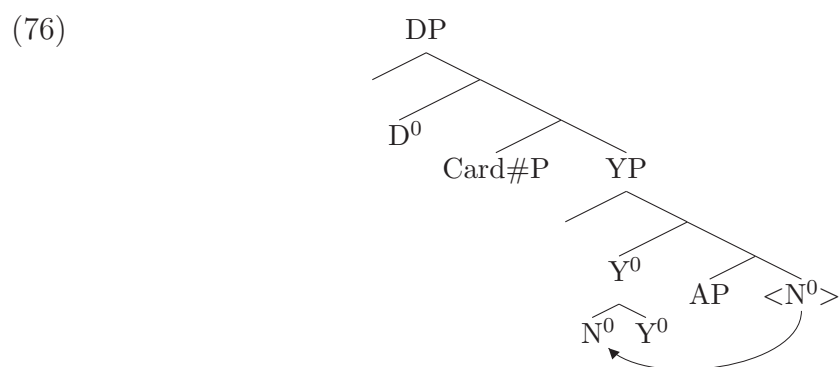
In Semitic, therefore, where the noun appears to the left of most modifiers, movement is responsible for deriving the correct word order. A possible way of generating the postnominal order in Semitic is by raising the head N to a position left of the adjectives, for instance to D^0 , along the lines of what Longobardi (1994, 2001) has claimed for Romance. Nevertheless, Shlonsky argues that it is unclear why the definite article is still present in Semitic if there is indeed N^0 -to- D^0 movement. If the head D^0 is already lexically filled, then movement should be

¹⁶However, see Abels and Neeleman (2012) who argue that the LCA cannot derive the Specifier–Head–Complement hypothesis, and as a result, the ban on rightward movement needs to be motivated independently.

blocked as is the case with I⁰-to-C⁰ movement when a complementiser is present. Siloni (1997) gets around this problem by suggesting that D⁰ is an affix with strong features that attracts the noun. If this is the correct analysis then we expect that nothing will be able to intervene between N⁰+D⁰. While intervening adjectives or genitive PPs are indeed prohibited, cardinal numbers are able to appear between the article and the noun in some Arabic dialects. This is shown in (75) (Shlonsky's (21)).

- (75) a. el xamas banaat *Cairo*
 the five girls
 b. l xams ʾrʒal *Damascus*
 the five men

What the above examples suggest is that if partial N-raising is involved in deriving the postnominal order in Semitic, then the head will raise past the adjectives, but it will have to stay lower than D⁰ and Card#P, which is where Shlonsky assumes that cardinal numbers are merged. The structure would roughly look as in (76).



However, partial N-raising appears to encounter a problem when we consider the order of both ordinal and cardinal numbers. While, according to Shlonsky, the base/hierarchical order is Ord# > Card# > N, the order that we find in Hebrew is Card# > N > Ord#:¹⁷

- (77) *Hebrew*
 a. šaloš simfoniot rišonot
 three symphonies first
 ‘first three symphonies’

(Shlonsky 2004:1478, (31))

¹⁷In (23) we saw that the order in MSA is N > Card# > Ord#.

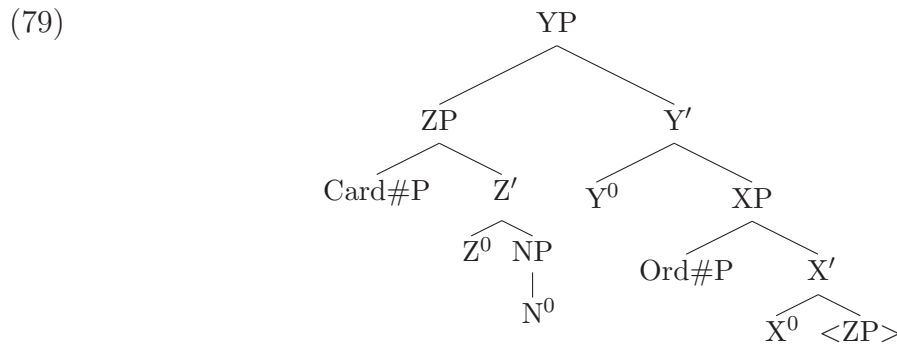
- b. *rišonot simfoniot šaloš
 first symphonies three

While Shlonsky does not discuss the order of cardinal and ordinal numerals in English, it is worth noting that both orders are acceptable, but they come with different readings. For example, in (78a) *first* scopes over *two*, while in (78b) we find the opposite scope reading.

- (78) a. The **first two** people to walk on the moon were Neil Armstrong and Buzz Aldrin.
 b. The **two first** people to walk on the moon were Neil Armstrong and Buzz Aldrin.

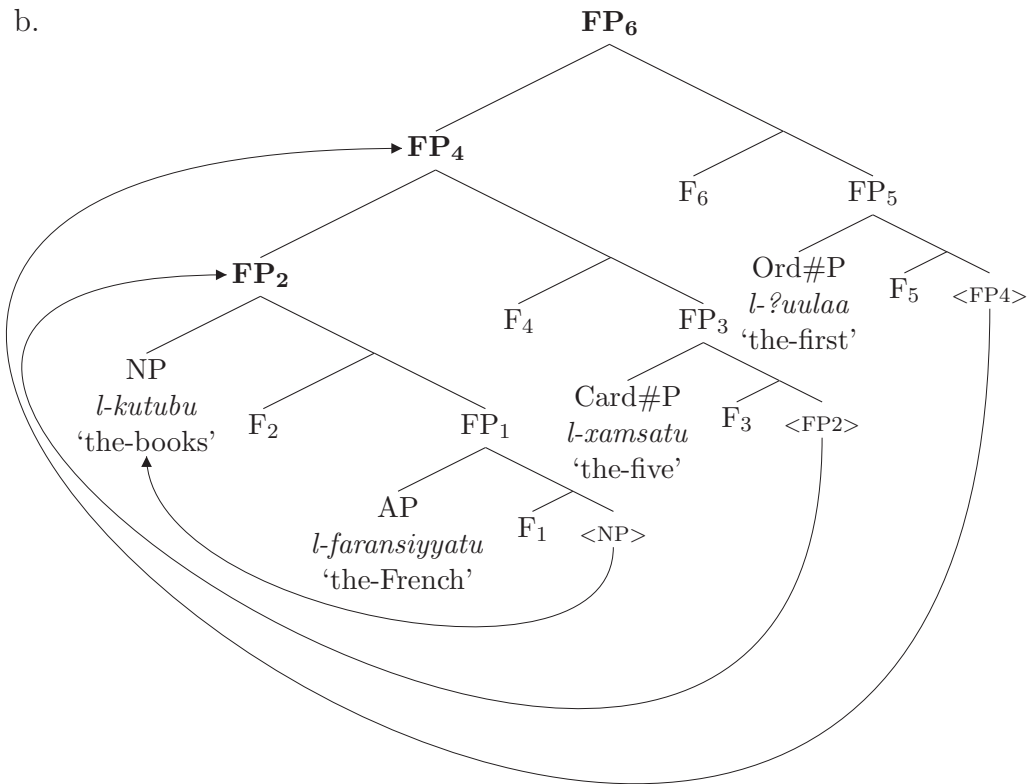
In contrast, the order in Hebrew remains the same (Card# > N > Ord#) even in contexts where the cardinal takes scope over the ordinal. Simple N-raising is therefore not able to generate the Hebrew order, unless the Card#P in Hebrew is higher than Ord#P. However, there are two objections to this idea; firstly, introducing a distinct order for Hebrew goes against the idea of a restricted grammar, and secondly, if cardinals are structurally higher than ordinals, then it is surprising that the preferred scope reading for (77a) is the one where the ordinal scopes over the cardinal.

Drawing from the above facts, Shlonsky argues that the movement that captures the word order phenomena in the Semitic nominal phrase is phrasal with pied-piping (roll-up). By adopting this type of movement it is now possible to derive the Hebrew order in which cardinal numbers appear before ordinal. If Card#P and Ord#P are each merged in the Spec of a dedicated functional projection and the base order is Ord# > Card# > N, then we predict that the whole functional projection that includes both the Card#P and the NP will move somewhere higher than Ord#P, as shown in (79) (Shlonsky's (41)).



Roll-up movement is also able to derive the postnominal order of modifiers in Arabic as demonstrated in (80b). The example in (80a) is repeated from (23a).

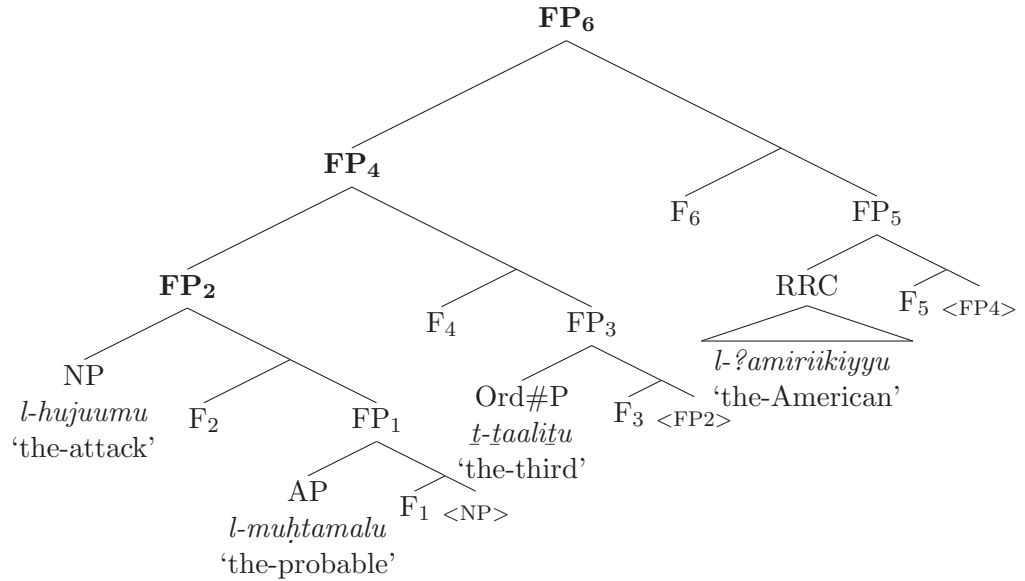
- (80) $N \succ \textit{attributive A} \succ \textit{cardinal} \succ \textit{ordinal}$
- a. l-kutub-u l-faransiyyat-u l-xamsat-u l-?uulaa
 the-books-NOM the-French-NOM the-five-NOM the-first
 ‘the first five French books’



Moreover, by employing roll-up movement we can account for the fact that adjectives in indirect modification are found further away from the noun than direct modification adjectives. If indirect modifiers are merged higher in the structure than direct modifiers, when roll-up takes place the distance of the modifiers from the head noun will remain the same, the only difference being that they appear after the noun. The derivation for the example in (24b) is given in (81).

- (81) $N \succ \textit{direct A} \succ \textit{ordinal} \succ \textit{indirect A}$
- a. l-hujuum-u l-muhtamal-u t-taalit-u
 the-attack-NOM the-probable-NOM the-third-NOM
 l-?amiriikiyy-u
 the-American-NOM
 ‘the third probable attack, which is American’

b.



