

THE SYNTAX AND SEMANTICS OF NOMINAL MODIFIERS IN SPANISH: INTERPRETATION, TYPES AND ORDERING FACTS

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ABSTRACT. This article provides an overview of the main facts and theories regarding nominal modifiers, with attention to the internal division of the low DP-structure (gender, number and N). The article presents first the notion of modification seen from the perspectives of semantics and syntax (§1); adjective classes are discussed in §2. §3 discusses the contrasts between prenominal and postnominal adjectives; §4 discusses the ordering of adjectives in sequences; §5 reviews the main theories that account for the facts discussed in §3 and §4. §6 moves to prepositional modifiers, presenting facts and theories about them. §7 presents the conclusions.

Keywords. modification; adjectives; intersectivity; restrictivity; adjective ordering; prepositional modifiers; gender; number; nominal domains

RESUMEN. Este artículo consiste en una revisión de los principales hechos empíricos y teorías acerca de la modificación nominal, con atención a la división interna del área baja del SD (género, número, N). El artículo presenta primero la noción de modificación vista desde la perspectiva de la semántica y la sintaxis (§1); las clases de adjetivos se presentan en §2. §3 habla de los contrastes entre adjetivos prenominales y adjetivos postnominales. §4 presenta el orden de adjetivos cuando aparecen en secuencias. §5 discute las principales teorías que han tratado de capturar los contrastes empíricos de §3 y §4. §6 se dedica a los modificadores preposicionales, considerando los hechos empíricos y las teorías acerca de ellos. §7 presenta las conclusiones.

Palabras clave. modificación; adjetivos; intersectividad; restrictividad; orden de adjetivos; modificadores preposicionales; género; número; dominios nominales

The goal of this article is to discuss the main facts (and theories thereof) relating to the empirical problem of how modification structures are established within the DP; by extension, the syntax of the lower domains of the DP will be examined. The article is structured as follows: §1 provides a quick overview of the main theories about the syntax and semantics of nominal modification, and presents the range of constituents that can act as nominal modifiers. Sections §2-§5 concentrate on the syntax and semantics of adjectives and adjective sequences in Spanish. We present first (§2) the taxonomy of the grammatically relevant classes of adjectives, then their ordering facts attending to the prenominal vs. postnominal contrast (§3) and the internal ordering of adjectives within sequences (§4) and, finally, the main theories to account for these orderings (§5). §6 is devoted to prepositional modifiers, taking into account their position and the proposals explaining their ordering and properties. §7 presents the conclusions and standing issues.¹

¹ This article does not cover the case of adjectives that share properties with quantifiers (*diferente* 'different'), determiners (*cierto* 'certain') and pronouns (*mismo* 'self'); this aspect of the grammar of adjectives in Spanish will be discussed in a future monographic issue.

1. Modification and the low syntax of the DP in Spanish: an introduction

Spanish, like other Romance languages, allows for a significant number of different types of modifiers within the DP, including adjectives (1a), prepositional phrases (1b) and relative clauses (1c).

- (1) a. una novela interesante
 a novel interesting
 'an interesting novel'
 b. una novela de Stephen King
 a novel of Stephen King
 'a novel by Stephen King'
 c. una novela que quiero leer
 a novel that want.1sg read
 'a novel that I want to read'

When all these elements are in postnominal position then tend to be ordered in a strict way following the order adjective > prepositional phrase > relative clause.

- (2) a. una novela interesante de Stephen King que quiero leer
 a novel interesting of Stephen King that want.1sg read
 'an interesting novel by Stephen King that I want to read'
 b. *una novela de Stephen King interesante que quiero leer
 c. *una novela de Stephen King que quiero leer interesante
 d. *una novela que quiero leer interesante de Stephen King
 e. *una novela que quiero leer de Stephen King interesante

There are, however, some types of prepositional phrases that can (or must) appear before postnominal adjectives, as we will see.

- (3) a. una novela de detectives interesante
 a novel of detectives interesting
 'an interesting crime novel'
 b. ?una novela interesante de detectives
 a novel interesting of detectives

This article concentrates on the first two types of nominal modifiers, leaving relative clauses outside the material presented here.

1.1. Modification in semantic terms

The semantic definition of modification is not intuitive. What puts together the underlined constituents in (4)?

- (4) a. una casa de piedra
 a house of stone
 b. una situación peligrosa
 a situation dangerous
 c. una amiga entrañable
 a friend beloved

As noted in several works (Heim & Kratzer 1998, Morzycki 2013, McNally 2016), the intuitive use of 'modification' in the literature generally identifies modifiers with expressions that do not express central or inherent characteristics of an entity; nouns are used for the expression of such properties, while modifiers add accidental, peripheral or less relevant properties. This definition would mean that the underlined element in (4b) should not be a modifier, because, as (5) proves, without it we do not obtain a well-formed expression (Bosque 2001).