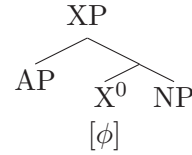
At this point we need to account for the nature of the FPs marked in bold letters in the above structures. As I discussed in chapter 2 I follow Cinque (1994, 2010) in assuming that modifiers in the extended nominal projection are merged in the specifiers of dedicated functional projections with which they are semantically related. The FPs in bold, however, appear to simply serve as landing sites for moved constituents. Shlonsky (2004), and also Cinque (2005, 2010), argue that these are AgrPs which appear above each dedicated functional projection that hosts an AP, or any other modifier in the extended nominal projection, such as numerals.

Shlonsky argues in favour of the existence of AgrPs in the nominal phrase by correlating agreement in the noun phrase to subject–verb agreement in the Semitic clause. The idea is that non-agreement or partial agreement of the subject with the verb is evinced when the former does not appear in the canonical agreement position with the inflectional head (Shlonsky 2004:1495). The conventional agreement position for a subject in Semitic is, according to Shlonsky, the Spec of an Agr-bearing head.

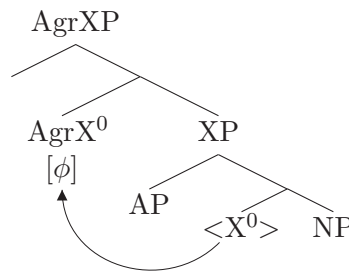
A consequence of applying this configuration to the nominal domain, is that it is predicted that obligatory agreement in the nominal phrase must take place inside an AgrP, paralleling agreement in the clause. Supported by the fact that all postnominal modifiers are always required to agree with the noun in Semitic while prenominal ones are not, Shlonsky argues that agreement is the trigger for NP-movement. He argues that the NP moves to the Spec of an AgrP to check the ϕ -features (gender, case, number) and definiteness, of the corresponding adjective.

A step-by-step derivation of how agreement takes place in Shlonsky's (2004:1496) analysis is given in (82).

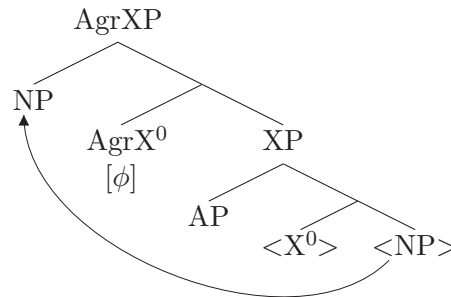
- (82) a. First X^0 , bearing ϕ -features, is merged and XP is therefore projected. AP is merged in Spec,XP.



- b. X^0 is subsequently moved outside the XP and it projects AgrXP, which is where agreement is established.



- c. The AgrX⁰ attracts the NP to its Spec in order to license agreement in a Spec/Head configuration.



The next modifier up will merge in the Spec of another functional projection, and the head of that projection will move out to project another AgrP. The process precedes successively. Shlonsky (2004:1496) claims that the agreement relationship is mediated by the functional head which carries semantic features that are associated with the AP in its Spec, and which also bears ϕ -features that trigger movement of its complement. From what we have seen here, the complement can either be the NP or a lower AgrP that contains a functional projection and the NP.

A question that arises from this analysis is what happens with prenominal modifiers as in the case of English or Modern Greek. A possible answer for the

former language, would be to claim that there is no ϕ -feature agreement between the noun and adjectives in English and this is why the NP stays in situ. There is nothing in the morphology of English that would show the opposite. However, in Modern Greek, where adjectives again surface prenominally, grammatical concord between the noun and modifiers is always present. For instance, compare (83a) with (83b); when the gender of the noun changes, the gender of all the modifiers and the definite article will also change in order to agree with the gender of the noun. Moreover, in (83c) we see that when the number and case of the noun changes, then the adjectives must again agree with the noun.

- (83) a. i meyal-i mavr-i yat-a
 the.F.NOM.SG big-F.NOM.SG black-F.NOM.SG cat-F.NOM.SG
- b. o meyal-os mavr-os yat-os
 the.M.NOM.SG big-M.NOM.SG black-M.NOM.SG cat-M.NOM.SG
- c. tus meyal-us mavr-us yat-us
 the.M.ACC.PL big-M.ACC.PL black-M.ACC.PL cat-M.ACC.PL

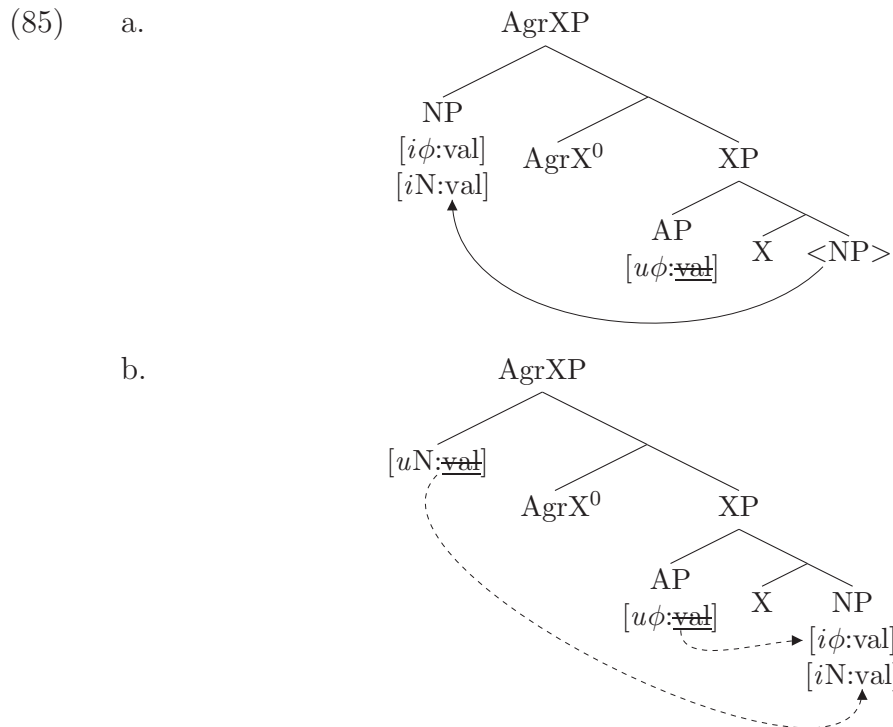
As a result, ϕ -features alone do not suffice as a trigger for movement since in the case of Modern Greek we still have agreement but no visible movement of the NP. In order to make this data comply with Shlonsky's analysis we could stipulate that, in addition to ϕ -features, Semitic Agrs also come with an EPP feature while Greek lacks this feature.

In Cinque 2005 AgrPs in the extended nominal projection again act as landing sites for the moved phrases. Unlike Shlonsky, who attributes the trigger for movement to checking ϕ -features, Cinque (2005:325–326) speculates that movement of the NP, or of a larger phrase containing the NP, might be what licenses the various phrases in the extended nominal projection. The idea is that each phrase in the extended nominal projection needs to be licensed with a nominal feature. The licensing is achieved by merging above each phrase an Agr⁰ head whose Spec comes to bear this nominal feature. This is achieved by either moving a phrase that contains the noun or by simply merging the feature inside the AgrP. In the latter case agreement with the NP takes place under Chomsky's (2000; 2001) Agree operation. A standard definition of Agree is given in (84).

- (84) *Agree*
- α can agree with β iff the following hold:
- a. α bears at least one unvalued/uninterpretable feature and β carries a matching valued/interpretable feature.

- b. α c-commands β .
- c. β is the closest goal to α .
- d. β bears an unvalued/uninterpretable feature.¹⁸

Even though Cinque (2005) does not explicitly show how agreement takes place, we can presume that the two different options of agreement are as schematised in (85). In the first option the AgrP is licensed with a nominal feature by moving the NP, which carries that feature, to its Spec. In the alternative option, an unvalued/uninterpretable nominal feature is merged in Spec,AgrP and licensing takes place under Agree, which in (85b) is marked with a dashed arrow. While Cinque does not make mention of how valuation of ϕ -features is achieved, I assume that it also happens under Agree. The unvalued/uninterpretable ϕ -features of the AP are valued and deleted against the valued/interpretable features of the NP as shown in the diagrams below. This means that valuation of ϕ -features is always the same regardless of whether the NP moves or not. Thus, the problems that come with Shlonsky's proposal that ϕ -feature agreement is responsible for movement are avoided.



¹⁸For Heck and Richards (2010:690) this unvalued feature must be a case feature, as a goal is only visible to the syntax for as long as it has an unvalued case feature.

The first of the two options, illustrated in (85a), is the one that derives the postnominal placement of modifiers. Whether the NP moves alone to the Spec of each AgrP, or if it pied-pipes the entire phrase every time it cyclically moves, is down to parametric variation. As we have seen above, Hebrew and most Modern Arabic dialects follow the pied-piping/roll-up option, which derives the mirror image order.

A problem for any analysis that derives the postnominal orders by employing movement, however, is that it needs to stipulate a trigger for movement. In addition to this, there is no independent motivation for the existence of AgrPs, which fundamentally act as landing sites above each FP. In the following section I present an alternative analysis for deriving the mirror image order that disposes of movement, and consequently, does not face these criticisms.

5.6.1.2 A symmetric approach

While Shlonsky's (2004) and Cinque's (2005) analyses follow Kayne's (1994) antisymmetric linearisation, it is possible to derive the mirror image order in a symmetric analysis. This alternative approach is explored by Abels and Neeleman (2012) in an attempt to derive Greenberg's (1963) Universal 20 (U20), given in (86), without adopting Kayne's LCA.

(86) *Universal 20:*

“When any or all of the items (demonstrative, numeral, and descriptive adjective) precede the noun, they are always found in that order. If they follow, the order is either the same or its exact opposite.”

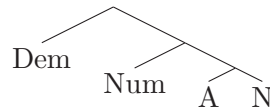
(Greenberg 1963:87)

Abels and Neeleman take Cinque's (2005) work on U20 as a starting point and argue that all of the fourteen orders of Dem, Num, A and N attested in natural language that Cinque derives using LCA, can still be derived if the Spec-Head-Complement hypothesis is abandoned. Most of the assumptions that the two analyses make are identical (Abels and Neeleman 2012:33). The first common assumption is that the underlying hierarchical order of the modifiers concerned in U20 is $\text{Dem} > \text{Num} > \text{A} > \text{N}$, while the second and third assumptions are constraints on movement; crucially, all relevant movements must involve a phrase that contains N and any moved constituent should target a landing position that c-commands the launching site.

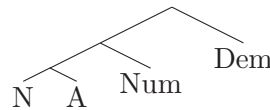
Where Abels and Neeleman break with Cinque, however, is when it comes to whether natural language follows the antisymmetric Spec-Head-Complement template or not. While Cinque adopts an antisymmetric model, Abels and Neeleman simply implement a movement restriction to their analysis, which only permits leftward movements. This constraint on movement, according to them, is not syntactic as linear order does not seem to play a role in syntax. Rather, it could be that linearisation of syntactic structures happens at the PF interface. Another possibility that Abels and Neeleman (2012:69) consider is that the movement constraint is a parsing effect; if input strings are presented to the parser incrementally, then in order for the parser to insert a “trace” the antecedent must already be identified.