- (5) #Nos encontramos en una situación.
 us find in a situation
 'We find ourselves in a situation'

Another widely cited example of something intuitively defined as a modifier but which expresses a meaning without which the sentence does not feel semantically complete is in (6) (Abraham & Reuland 1990):

- (6) una casa construida #(en 1932)
 a house built in 1932

Descriptively, modification is what adjectives do with nouns, and what adverbs do to verbs, which as we see is not necessarily adding irrelevant properties. Authors such as Morzycki (2013) have suggested that modification is a cover term, some kind of default box where semanticists put relations that do not fall inside the better defined relations of predicate and argument, or operator and variable. McNally (2016) proposes a definition based rather on what modification does not do:

- (7) An expression α is a modifier if it is an expression that, when combined with another expression β , preserves the semantic type that β had in isolation

A bit of background is necessary in order to understand this definition. Montagovian semantics makes the claim that linguistic expressions act as functions. These functions take objects with a particular semantic status and return, as a result, objects with possibly different semantic status. The most basic relation implemented with this idea is the relation between a predicate and an argument. The predicate is –following so-called Frege's Principle of Compositionality– an unsaturated expression with an open position, and the argument that the predicate takes is a saturated expression that will occupy the predicate's open position. In functional terms, the predicate (if it takes only one argument) is a function that takes objects of type $\langle e \rangle$ (individuals) and produces objects of type $\langle t \rangle$ (propositions), or in the complete notation, objects of semantic type $\langle e, t \rangle$. When a predicate $\langle e, t \rangle$ combines with an individual argument $\langle e \rangle$, the result is an object of type $\langle t \rangle$, which means that the operation that combines an argument and a predicate is not modification because it changes the semantic type ($\langle e, t \rangle \neq \langle t \rangle$).

In contrast, modification is an operation that combines two objects without altering the semantic type of the modified one. Let us see this with an example. In semantics, a noun is a predicate, and therefore type $\langle e, t \rangle$. This means that (8) denotes the set of all entities which have the properties defined by 'novel'.

- (8) novela
 novel

A bona fide modifier like the one in (9) does not make the noun stop being a predicate. The modifier now is another predicate, one that (intuitively) instead of applying to any objects with the properties of novels applies to entities with the properties of a specific subtype of novels.

- (9) novela de detectives
 novel of detectives
 'crime novel'

That is: the operation that adds *de detectives* to *novela* takes a predicate $\langle e,t \rangle$ and returns a semantic type that is, also, $\langle e,t \rangle$. Modification, then, would be a type preserving operation.

Incidentally, this means in principle that an adjective in (10) does not act as a modifier, because it does not combine directly with another predicate in order to return a more complex predicate: it seems to be a predicate that combines with an argument and produces a proposition (type $\langle e,t \rangle$).

- (10) Luis es alto.
 Luis is tall

Such cases have produced different theories about the semantic type of adjectives, the category normally associated to nominal modification. The denotation of a modifier (technically, a predicate modifier), as has been noted, should take as input the same semantic type as it returns. If the modifier applies to nouns, then the type of an adjective should be $\langle \langle e,t \rangle, \langle e,t \rangle \rangle$, which is equivalent to 'adjectives take predicates and produce (more complex) predicates'. If the adjective is used as a predicate (10), then we expect it to be of type $\langle e,t \rangle$. There are three logical solutions to this situation, and the three have been used:

- (i) most adjectives are ambiguous between types $\langle e,t \rangle$ and $\langle \langle e,t \rangle, \langle e,t \rangle \rangle$ (type heterogeneity hypothesis; Siegel 1976)
- (ii) adjectives are basically predicate modifiers $\langle \langle e,t \rangle, \langle e,t \rangle \rangle$ and the predicative use is only apparent (Montague 1970, Wheeler 1972)
- (iii) adjectives are basically predicates $\langle e,t \rangle$ and the predicate modifier use is derived from it (Partee 1995)

Even though we will not elaborate a lot on this issue, a few remarks are in order. The theory in (i) predicts that adjectives that can be used both as modifiers and as predicates have two semantic types, and notes that it is a lexical fact whether an adjective allows both types or not. In fact, some adjectives cannot be used as predicates (11), and a few examples have been noted in English where the adjectives cannot be used as modifiers (Bolinger 1967): at least *awake*, *asleep* and *remiss*.