Given that the LCA model is abandoned under Abels and Neeleman’s analysis, modifiers have the possibility of being base generated in either left or right branches. The consequence of this is that out of the fourteen attested orders of Dem, Num, A and N, eight of these orders come for free as they are base generated. These orders are given below in (87) (Abels and Neeleman 2012:33–34, (13)).

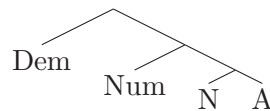
(87) a.



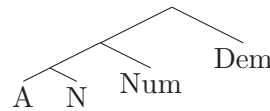
b.



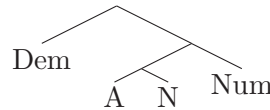
c.



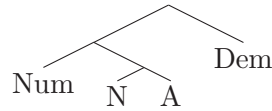
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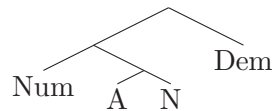
f.



g.



h.



The remaining six attested orders are derived via leftward movement, as in Cinque’s analysis. As for the ten unattested orders, they are ruled out for the same reasons that they are ruled out in Cinque’s system. This means that in order to derive the unattested orders we would have to either employ rightward movement or move a constituent that does not contain N, both of which are disallowed in either of the analyses.

One of the motivations behind Abels and Neeleman’s proposal comes from the fact that the Spec-Head-Complement hypothesis already assumes that movement is leftward. Therefore, if movement alone is enough to yield all attested orders and block any unattested ones, then it appears that the LCA is no longer necessary in the system. Another problem for Cinque’s system that Abels and Neeleman point out is that roll-up movement, which is necessary for an LCA analysis, creates c-command relations that are absent in traditional theory (Abels and Neeleman 2012:50).

In an earlier version of their article, Abels and Neeleman (2007), argue that their system makes a clearcut distinction between three levels of frequency for the observed orders of these modifiers, while Cinque’s theory of markedness appears to be more complicated and not as sharply defined. In particular, Cinque associates markedness with movement, while Abels and Neeleman associate it with whether branching is directionally uniform or not. For example, in Cinque’s system total roll-up movement is unmarked, while total movement of NP without pied-piping is marked. If movement is partial, it is more marked and the order is therefore not as frequently attested in languages. In Abels and Neeleman’s analysis directionally non-uniform branching is more marked than uniform branching, while movement, in general, is marked. As a result, if a structure allows both movement and non-uniform branching, we expect that it will be more marked

than a structure that only permits non-uniform branching.

While Abels and Neeleman (2012) do not discuss adjectival modifiers at length, they treat them as adjoined to NP. The reasoning behind this is that stacked adjectives can only be interrupted by the noun, but not by numerals or demonstratives. They derive this restriction from *Attract Closest*: if all adjectives have identical feature specifications then *Attract Closest* will only attract the highest node. In other words, the whole sequence of adjectives and the noun will have to move without stranding any adjectives.

In Cinque's (2010) analysis where adjectives are merged in the specifiers of distinct functional projections which are dominated by AgrPs, it is predicted that each functional projection will have different feature specifications. Consequently, *Attract Closest* is not able to derive the restriction on the inseparability of the adjectives. Abels and Neeleman (2012:57) claim that in order for *Attract Closest* to hold in such an analysis, it would have to be the case that all F^0 s and Agr^0 s share at least one feature, and that this is the only feature that is ever attracted. However, Abels and Neeleman show that for the dedicated functional projection (DFP) analysis to capture the Spanish data in (88), it is necessary to stipulate that the AgrPs come with a different specification. Let us consider why.

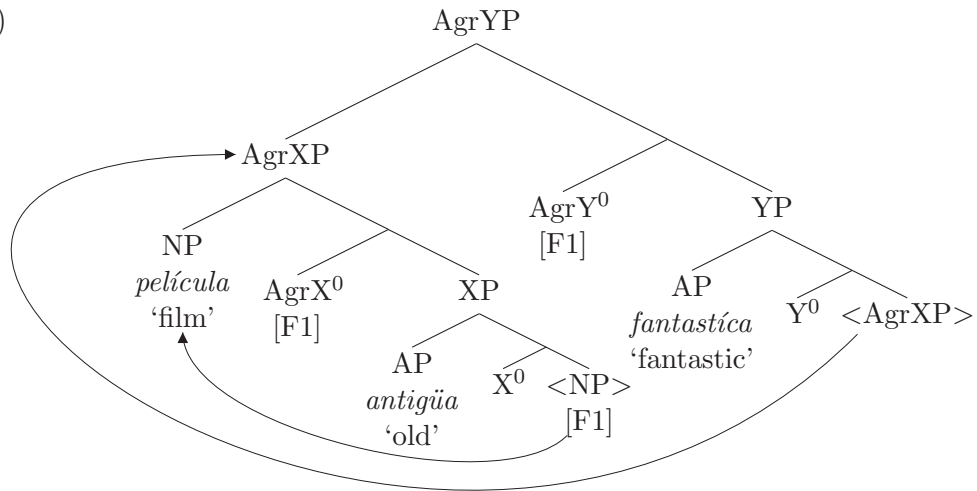
- (88) a. una [[película antigüa] fantástica]
 a film old fantastic
 b. una [[antigüa película] fantástica]
 an old film fantastic
 c. una [fantástica [película antigüa]]
 a fantastic film old
 ‘a wonderful old film’¹⁹

(Abels and Neeleman 2012:58–59, (34))

The first two orders, according to Abels and Neeleman, can be derived if the two Agr^0 s share the same feature, e.g. [F1]. In the first case, this feature is shared by the two Agr^0 s, as well as the noun. This feature triggers NP movement to Spec,AgrXP and subsequent movement of AgrXP to Spec,AgrYP:

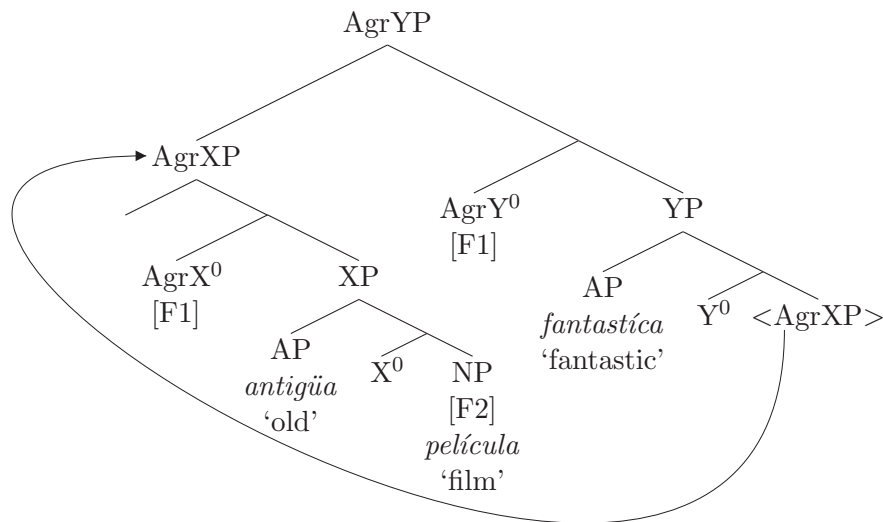
¹⁹The adjective *fantástica* can only have the evaluative meaning ‘wonderful’ in all of the above examples. If it is under the scope of *antigüa* ‘old’ it is interpreted as ‘fantastical’. In hierarchical terms, this means that ‘wonderful’ is merged higher than ‘old’, as the hierarchical order is Quality > Age.

(89)

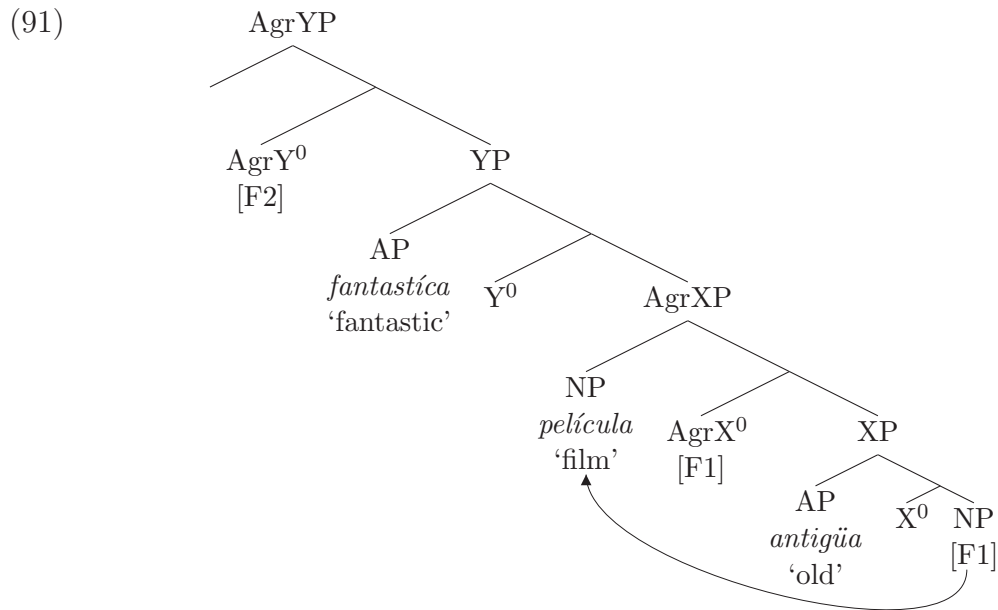


In the second order the feature is shared by the two Agr⁰s, but not the noun. As a result, the NP stays in situ, while the feature on AgrY⁰ triggers movement of AgrXP to its Spec:

(90)



The problem occurs with the last example where the two Agr⁰s must have a distinct specification in order to derive the right order. AgrX⁰ and the noun share the same feature, and consequently the noun moves to Spec,AgrXP. AgrY⁰, however, must have a different feature specification, otherwise we would expect AgrXP to move to its Spec, which would derive the wrong order:



While the inseparability of adjectives cannot be captured under Attract Closest in the DFP analysis, Abels and Neeleman’s analysis faces different complications, which stem from assuming that adjectives are adjoined to the NP. Any analysis that treats adjectives as adjuncts needs to stipulate that the ordering patterns attested cross-linguistically are the result of a non-syntactic factor. In Abels and Neeleman’s analysis the order is captured in terms of scopal properties. This, however, cannot account for the fact that when some adjectives are reordered they appear with a different interpretation, but others do not. For example, in chapter 3 I claimed that nationality adjectives can have an origin reading or a quality reading, depending on whether they are merged in the Spec of a functional head associated with origin or quality respectively. In (92) it is evident that when the nationality adjective appears after *big* it can only have an origin reading, but when it appears before *big* it can either have a quality or an origin reading. On the other hand, reordering of the adjectives in (93) does not change the meaning of the adjectives themselves, rather it affects the scopal interpretation.

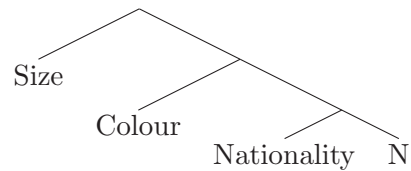
- (92) a. a big (*very) Greek dinner²⁰ *Origin*
 b. a (very) Greek big dinner *Quality/Origin*

- (93) a. an expensive big dinner
 b. a big expensive dinner

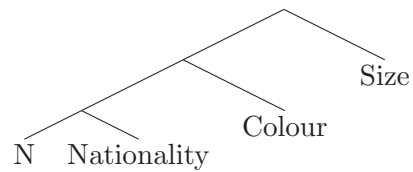
²⁰If there is a pause after *big* and *Greek*, then it is possible for the adverbial modifier to appear before *Greek* in (a). In that case *Greek* would have a quality interpretation. The pauses, however, indicate that the adjectives are found in parallel modification (see chapter 3).