- (11) a. *Juan es presunto.
 Juan is alleged
 b. *Pedro es siguiente.
 Pedro is next
 c. *Ana es posible.
 Ana is possible

Theories like (ii), where all adjectives are predicate modifiers, need to explain the apparently predicational use; Montague (1970) proposed for such cases that there is a covert noun that the adjective is modifying, as in (12). This is supported by some cases (13) where the interpretation of the adjective is relative to the meaning of the noun: in (13), Leopoldo could be a sloppy person, but skilful as a singer, meaning that the adjective should be interpreted relative to the properties defined by the predicate 'singer'.

- (12) Juan es [\emptyset_N alto]
 (13) Leopoldo es hábil (como cantante).
 Leopoldo is skilful as singer

However, this theory needs to account for cases, such as (11), where no noun seems to be available so that the adjective is licensed in that context. See Meltzer-Asscher (2012) for a detailed overview of such problems.

The third theory, finally, needs to propose that in apparently modifying cases there is a predicational structure, along the lines of (14):

- (14) un chico (que está) dormido
 a boy that is asleep

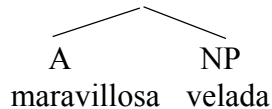
These theories, again, have to explain some counterexample, such as the impossibility of using some adjectives in English, like *asleep*, as direct modifiers of nouns. However, it is fair to say that most semantic proposals about the semantic type of adjectives agree that whether a particular adjective can be used in one or the other type must be specified lexically and a certain deal of idiosyncrasy has to be accepted.

1.2. Modification in syntactic terms

The difficulties noted in the previous section in relation to how to define modification in semantics are replicated in syntax. In fact, Morzycki's (2013) observation that modification is not a semantically homogeneous operation also applies to syntax, where some authors (for example, Cinque 2010) have argued that modifiers can be introduced in distinct syntactic configurations. The syntactic relations that have been proposed for the syntax of modification, illustrated with the phrase in (15), can be reduced to mainly three, represented in (16a), (16b) and (16c).

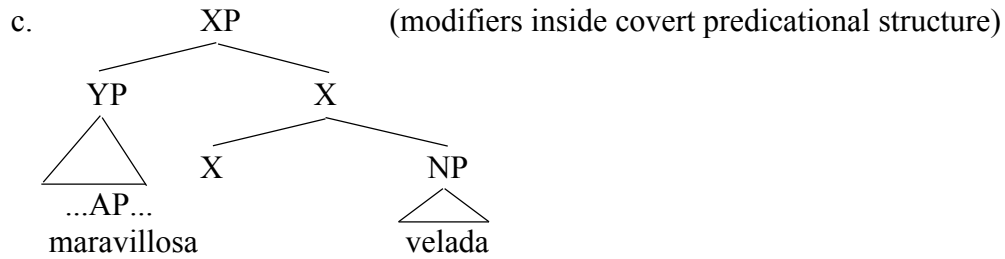
- (15) una maravillosa velada
 a wonderful evening

- (16) a. AP (modifiers as heads)



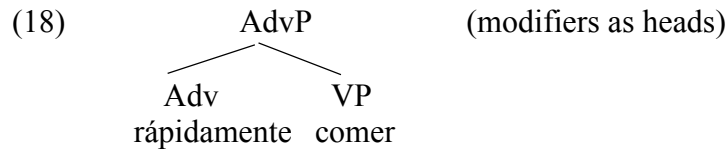
- b. NP (modifiers as adjuncts)



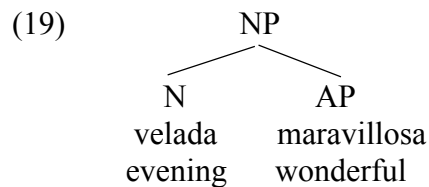


In the first proposal the adjective is a head that c-commands the NP; in other words, the adjective is not a modifier in the proper sense (Abney 1987). The approach cannot be extended to verbal modifiers (17), where the proposal that the adverb is a head selecting the VP has not been made, to the best of our knowledge (18).

(17) comer rápidamente
to.eat quickly



The second proposal treats adjectival modifiers as adjuncts; the proposal varies depending on two factors: whether a version of Kayne's (1994) proposal that adjuncts must linearise to the left is accepted or not, and consequently whether a structure like (19) is accepted, and what the levels where adjuncts can be introduced are.



The third proposal is the most popular one inside cartographic studies (Cinque 1994). In them, the modifiers are specifiers introduced within heads that dominate the NP layer of the phrase. Depending on their properties, as we will see in §5, the adjective can be contained within a more complex syntactic structure, in the form of a covert reduce relative clause, with the result that in syntactically (20a) and (20b) would reflect the same structure.

- (20) a. unas manzanas rojas
some apples red
b. unas manzanas que son rojas
some apples that are red

As we will see in due course (§5), the adjunct approach has some difficulty in relating some correlations between the interpretation of the modifier and its linear position, for instance the fact that in Spanish many postnominal adjectives are interpreted as restrictive (21).

- (21) a. tus amigos simpáticos
 your friends nice
 'from your friends, only those that are nice'
 b. tus simpáticos amigos
 your nice friends
 'your friends, who are nice'

In a theory where adjectives are adjuncts, it is necessary to either explain the correlation between position and interpretation claiming that right adjunction is directly associated to a restrictive interpretation, or propose a complex movement operation that leaves the adjunct behind when the NP moves to a position, and the restrictive interpretation is triggered somehow. The connection between position and interpretation, therefore, is not directly represented in the syntactic structure.

In contrast, in the proposal that modifiers are specifiers of designated heads a proposal that connects both sides is more feasible. If the restrictive relative clause is the only one that can be reduced so as to spell out only one adjective, and some property of that structure triggers movement of the NP to a higher position, then the two sides of the behaviour of adjectives are directly connected. During this article, we will go back to the problem of how to properly express modification in syntax, and we will arrive to the conclusion that –just as in semantics– modification is not a unified syntactic phenomenon, because different types of modifiers behave in different ways syntactically.

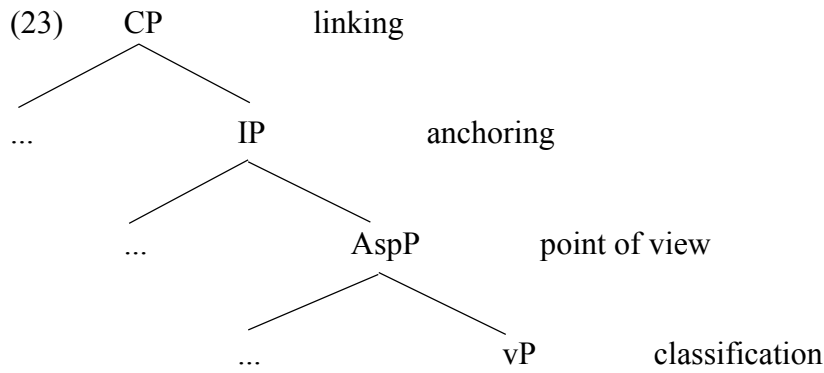
1.3. Domains within the low DP

Another introductory question that we need to pay attention to is the problem of how many distinct domains are found within the DP. In principle, as we will see, modification can happen in any of these domains, but with distinct properties, even though there is one area that has been privileged in the studies of the DP as the prototypical modification area. We will start by presenting three proposals about how the DP has to be partitioned, and comparing the points of agreement and disagreement.

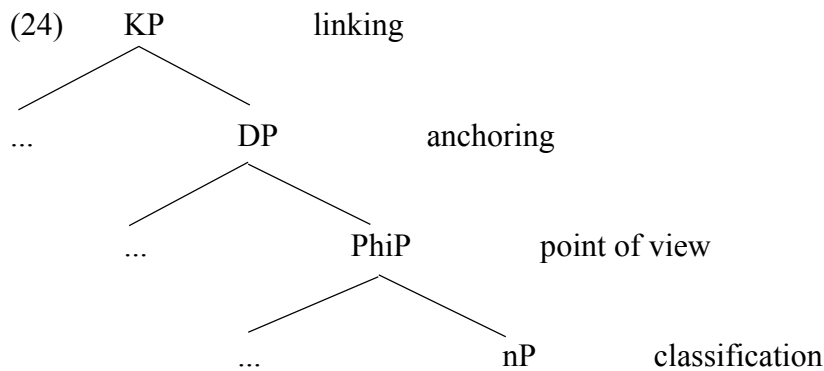
Let us start with Wiltschko (2014). Even though this author concentrates mainly in the areas that should be distinguished within the clause, she does propose a division in four domains for DPs that parallels the one argued for in the case of clauses. In Wiltschko's proposal, the clause and the DP are divided into four universal areas with distinct functions.

- (22) Wiltschko's four domains
 - classification
 - point of view
 - anchoring
 - linking

Within the clause, the functions correspond, respectively, to vP, Asp(ect)P, I(nflection)P and C(omplementiser)P.



Classification is done at the vP level, providing a set of distinct event types that are used to grammatically codify the eventualities of the world. The elements introduced at the level of AspP provide different points of view to present those classes of events, most clearly through the perspective that grammatical aspect imposes on them (progressive, inchoative, perfective, etc.). At the IP level (not to be confused with TP, as Wiltschko makes the point that not all languages anchor through temporal deixis), the eventuality perspectivised at AspP is deictically placed with respect to some external dimension, and at the CP level the whole clause is related to the wider context, for instance discourse (topic, focus, rheme, theme...). At the DP level, the four functions are identified with nP, PhiP (nominal inflectional features, such as number), D(eterminer)P and K(=case)P.