Another question that arises from the adjunction analysis is where the noun lands when it is found between two adjectives. In order to understand the problem, let us extend Abels and Neeleman's symmetric analysis to the order of adjectives as well. In (94) we find all the orders that the symmetric analysis would predict are base generated. Only three classes of adjectives (size, colour and nationality) are listed here, in order to make a direct comparison between the order of adjectives and the order of modifiers given in (87).

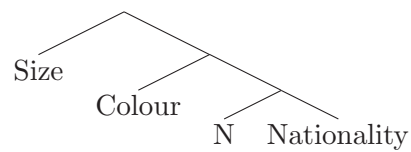
(94) a.



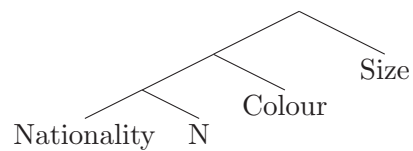
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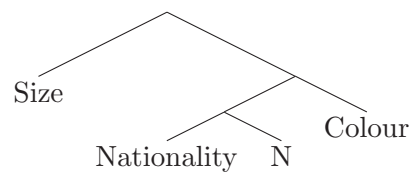
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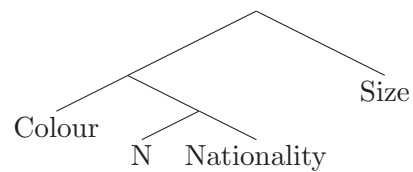
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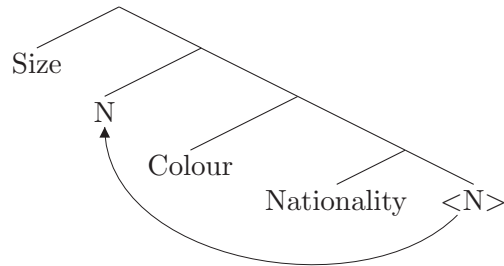
e.



f.



(97)

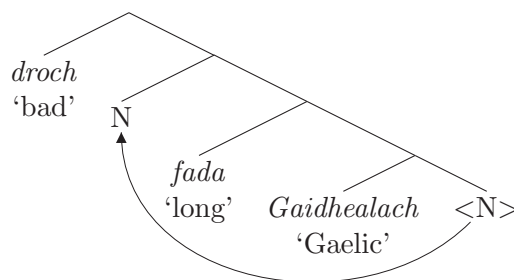


Abels and Neeleman’s analysis, as it stands, cannot capture any N-medial order where the adjectives are base generated in the underlying order given in (94a). If the adjectives are adjoined to the NP, it is predicted that when the noun moves it will have to move above all adjectives as there is no available landing site between them. N-medial orders are, therefore, allowed only when they are base generated. Cinque’s (2005, 2010) analysis, on the other hand, can derive the order in (97) as the NP can move above Colour to the Spec of its corresponding AgrP, without having to undergo further movement above Size.

In order to establish whether the order in (97) is attested or whether Abels and Neeleman’s prediction is correct, we need to look into typological studies concerned with the ordering of adjectives. Scottish Gaelic appears to be problematic for Abels and Neeleman’s analysis, as certain evaluative adjectives like ‘bad’ can only appear prenominal, while the rest of the adjectives must follow the noun in the universal order as in (98a). This order can only be derived in a structure as the one in (98b).

- (98) a. an droch bhardachd (*dona) fada Gaidhealach
the bad poetry bad long Gaelic
‘bad long Gaelic poetry’

b.



It must be noted that in the example above nothing can intervene between the evaluative adjective and the noun. Further investigation is therefore necessary in order to establish whether Scottish Gaelic poses a problem for Abels and Neeleman’s analysis, or if these evaluative adjectives require a different analysis.²¹

²¹A possible solution for Abels and Neeleman’s analysis is to argue that when the noun moves in these orders, it reprojects an NP along the lines of Georgi and Müller 2010.

To summarise what we have seen in this section, the postnominal mirror image order does indeed come for free under a symmetric analysis, as it does not have to stipulate triggers for movement or introduce new functional projections which essentially serve as landing sites for the moved constituents. Nevertheless, the postnominal universal order can only be derived via movement, and as a result, the question that we cannot escape in this analysis either is what the trigger for movement is, and where the noun or NP moves to. Even if movement is simply seen as the outcome of linearisation and not as something syntactic, the fact remains that movement is necessary in order to derive all attested orders. Furthermore, the assumption that adjectives are merged as adjuncts rather than in the Spec of dedicated functional projections, fails to capture the interpretational effects that we get by reordering some adjectives.

While both analyses face some problems, in section 5.6.4 I will show that an antisymmetric approach is able to capture the ordering phenomena observed in CMA more straightforwardly than a symmetric analysis. In what follows I present my analysis for CMA which adopts an antisymmetric model.

5.6.2 Motivating DP-internal movement

The main claim of the present analysis is that by understanding what motivates movement in the nominal domain, we are able to understand the CMA ordering phenomena which seem to be anomalous.

The trigger for movement in my analysis is linked to maintaining nominality in the extended nominal projection. In the discussion above (section 5.6.1.1), we saw that Cinque (2005) associates movement in the DP with the need for each phrase to be licensed with a nominal feature. This claim can be traced back to the theory of extended projections; according to Grimshaw (2005:2–4) the categorial features of all the phrases in an extended projection must match the category feature of the head of the extended projection. If we apply this to the nominal domain, it means that all functional heads in the extended nominal projection must be [N].

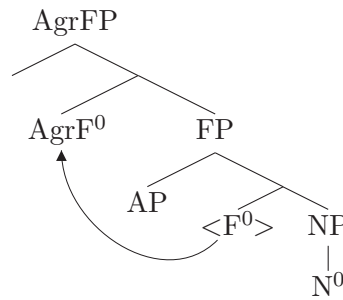
Cinque (2005) states that the nominal feature is either merged with a phrase, or it is acquired by moving the noun to the phrase that needs to be licensed. Pearson (2000) proposes a similar analysis for the verbal domain, where a functional projection inherits a [V] feature by movement of either a head or a phrase that contains the lexical feature [V]. The formulation of Pearson's proposal is given in (99).

- (99) a. A functional projection FP is *categorially non-distinct* from a lexical head L iff it has inherited a lexical feature from L.
- b. A functional projection FP inherits a feature ϕ from a lexical category L iff:
- (i) An X^0 -projection containing ϕ adjoins to F^0 , or
 - (ii) An XP-projection containing ϕ enters into a Spec-Head configuration with F^0 .

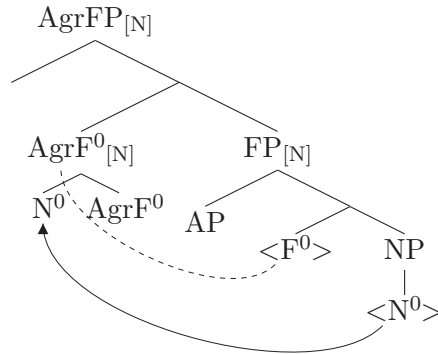
(Pearson 2000:339, (26))

Let us see how this proposal applies to the nominal domain, and specifically, to adjectival modification if we are to adopt the structure in (72). Following Shlonsky (2004) I assume that the F^0 moves out of the FP and projects AgrF^0 as shown in (100a). If the feature is inherited via head-movement, the noun, will adjoin to the AgrF^0 as in (100b). The $[\text{N}]$ feature is passed on to the Agr^0 head, the AgrFP , and to the FP since there is a chain between F^0 and AgrF^0 .

- (100) a.

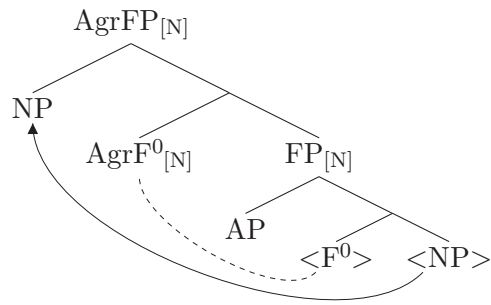


- b.



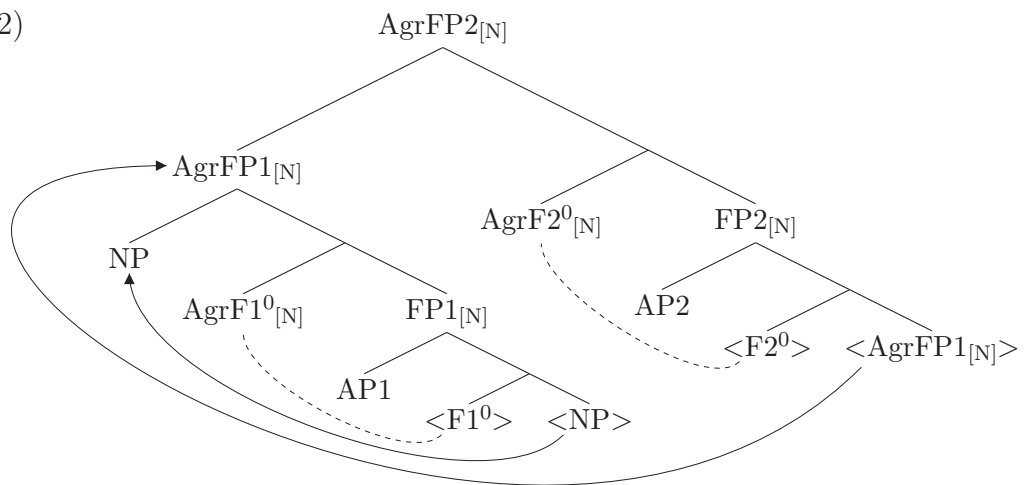
The second option for inheriting $[\text{N}]$ is via phrasal movement. In this case, the NP moves to Spec, AgrFP and the whole AgrP, as well as the FP, inherit the lexical/categorical feature:

(101)



Crucially, Pearson's formulation does not restrict movement to the lexical head. While it is possible for the noun as a new complex head or the NP to move again and license higher phrases in the structure, Pearson's formulation predicts that any head or any phrase can move and license another phrase, as long as they carry the lexical/categorial feature. This means that once an AgrP inherits the lexical/categorial feature as in (101), it can move to license another phrase as represented in (102). However, following Cinque (2005, 2010) I also assume that there is a restriction on movement, whereby a phrase can move only if it contains the noun. The consequence of this is that FP1 in (102) cannot move and license AgrFP2, as it does not contain the noun.