Nouns classify entities and kinds in the same way that verbs classify eventualities. The nominal inflection –number and possibly gender– are used to provide some perspective on the entities such classified, for instance if they are presented as partitioned entities, groups, masses, etc. DP does the anchoring that IP does within the clause, and case (KP) has the function to connect the whole DP to the wider context, in this case typically a predicate context.

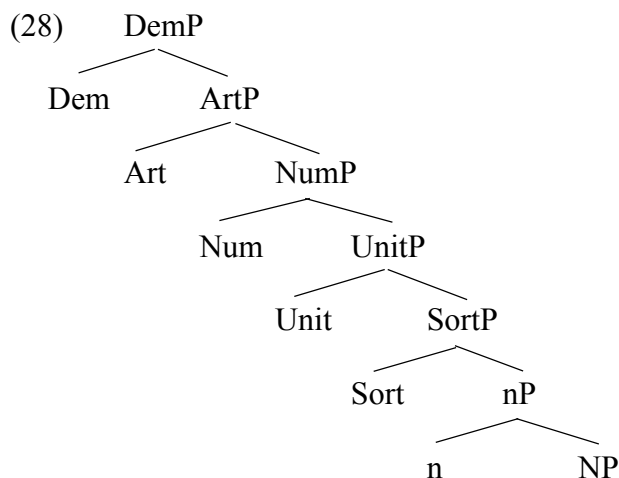
As we can see, there is not designated area here for modification, but it can be inferred from the presentation that the idea is that modification should be possible at different levels, with distinct results. For instance, (25a) could be seen from this perspective as modification at the nP level, to the extent that the underlined PP defines a particular class of milkshake, and (25b) could be seen as modification at the DP level, to the extent that the PP here contributes to the identification of a specific individual belonging to that class.

- (25) a. un batido de chocolate
 a milkshake of chocolate
 'a chocolate milkshake'
 b. el batido de encima de la mesa
 the milkshake of on.top of the table
 'the milkshake on top of the table'

Svenonius (2008) proposes a division that is similar in some respects to Wiltschko's, but which takes into account more centrally two properties: the distinction between noun phrases denoting kinds (26) and those denoting individuals (27), and the imbrication between levels and modification.

- (26) El oso polar se ha extinguido.
 the bear polar SE has extinguished
 'Polar bears have become extinct'
 (27) El oso polar me mordió.
 the bear polar me bit
 'The polar bear bit me'

Here is Svenonius' (2008) approach.



Starting from below, the idea is that nouns start denoting sets of properties; nP has the role of classifying those sets of properties into subclasses –Svenonius suggests that gender is introduced at that level–. Next, SortP defines countable kinds from those sets of properties, and UnitP defines individuals. Above them, numerals, articles and demonstratives are introduced at three different levels of attachment. As we can see, the general architecture of classification > perspective > anchoring is replicated here, with UnitP possibly being a head of transition between the classification part and the perspective area, and ArtP as the lowest head within the anchoring domain. Within classification, Svenonius partitions the domain in four parts: the set of properties, the assignment of those properties to classes, the building of countable kinds from those properties and the individuals defined from those kinds.

Svenonius proposes that adjectives are attached low within the structure, always below UnitP, with differences in meaning relating to the attachment level. If the adjective merges below nP, idiomatic readings can be produced:

- (29) arroz salvaje
 rice wild
 'wild rice'

If the adjective attaches to nP, before SortP has partitioned the noun into count entities, an intersective reading emerges, but dimensional adjectives such as *long*, *short* and *big* are not available –as no partitioned entities have been defined–.

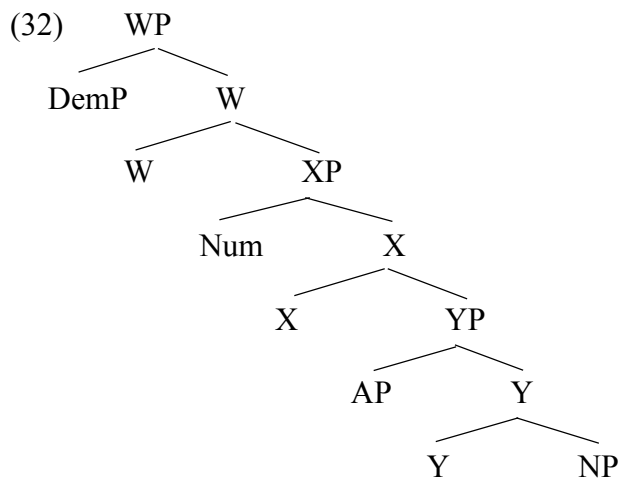
- (30) coche blanco
 car white

If the adjective attaches at the level of SortP, then the dimensions associated to the partition of entities are available. This explains, for him, that adjectives relating to such notions are always more external to the NP than adjectives which do not presuppose a partition (31).