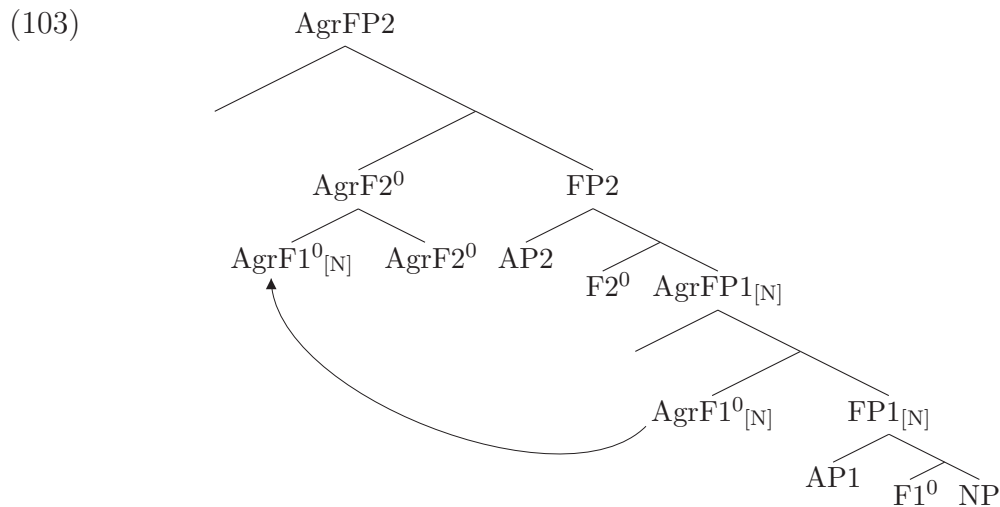
(102)



Recall that in Cinque's analysis, licensing of the phrases in the extended nominal projection with a nominal feature does not only take place via movement of the NP or of a larger phrase that contains the NP, but is also achieved by externally merging [N] with an AgrP.²² In addition to the movement options presented above in (100)–(102), I also adopt the idea that it is possible for [N] to merge inside an AgrP. In particular, I assume that [N] is merged with Agr⁰. A consequence that follows is that if a head Agr⁰ contains the lexical/categorial feature [N], it should

²²This was discussed in section 5.6.1.1.

be able to adjoin to another head that does not contain the lexical/categorial feature, as represented in (103).²³ This is predicted by Pearson’s formulation (99b-i).



In what follows we will see that by assuming that movement in the nominal domain is driven by the need to maintain nominality, the CMA orders can be accounted for while keeping the idea of a strict hierarchical structure for adjectives. The structures presented in this section suffice to derive all attested orders in CMA.

5.6.3 Three types of DP-internal movement

In this section I will claim that the attested orders in CMA are derived via three-types of movement: Spec-to-Spec NP-movement, roll-up, and head movement, which are all triggered by the need of phrases to inherit a nominal feature. If we modify the table in 5.1, where the morphological and syntactic properties of adjectives in CMA were summarised, to include which type of movement can derive the CMA facts, we end up with the generalisations in table 5.3.²⁴ The three adjective classes which consist of borrowed adjectives that have retained the Greek concatenative morphology are clearcut cases of optional Spec-to-Spec NP-movement. The classes of Quality and Size seem to require obligatory Spec-to-Spec NP-movement, except when they appear with a Greek adjective, in which case it appears that movement becomes optional. Later in the discussion we will see that movement is never optional with these two classes, but for now we will

²³For expedience, the chains between F⁰s and Agr⁰s are not depicted here.

²⁴I use the logic symbols \diamond and \square to mean ‘optional’ and ‘obligatory’, respectively.

leave the generalisation as is. Finally, there are two types of movement that derive the orders witnessed with the three native colour terms: a) roll-up with nationality adjectives, and b) Spec-to-Spec NP-movement with all other classes. Both types of movement are obligatory.

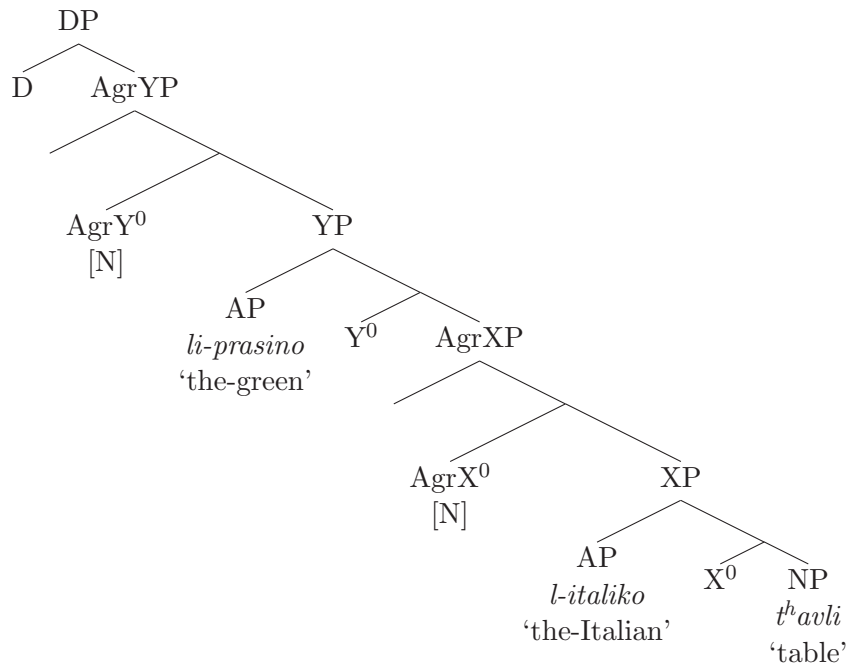
Table 5.3: Syntax of CMA adjectives and types of movement

	Prenominal	Order	Movement
Shape	yes	universal	◇ Spec-to-Spec
Nationality	yes	universal	◇ Spec-to-Spec
Colour_{Greek}	yes	universal	◇ Spec-to-Spec
Quality	only with +A _{Greek}	universal	□ Spec-to-Spec ◇ with +A _{Greek}
Size	only with +A _{Greek}	universal	□ Spec-to-Spec ◇ with +A _{Greek}
Colour_{Arabic}	no	mirror image (<i>Nation.</i>) universal elsewhere	□ Roll-up □ Spec-to-Spec

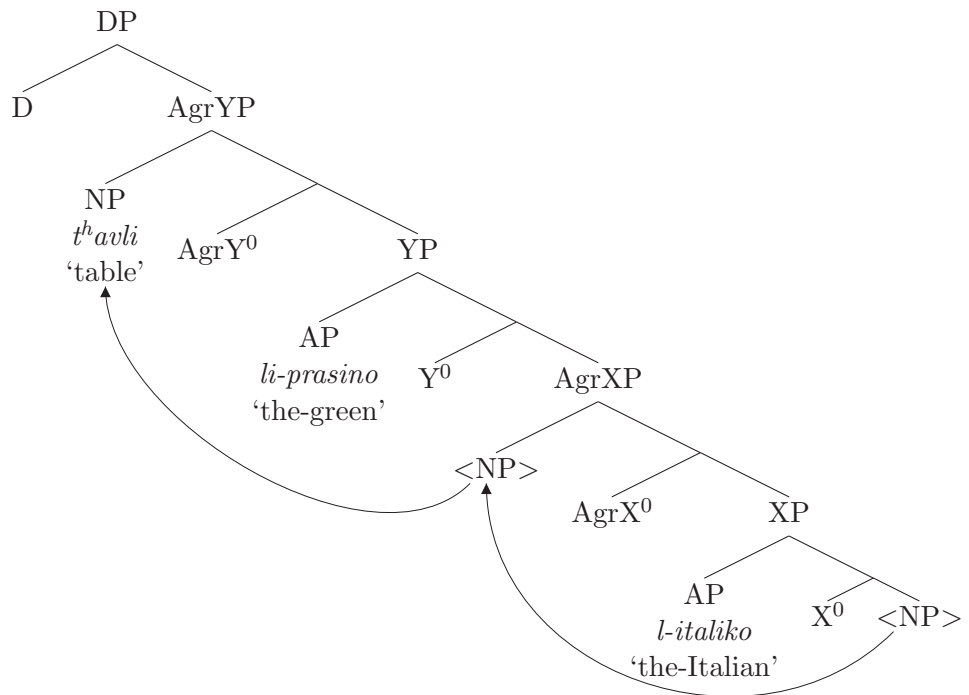
As was claimed in the section above, whether movement will take place in the nominal domain or not, is determined by whether a [N] is merged with an Agr⁰ or not. If it does, there is no need for the NP to move as Agr⁰ already matches the category feature of the head noun. If, however, the Agr⁰ does not come with [N], the NP or a larger phrase that contains the noun, will have to move to Spec, AgrP to license it.

Let us start with the three straightforward classes of Shape, Nationality and Colour_{Greek}. With regard to these three “Greek” classes, I assume that the Agr⁰ heads, which merge with the FP that contains the Greek AP, have the option either to be merged with [N] or not. As a result, these adjectives will either surface prenominally or postnominally. This is schematically represented in (104) and (105) with a colour and a nationality adjective. The same derivation also applies to shape adjectives.

(104) $Colour_{Greek} \succ Nationality \succ N$



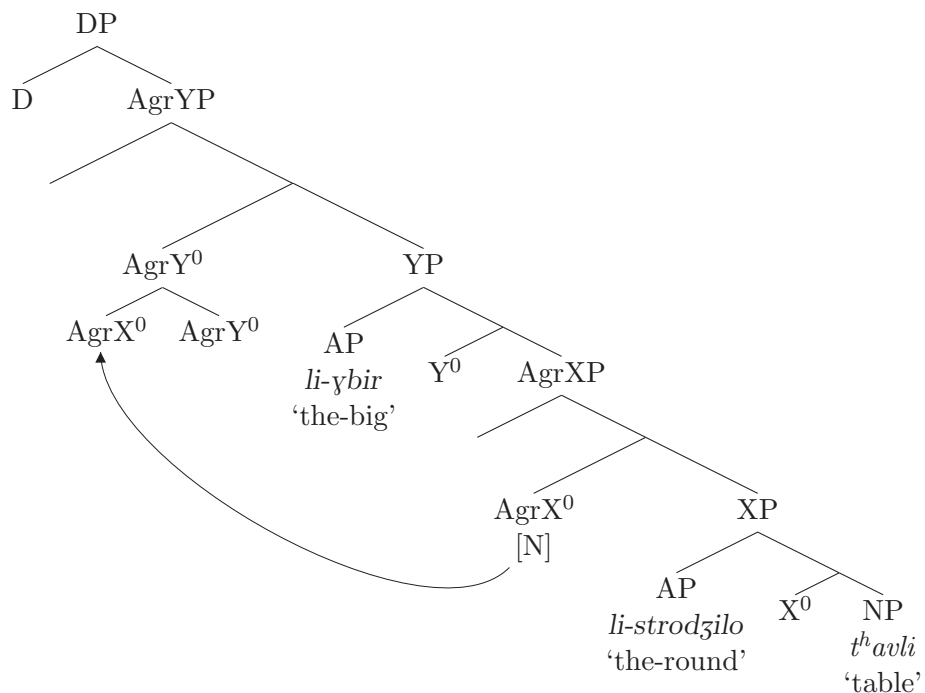
(105) $N \succ Colour_{Greek} \succ Nationality$



Moving on to the classes of Quality and Size, I propose that their Agr⁰s always merge without an [N]. This accounts for the fact that quality and size adjectives must be postnominal when they either appear together in the same phrase or

alone. In making this claim however a question arises as to how it is possible for adjectives that belong to these two classes to surface preminally when they appear with a Greek root adjective. In section 5.6.2 we saw that only movement can license a phrase that does not contain [N]. In this case I assume that a Quality or Size Agr⁰ will still need to attract an N element in order to be licensed as part of the extended nominal projection, but instead of attracting the NP, they attract a lower Agr⁰ that bears [N], as represented in (106).

(106) *Size* > *Shape* > *N*



Licensing AgrY⁰ via head movement of AgrX⁰ to AgrY⁰ appears to be the most economical option. Let us consider the alternative. Normally, AgrY⁰ would attract to its Spec a phrase that is found in the Spec of a lower AgrP, in this case Spec, AgrXP. Spec, AgrXP, however, is empty, as AgrX⁰ comes with [N] and consequently the NP stays in situ. Given that AgrY⁰ is looking for an element that carries a categorial feature, a possible option would be for AgrY⁰ to attract the whole AgrXP containing the NP to its Spec. However, this type of movement does not seem to be available to CMA, and it also appears to be quite marked with regard to cross-linguistic data. According to Cinque (2005:321), who refers to this as “movement of NP plus pied-piping of the *picture of who* type”, the orders derived via this type of movement are attested in very few languages. Even if this movement was available to CMA, it would derive the linear order

the-round table the-big which, while acceptable, is a marked order. This order comes with a special interpretation in which the shape adjective is focussed. It appears that the least marked option that saves the derivation from crashing is moving the closest head that bears [N] to AgrY⁰.

What is worth noting at this point is that there appears to be a uniformity constraint at play, whereby if the lower Agr⁰ does not merge with a categorial feature, but instead has to inherit it, then any higher Agr⁰ will also be forbidden from bearing a categorial feature. This constraint is stated below:

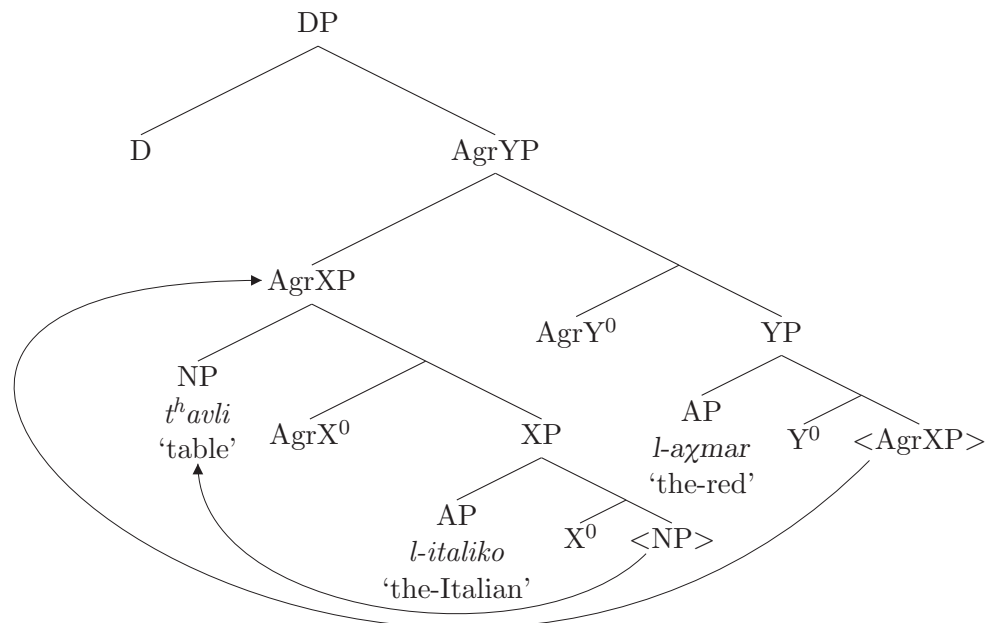
(107) *Categorial Feature Uniformity (CFU):*

For class X if X is not merged with a categorial feature [N], then for any class Y when Y selects X, Y also does not bear [N].

Consider again the structure for the order Colour_{Greek} > Nationality > N given in (104). The CFU constraint predicts that the order Colour_{Greek} > N > Nationality will not be possible, as it would mean that Nationality does not come with a categorial feature, while Colour does. This is borne out. The N-medial order is acceptable only when the colour adjective is focussed. I therefore consider this order to be the outcome of focus fronting the colour adjective, and not the result of merging [N] with Colour. Importantly, the CFU constraint does not make any predictions about what happens when the lower class is merged with [N]. This gives us two options; the higher class is also merged with [N] as shown in (104), or the higher class needs to inherit the feature via movement, in which case we get movement of the lower Agr⁰ to the higher Agr⁰ as illustrated in (106).

Finally, we turn our attention to the orders attested with the three native colour terms, for red, black, and white. As was mentioned above, when these colour terms appear with a nationality adjective they surface in the mirror image order. This suggests that the Arabic colour Agr⁰ never bears [N] and it needs to inherit that feature via roll-up movement. The movement parameter for these three adjectives is the same as the one observed in other Modern Arabic dialects. The derivation for this order is as schematised in (108).

(108) $N \succ Nationality \succ Colour_{Arabic}$



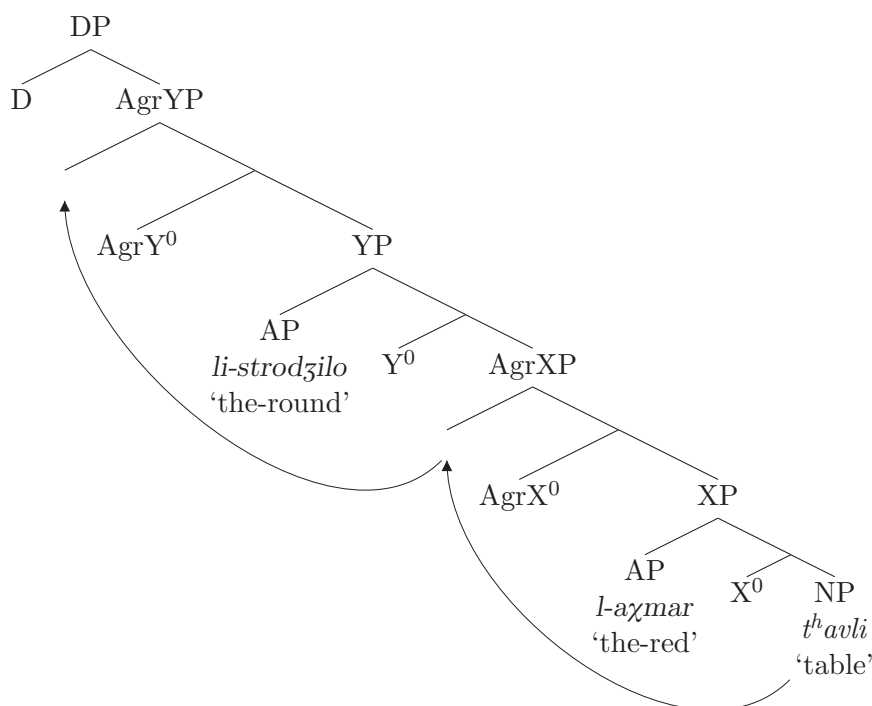
The question that arises is why it is not possible to find the three native colour terms prenominally when they appear with a Greek noun, given that this is what we find with quality and size adjectives. In other words, why is the nationality Agr^0 head not able to merge with a [N] and subsequently move to the colour Agr^0 to license it? A speculation is that these three adjectives have retained their “Arabic” features, and as a result, they require movement of the NP to the Spec of the complement of F^0_{colour} , and subsequent movement of the entire phrase. Any other movement is disallowed. The classes of Quality and Size, on the other hand, while they have kept the Arabic nonconcatenative morphology even with borrowed adjectives, do not pattern with adjectives of other Arabic dialects. This is evident from the fact that they follow the universal order, and not the mirror image one. We can thus conclude that the only adjectives in CMA that still adhere to the Arabic morphology and syntax are the three native colour terms.

The next question that needs to be addressed is why the mirror image order is only evinced with nationality adjectives and is not also found with other classes when these appear with the three colour terms. The answer to this is straightforward. As we have seen, the parameter for all other adjectives is set to Spec-to-Spec movement. If we take into account that all other adjectives are merged higher than colour adjectives in the universal hierarchy (cf. (109)), it follows that there is nothing available lower than the colour adjective that can be

rolled-up. As a result, the phrase that moves to the Colour Spec,AgrP is the NP, which is subsequently attracted to a higher Spec as shown in (110). The reason the higher class is never merged with [N] when the lower class is Colour_{Arabic} is again accounted for by the CFU constraint. Given that native colour adjectives never bear [N], any higher adjective will also appear with an Agr⁰ that does not carry [N]. This accounts for the fact that native colour terms are strictly postnominal, even when they appear in the same phrase as another adjective.

(109) Quality > Size > Shape > **Colour** > Nationality > N

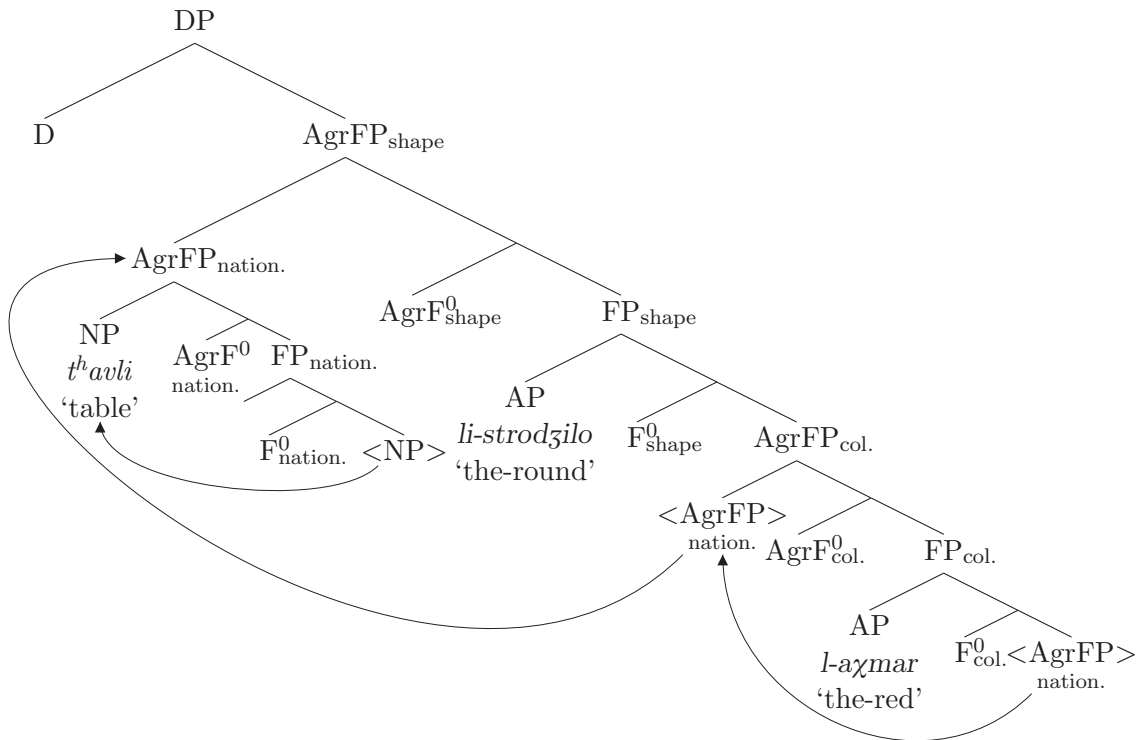
(110) $N \succ Shape \succ Colour_{Arabic}$



If we assume that all FPs are structurally present in the syntax even when these are not morphologically realised, as in Cinque 1999, then we can claim that AgrP_{nationality} does roll-up when a native Arabic adjective is present, but given that this is not morphologically realised, the surface order of adjectives will still be the universal order and not the mirror image. This is what we see in (111).²⁵

²⁵In order to test this analysis we would have to look at three adjectives in the same phrase: a nationality adjective, a native colour term and a higher adjective, for instance, a shape adjective. If the order $N \succ Nationality \succ Shape \succ Colour$ was acceptable, it would support the present analysis. However, CMA permits at most two adjectives at a time, and as a result the acceptability of this order cannot be tested. This restriction could be a processing effect, rather than a syntactic constraint.