- (31) coche blanco grande
 car white big

We will see more in detail the adjective ordering sequences in §4, but (31) is a good example of an apparently universal restriction that places colour adjectives internal to size adjectives; the division of the NP in domains is one of the two main approaches to how to explain such facts.

A third influential partition of the DP into domains is Cinque's (2005: 318), who proposes the division in (32).



Cinque's proposal is based on the word-ordering restrictions between N, A, Numerals and Demonstratives, and he argues that assuming the universal ordering in (32) –combined with the restriction that only constituents containing the NP can move– derives all attested orders and none of the non-attested ones. The division is similar to Wiltschko's and Svenonius' in that reference is built at a higher layer than perspective (demonstrative > numeral), and both dominate the level where nouns and adjectives are introduced. Like Svenonius, Cinque proposes that adjectives are merged pretty low, although he does not partition the classifying area into subtypes.

The consensus seems to be, then, that the architecture of the DP has the following properties:

- the lowest area is used for classifying
- the highest area is used to define reference
- an intermediate area hosts number and numerals, and can be associated to perspective
- adjectives are merged below the perspective area

An important part of Cinque's proposal is that there is a designated area to introduce adjectives within the hierarchy. Unlike Svenonius, Cinque does not propose (in his 2005 article) a division of the NP area that justifies the ordering restrictions of adjectives. Cinque (1994) suggests that adjectives are ordered inside sequences because the area represented as YP in (32) is in fact a sequence of rigidly ordered heads, each one of them hosting a different type of adjective. This is the second solution to the adjective ordering problem represented in (31), namely that the area where adjectives are introduced consists of a series of highly specific heads, each one designated for a different notional type of adjective. This solution, obviously, is incompatible with an approach where modification is adjunction.

In order to illustrate this approach, consider the sequence that Scott (2002) proposes as an expansion of the YP area in (32).

- (33) Ordinal > Cardinal > Subject Comment > Evidential > Size > Length > Height > Speed > Depth > Width > Temperature > Wetness > Age > Shape > Color > Nationality/Origin > Material

In this proposal, each head is compatible only with adjectives that can be interpreted as the specific notion expressed there, with very fine-grained distinctions (for instance, depth vs. width) that parallel Cinque's (1999) proposal to account for adverbial modification in the verbal phrase. Laenzlinger (2005) groups the required heads into five classes, as represented in (34).

- (34) a. [^{quantificational} Ordinal > Cardinal] >
 b. [^{speaker-orient} Subject Comment > Evidential] >
 c. [^{scalar physical prop.} Size > Length > Height > Speed > Depth > Width] >
 d. [^{measure} Weight > Temperature > Wetness > Age] >
 e. [^{non-scalar phys. prop.} Shape > Color > Nationality/Origin > Material]

In general, the critique that these approaches generally trigger is that this forces grammar to be sensitive to distinctions that otherwise do not seem to have any role in the formal aspects of languages. That there is a projection hosting specifically colour adjectives suggests that at some level, the formal system of grammar contains some kind of Colour Phrase. If such projection exists, then we would expect it to be used by syntax to express distinctions, for instance, between kinds defined by a colour (*grass, blood, lemon...*) and kinds without any relevant colour (*bird, car, house, floor*) or even without colour (*air, kindness, hour*). This does not seem to be the case, and formal processes such as case assignment, agreement or ellipsis appear to be completely blind to colour.

As an interim conclusion, the current landscape about the syntax of the DP can be summarised as follows:

a) There is a general agreement that within the DP a low area, where the classifying and perspective functions are implemented, can be isolated. This includes NP, with its potential divisions, and the heads associated to gender and number

b) Nominal modification is mainly located within this low area, but the way in which it is syntactically implemented is a matter of debate

c) Ordering restrictions among modifiers do not have an explanation that is widely accepted, with some theories proposing a proliferation of highly-specific heads and others proposing more fine-grained partitions of this low area

With this background in place, in the next section we will concentrate on the taxonomy of adjectives, which are the nominal modifiers *par excellence*.