(111) $N \succ Shape \succ Colour_{Arabic}$



The above derivations are able to account for all the unmarked orders attested in CMA. A residual question is what determines whether an Agr⁰ will merge with [N] or not. One option is that it is the presence or absence of a feature found on each dedicated FP. Considering that Agr⁰ merges with an FP, we expect that it is a feature of the latter that is relevant to whether the Agr⁰ will carry [N].

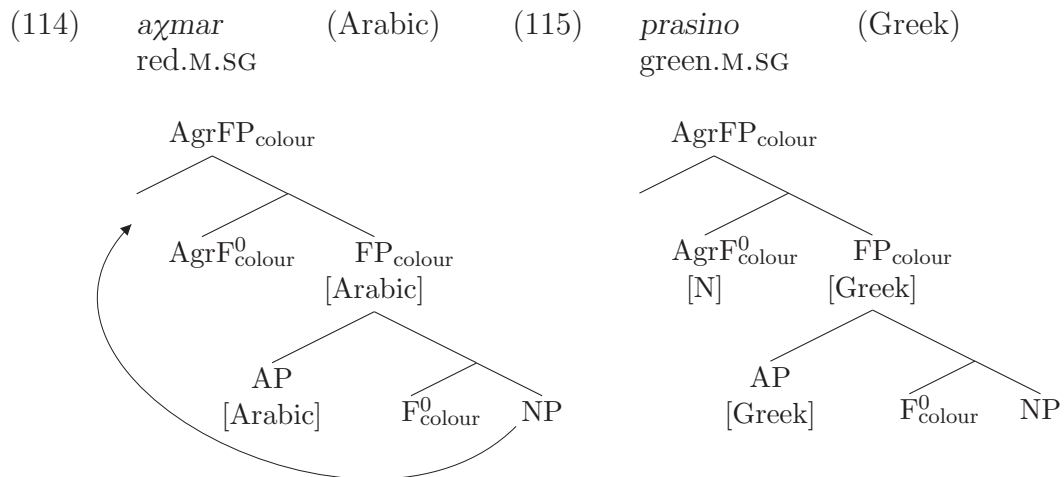
I do not, however, presume that this Agr-selectional feature is merged directly with the FP. My proposal, rather, is that the feature is passed on to the FP from the AP. The justification for this claim stems from the fact that in CMA, a unique FP is able to host both adjectives which are strictly postnominal, and adjectives which are acceptable both in a prenominal and a postnominal position. This is the case with colour adjectives. The FP that is semantically related to colour in the extended nominal projection can host strictly postnominal colour adjectives, or colour adjectives which are acceptable in either position:

- (112) a. t^havli l-axmar
table.DEF the-red
- b. *l-axmar t^havli
the-red table.DEF
'the red table'

- (113) a. t^havli li-prasino
table.DEF the-green
b. li-prasino t^havli
the-green table.DEF
'the green table'

An analysis in which the relevant Agr-selectional feature is merged with the FP, would predict that there are two types of FP_{colour}; an FP which merges with an “empty” Agr⁰ and which derives postnominal adjectives, and an FP which merges with an Agr⁰[N] and which, consequently, only hosts prenominal adjectives. If, however, we take for granted that there is a single FP that is dedicated to colour adjectives, we expect that FP_{colour} always comes with the same features, and that variation in colour adjective placement arises from the divergent features of the Colour APs.

Let us consider the structures in (114) and (115), which illustrate this proposal. Suppose that the APs where the three native colour terms are merged come with a feature which for now we will call [Arabic], while APs with borrowed colour terms come with a [Greek] feature. These features percolate up to the FP and are, consequently, visible to Agr⁰ during Merge. If the FP carries an [Arabic] feature, then the Agr⁰ will be empty and it will need to inherit [N] via movement. If, however, the FP comes with a [Greek] feature, then the Agr⁰ will bear [N] and as a result the NP will stay in situ.²⁶

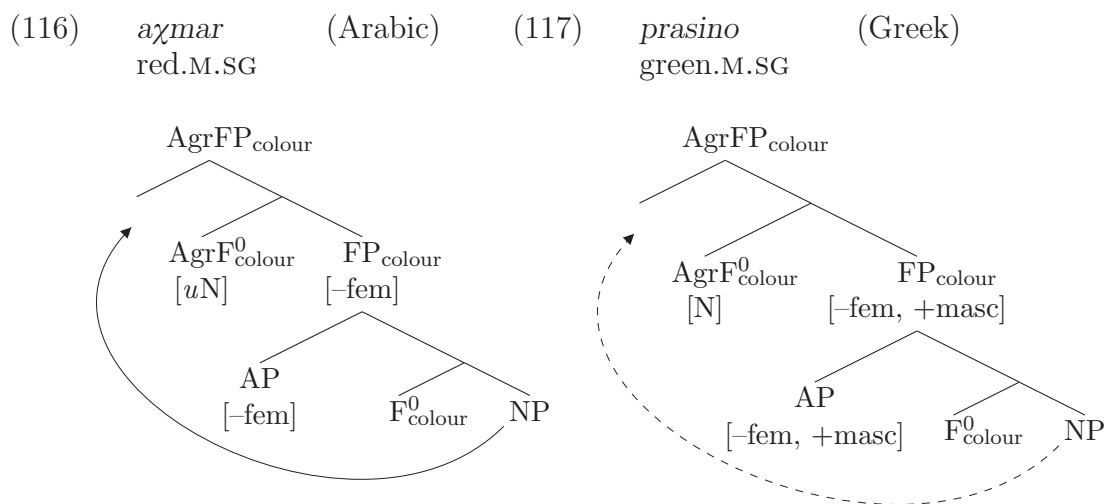


²⁶In Panayidou 2012 I proposed a similar analysis for determining whether an Agr⁰ head will come with [N]. However, I also claimed that the orders attested in CMA are the consequence of movement, and of having two separate Functional Sequences (FSeqs), a Greek and an Arabic one, that are inserted one inside the other. The analysis presented here, captures the ordering much more elegantly as it only needs to make use of movement, without having to stipulate that there are two distinct FSeqs in the nominal domain of CMA.

This analysis can be extended to all other classes of adjectives in CMA. The selectional properties of the Agr⁰ heads that merge with Quality and Size FPs will match those found in (114), while Agr⁰ heads that merge with Shape and Nationality will pattern with (115).

A final question is what the [Arabic] and [Greek] features are. A potential answer is related to gender. As was noted in footnote 4 there appears to be a divergence in the gender system of native and borrowed adjectives. In particular, native and borrowed adjectives with nonconcatenative morphology only distinguish between feminine and masculine, while borrowed Greek adjectives with concatenative morphology also have a neuter form. This might suggest that the gender feature found with Arabic APs (i.e. Quality, Size, Colour_{Arabic}) is [±fem], while Greek APs (i.e. Shape, Colour_{Greek}, Nationality) have the more complex gender feature [±fem, ±masc]. A masculine Arabic AP is, therefore, specified for [-fem] and a feminine for [+fem]. A Greek AP, on the other hand, is [-fem, +masc] if masculine, [+fem, -masc] if feminine and, finally, [-fem, -masc] when neuter.

If the complexity of the gender feature is what sets Arabic APs apart from Greek APs, then the claim is that the selectional properties of Agr⁰ are sensitive to the presence or absence of [masc]. If [masc] is absent from the AP, and consequently the FP, the nominal feature on Agr⁰ will be inherited via movement. If [masc] is present then the FP is merged with an Agr that optionally comes with [N], which is why we find optional movement with the three Greek classes. This proposal is schematised below:



Relating movement to a gender feature, however, seems to be too strong a claim. It predicts that languages with less complex gender features will always have post-

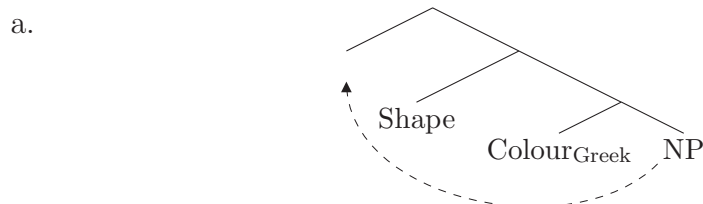
nominal modifiers in the nominal domain. While gender alone might not be what determines the presence of [N] on Agr⁰, what might be relevant to the selecting properties of the latter is the richness of a feature bundle. Suggestive evidence for this comes from colour adjectives in Italian, where invariant adjectives like *rosa* ‘pink’ and *blu* ‘blue’ are strictly postnominal, while colour adjectives which exhibit agreement with the head noun are witnessed in either position (Zamparelli 1993; Andrew Nevins p.c.):

- (118) a. un colibrì azzurr-o
 a hummingbird.M.SG blue-M.SG
- b. un azzurr-o colibrì
 a blue-M.SG hummingbird.M.SG
- c. un colibrì blu
 a hummingbird.M.SG blue
- d. *un blu colibrì
 a blue hummingbird.M.SG
 ‘a blue hummingbird’

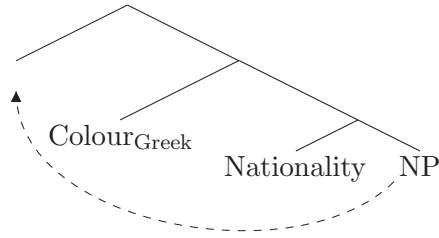
5.6.4 Deriving the orders in a symmetric analysis

In this section we will examine how the CMA facts are derived in a symmetric analysis, as the one put forward by Abels and Neeleman (2012). Starting with the three Greek classes, Shape, Colour_{Greek} and Nationality, the symmetric analysis makes the same predictions as the antisymmetric analysis presented in the previous section. Taking into account that the order in which these adjectives surface is always the universal order, it means that they are always merged on a left branch as in (119). When the adjectives are prenominal, the position in which they surface corresponds to the position in which they are base generated. The postnominal position, on the other hand, is the result of the noun or NP raising past the adjectives. This is comparable to Spec-to-Spec NP-movement in the antisymmetric analysis. Optional movement is marked with a dashed arrow in the following structures:

- (119) *Shape* \succ *Colour_{Greek}* \succ *Nationality*

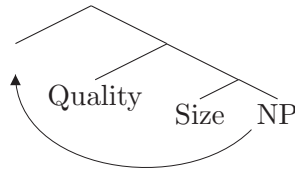


b.