2. Types of adjectives

We will start our overview of phenomena and theories about nominal modification in Spanish with several sections devoted to adjectives, starting here with the grammatically relevant classifications that have been proposed. The goal of presenting these classifications is that the ordering restrictions are usually formulated in terms of the different classes: both the prenominal vs. postnominal contrast (35) and the internal organisation of adjective sequences (36) have been stated as restrictions on the class of adjectives that can occupy a position, or the type of reading that is licensed in a particular position, as we will see in detail in §3 and §4.

- (35) a. un libro divertido ~ un divertido libro
 a book amusing a amusing book
 b. un problema bioquímico ~ *un bioquímico problema
 a problem biochemical a biochemical problem
 c. *un violador presunto ~ un presunto violador
 a rapist alleged a alleged rapist
- (36) a. un queso francés redondo grande
 a cheese French round big
 b. *un queso redondo francés grande
 c. *un queso francés grande redondo
 d. *un queso redondo grande francés
 e. *un queso grande redondo francés
 f. *un queso grande francés redondo

The most general classification of adjectives in Spanish divides them into three classes (Demonte 1999, Picallo 2002, NGLE 2009):

- qualificative adjectives
- relational adjectives
- adverbial adjectives

Qualificative adjectives are, so to say, prototypical adjectives. They are used to describe, can be used as predicates after copulative verbs (37a), are normally gradable (37b) and can appear both before and after the noun they modify (37c, 37d).

- (37) a. Tu nariz está roja.
 your nose is red

- b. una nariz muy roja
 - a nose very red
- c. la roja nariz del payaso
 - the red nose of-the clown
- d. esa nariz roja
 - that nose red

Relational adjectives, whose properties we will describe in more detail in §2.3, can be characterised *prima facie* by their inability to receive degree modification (38a). They do not always allow for a predicative reading (38b), unless they are used to classify subtypes of the notion denoted by the head noun (38c). This is generally viewed as a sign that relational adjectives are not used to describe properties of an entity, but rather establish relations of several types between the entities they denote and the kind expressed by the head noun (Schmidt 1972, Bosque 1993, McNally & Boleda 2004), including relations that can be interpreted as thematic roles (38a, 38d; Bosque & Picallo 1996). Relational adjectives in Spanish are normally restricted to the postnominal position (38e).

- (38) a. la invasión (*muy) alemana de Polonia
 - the invasion very German of Poland
- b. *Esta invasión fue alemana.
 - this invasion was German
- c. Esta revista es trimestral.
 - this journal is three-monthly
- d. la producción quesera de Francia
 - the production cheese-rel of France
- e. *la quesera producción de Francia
 - the cheese-rel production of France

Finally, adverbial adjectives are so-called because, semantically, they play the role that adverbs generally play within clause structure: expressing temporal, modal or aspectual notions, and modifying the manner in which an event is conducted (Picallo 2002; Demonte 1999; Sánchez-Masià 2017); as we will see in §2.2, most adverbial adjectives are subsective or non-subsective. They tend to be divided in two big groups:

a) intensional adjectives, which modify the relation between the referent and the set of properties denoted by the noun, specifying (for instance) that one individual is the best exemplar of a class, that one individual was included in the denotation of the noun at a previous time period, or that there is a possible world where the set of properties denoted by the noun can be applied to a specific individual, among others.

b) event-related adjectives, which modify not the individual *per se* but the individual in relation to an eventuality where it participates, as for instance when we say that someone is an *agudo crítico* 'sharp critic' to say that the person is sharp as a critic, or criticises sharply.

When adverbial adjectives express temporal or modal notions (39 and 40, respectively), these adjectives are considered intensional and normally reject degree modification and tend to be bound to a prenominal position, with individual exceptions.

- (39) a. la anterior capital de Francia

- the previous capital of France (=the city that was previously the capital)
- b. el futuro presidente de Francia
the future president of France (=the person that will be president)
- c. su antiguo trabajo
her old job (=the job she had in the past)
- d. el actual director de la empresa
the current director of the company (=the person that is now the director)
- e. mi próxima casa
mi next house (=the house that will be mine next)
- (40) a. un presunto asesino
an alleged murderer (=someone that is suspected of being a murderer)
- b. un posible ataque militar
a potential attack military (=there may be a military attack)
- c. una probable solución
a likely solution (=this is probably the solution)
- d. una muerte segura
a death certain (=something that is certain to cause death)
- e. su potencial despido
his potential firing (=he will be possibly fired)
- f. la verdadera solución
the true solution (=this is truly the solution)

In the event related or manner reading (41), adverbial adjectives might allow degree modification and can occupy the postnominal position.