Adjectives of quality and size are also merged on a left branch. The difference with the Greek classes is that movement of the NP or the noun to a position higher than the merging position of these adjectives is obligatory, and not optional:

(120) *Quality* \succ *Size*

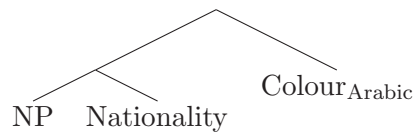


In the CMA data we also saw instances where a quality or a size adjective was permitted prenominally as long as it appeared in the same phrase as a borrowed Greek adjective. As was claimed for the antisymmetric analysis above, it could again be argued that some feature which comes with the Greek adjective is responsible for licensing the prenominal position of the quality or size adjective.

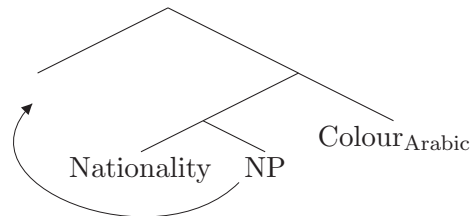
So far the symmetric analysis does not differ from the antisymmetric analysis discussed in the previous section. The contrast is manifested when we consider the derivations for native colour terms. As we have seen throughout the chapter, these appear in the mirror image order with nationality adjectives, but in the universal order with all other classes of adjectives. The mirror image in a symmetric analysis is derived as in (121a), where both adjectives are merged on right branches. If the native colour terms have retained their Arabic features, then it is predicted that these will indeed be right branched, conforming with Modern Arabic adjectives. Nationality adjectives in CMA, on the other hand, seem to be left branched in all environments (i.e. when they appear alone or with an adjective that is not a native colour term), and it is therefore unlikely that these are merged on a right branch on any occasion. This forces us to adopt a position whereby native colour adjectives are right branched, but nationality adjectives are merged on a left branch as represented in (121b). Furthermore, in order to derive the postnominal mirror image order the noun/NP must undergo leftward movement.

(121) $N \succ Nationality \succ Colour_{Arabic}$

a.

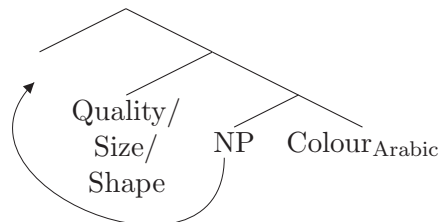


b.



With regard to the order of native colour adjectives when these appear with other classes of adjectives, we again have to assume that the former are merged to the right, as this is what the mirror image order with nationality adjectives suggests. Taking into account that all other adjectives in CMA appear to be merged on a left branch, the structure will look as in (122). Moreover, movement of the NP/noun will be obligatory as all adjectives must be postnominal when at least one of the two adjectives in the phrase is a native colour term.

(122) $N \succ Quality/Size/Shape \succ Colour_{Arabic}$



While we see that the CMA facts can be derived in a symmetric analysis, there are some issues with the derivations that include native colour adjectives. Firstly, both the derivations in (121b) and (122) appear to be marked in the sense of Abels and Neeleman 2007. This is due to the fact that there is obligatory movement of the NP and, in addition, branching in the structure is non-uniform. In fact, in (121b), branching goes from left, to right, and then back to left. In terms of movement, it is not clear under this analysis why this should be mandatory in a phrase such as (123a). Given that shape adjectives appear with optional movement, the less marked option for (123a) would be (123b), where the native colour adjective would be merged in a right branch, the shape adjective in a higher left branch, and there would be no movement. The phrase in (123b),

however, is only acceptable in a context where ‘square’ is focussed.

- (123) a. t^havli t^hetrayono l-apcað
 table.DEF.N square.DEF.N the-white.N
- b. #t^hetrayono t^havli l-apcað
 square.DEF.N table.DEF.N the-white.N
 ‘the square white table’

The requirement for movement in a phrase such as (123a) was attributed to a uniformity rule in the antisymmetric analysis of the previous section. What was suggested was that if a lower Agr⁰ does not bear [N], then any higher Agr⁰ heads will also have to not carry [N], and the absence of [N] would trigger movement. This hypothesis, however, cannot be applied to the symmetric analysis as native colour adjectives are base generated to the right and, consequently, there is no need to stipulate that they come with a movement triggering feature. Moreover, adjectives in Abels and Neeleman’s analysis are adjoined to the NP and as a result they are already categorially non-distinct from the noun. This means that movement is not triggered by the absence of [N]. Why there should be obligatory movement past a shape adjective is, therefore, puzzling.

Another shortcoming of the symmetric analysis is that it does not make any predictions about the morphology–syntax correlation. The generalisation that holds is that adjectives with concatenative morphology are found both prenominally and postnominally, while adjectives with nonconcatenative morphology are postnominal. In the antisymmetric analysis this ensued from movement requirements; nonconcatenative adjectives require obligatory movement, while movement with concatenative adjectives is optional. In the symmetric analysis, however, this generalisation does not hold. The facts, as presented here, suggest that the nonconcatenative classes of Quality, Size and Colour_{Arabic} split into two types: the first two classes are left branched and require raising of the NP past them, while Colour_{Arabic} is simply right branched. As for concatenative adjectives, these only come with optional movement, or obligatory movement when they appear in the same phrase as a Colour_{Arabic} adjective.

Attempting to implement a symmetric approach for CMA appears to be more problematic than an approach in which movement derives all attested orders. If movement is already at CMA’s disposal, which is an assumption supported by the fact that most postnominal adjectives surface in the universal order, then adopting an approach where movement comes in different types seems to be less costly than a proposal in which some adjectives are right branched, others are

left branched, and there are no clear generalisations about when movement is optional and when obligatory.

5.7 Chapter summary and concluding remarks

In this chapter I claimed that by understanding what the trigger for DP-internal movement is, we can grasp adjective distribution in CMA which appears to be problematic at first glance. In particular, I argued that variation in adjective placement and ordering in CMA follows from the different options for maintaining nominality in the nominal phrase, and from allowing three types of movement.

Nominality in the extended nominal projection can be maintained either by the merge of a nominal feature on an Agr⁰ or by movement of a phrase or a head that carries a nominal feature inside the AgrP. The latter option is attested in CMA in the following forms: a) Spec-to-Spec NP-movement, b) roll-up movement of the NP and a phrase that it pied pipes, and c) head movement of a lower Agr⁰ that carries [N] to a higher Agr⁰ that is “empty”.

Our exploration in this chapter also led to the following observations: a) if an adjective comes with concatenative morphology movement will be optional, and b) adjectives with nonconcatenative morphology require obligatory movement, regardless of whether this is roll-up, Spec-to-Spec or head movement. This leaves open an interesting residual problem regarding the correlation between morphology and syntax. My view is that it is not the case that one drives the other. Movement, as we have seen, is not triggered by morphology, but by the lack of [N] on an Agr⁰. One possibility is that morphology aids the child to sort the semantic classes during language acquisition.

A final remark has to do with the unacceptability of phrases in CMA. As we have seen, some phrases were marked with ??, while others with *. When a violation in the order occurs postnominally this is marked as ??, while prenominal violations are marked with *. An example of this was shown in (43):

- (43) *Nationality* > *Shape*
- a. *l-italiko t^hetrayono t^havli
 the-italian.N square.DEF.N table.DEF.N
- b. ??t^havli l-italiko t^hetrayono
 table.DEF.N the-italian.N square.DEF.N
 ‘the square italian table’

The reason violations of the postnominal order are less degraded can be linked back to the facts regarding Arabic, in which predicative adjectives appear to have flexible ordering as a result of one adjective having an indirect source. Moreover, it was noted that the native speakers' judgements were not clearcut when it came to recognising which order is unmarked. Native speakers of English, and Greek, where adjectives appear prenominal, seem to have stronger intuitions about which ordering of adjectives is unmarked in their corresponding languages.²⁷ We could speculate that this might be a processing effect; if the only available prenominal order is the underlying order, then any violation of it will be marked. On the other hand, it is possible to find variation with unmarked orders postnominally.

²⁷As was mentioned in chapter 4, adjectives in Greek are strictly prenominal in monodefinites.

Chapter 6

Conclusion

If I had to summarise the main argument of my thesis in one sentence, it would be the following: a rigid universal adjective order exists, but ordering restrictions can become more flexible as a result of independent syntactic factors.

We first looked at Cinque's (2010) analysis which takes the position that there are two sources of adjectival modification, a direct and a predicative/indirect source. The availability of two sources often leads to apparent violations of the universal order, as indirect modifiers are structurally higher than direct modification adjectives. A consequence of this is that, in languages with prenominal modifiers, an indirect modifier will always precede a direct modifier regardless of the semantic classes of the adjectives involved in the structure. Moreover, if all adjectives in a structure have an indirect source, they are freely ordered. In chapter 4 I argued that adjectives in Greek polydefinites are instances of adjectives in an indirect modification relationship with the noun, hence the flexibility in the ordering.

While Cinque treats all adjectives as being phrasal, I claimed that direct modification adjectives can modify the noun either as heads or phrases. Support for this proposal comes from languages with prenominal adjectives, where adjectives that have phrasal properties (e.g. adjectives that are modified or come with complements) precede "bare" adjectives. In this case, the semantic hierarchy of adjectives need not be observed as APs are merged higher than A⁰s. The order is rigid only if all adjectives in the construction are either APs or A⁰s.

The discussion of whether adjectives are heads or phrases opens avenues for future research. The examination of this issue focussed on Indo-European languages with prenominal modifiers. One avenue, therefore, is to investigate whether the semantic and syntactic properties that are associated with the two different types

of direct modification are observed cross-linguistically. In order to answer this, we need to look at other language families with prenominal adjectives, as well as languages with postnominal adjectives and N-medial orders.

An additional claim that was made and needs further exploration is that unmarked orders come with two interpretations, while marked orders are restricted to a single reading. These conclusions were again drawn from Indo-European data. Consequently, it would be interesting to see whether the interpretational differences hold across languages, and if they are restricted to languages with prenominal adjectives.

A residual question from the Greek polydefinites chapter is whether numerals also have access to the indirect modification source. While they seem to share some properties with adjectives in polydefinites, their distribution seems to be much more restricted.

The Cypriot Maronite Arabic chapter left several theoretical questions open. The first one concerns the interplay of syntax and morphology, and whether the phenomena we find in the language are the outcome of one driving the other. In this chapter I also compared an antisymmetric approach that derives variation in the order via movement, to a symmetric approach that base generates most orders and makes limited use of movement. I concluded that they both have advantages and limitations, but that the antisymmetric approach appears to capture the CMA data more straightforwardly.

The Cypriot Maronite Arabic data, and the line of argumentation that I have pursued in this thesis, point to a more general conclusion: although word order phenomena in this language (and others) appear, at first glance, to refute the idea that there is a universal adjective order, closer scrutiny and deeper understanding of the data leads to the conclusion that the apparent freedom is in fact systematic, and can only be captured under a restricted grammar. Evidence for the existence of robust language universals is, as I hope to have shown, far from scarce.

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