- (41) a. un médico habilidoso
a doctor skilful (=someone that is skilful at practising medicine)
- b. una mirada muy rápida
a look very quick (=a look that happens very quickly)
- c. un muy buen escritor
a very good writer (=someone that writes very well)
- d. un ataque agresivo
an attack aggressive (=an attack that is conducted aggressively)

We will go back to this tripartite classification in this section and the rest of the article, but for now we will leave it here and briefly refer to so-called conceptual classifications of adjectives.

Table 1. Basic types of adjectives

Type	Subtype	Example
<i>Qualificative</i>		<i>alto</i> 'tall', <i>guapo</i> 'pretty', <i>elegante</i> 'elegant'
<i>Relational</i>		<i>biológico</i> 'biological', <i>medieval</i> 'medieval'
<i>Adverbial</i>	<i>Intensional</i>	<i>presunto</i> 'alleged'
	<i>Event-related</i>	<i>buen (médico)</i> 'good as a doctor'

2.1. *Conceptual classifications*

As we saw in §1.3, one of the approaches to the ordering facts among adjectives in sequence is to propose that the syntactic area where modifiers are introduced is defined by heads that are associated to distinct types of concept –colour, size, length...–. In fact, the first approaches to word order among adjectives defined the restrictions on the basis of the distinct concepts expressed by each adjective class, resulting in conceptually-based classifications of adjectives. In contrast to the main tripartite division that we sketched before, these classifications put adjectives together by the nature, in the real world, of the notions they express, and not necessarily by their internal properties in grammar –except indirectly, if a particular type of property is systematically grammaticalised in a language in a particular way–.

The most influential conceptual classification of adjectives is due to Dixon (1982), and is as follows:

- (42) a. value (*good / bad*)
 b. dimension (*long, big, small*)
 c. physical property (*fresh, hard, strong*)
 d. speed
 e. human propensity
 f. age
 g. color

Dixon's proposal was that these classes define the natural order of adjectives in the sequence, with colour being the most internal one of the adjectives with respect to the noun, and value being the most external one.

A second conceptual classification used for the same purpose is Sproat & Shih (1991).

- (43) a. quality
 b. size
 c. shape
 d. colour
 e. provenance

We can see in (44) that, even though five adjectives in a row always sound unnatural, the best ordering is the one reflected in (43), with (43a) as the most external.

- (44) a. un coche italiano rojo redondo enorme elegante
 a car Italian red round huge elegant
 b. *un coche rojo redondo italiano enorme elegante
 c. *un coche enorme rojo elegante italiano redondo
 d. *un coche elegante italiano enorme redondo rojo
 e. ...

Demonte (1999) largely follows these conceptual / notional classifications, although enriching them with what she considers 'valorative' adjectives, involving a significant value judgement on the part of the speaker (*maravilloso* 'wonderful', *delicioso* 'delicious', *horrible* 'horrible'), and 'human propensity' adjectives (*vago* 'lazy', *irrespetuoso* 'disrespectful', etc.).

A general intuition that has been expressed in several forms is that modifiers that are more subjective –for instance, involving a judgement from the part of the speaker– are located more externally than modifiers that, in principle, can be evaluated objectively; such adjectives also show a preference for the prenominal ordering (Hanssen 1910, Lenz 1920, Gili Gaya 1943, Lapesa 1975). The origin adjectives, and other concepts that are expressed by relational adjectives, are the most internal ones in the sequence, while highly evaluative adjectives (*maravilloso* 'wonderful', *espantoso* 'horrible'...) are generally more external.

In fact, Cinque (1994) attempted a conceptual classification of adjectives that expresses the ordering restriction as a result of the orientation that the adjective takes, not directly of the conceptual domain to which the adjective applies.

- (45) a. possessive
 b. speaker-oriented
 c. subject-oriented
 d. manner
 e. thematic

In order to illustrate the classification, we need to concentrate on an example that allows a thematic interpretation of relational adjectives, which as we clarified in the introduction to this section involves interpreting the relational adjective as the agent or patient of the eventuality associated to head noun.

- (46) la invasión alemana de Italia
 the invasion German of Italy

The adjective in (46) has a thematic reading, as the agent of the invasion. Another postnominal adjective can get a manner reading, expressing (as an adverbial adjective) how the invasion was conducted.

- (47) esa invasión alemana brutal
 that invasion German brutal

The manner adjective is more external than the thematic one. Crucially for Cinque, if the adjective *brutal* is prenominal, rather than getting a manner reading it gets a subject-oriented interpretation, paraphrasable as 'it was brutal of the Germans to invade Italy'.

- (48) esa brutal invasión alemana
 that brutal invasion German

That this reading is forcefully prenominal suggests to Cinque that the adjective that gets this interpretation is even more external than the manner one, to a point that the NP cannot move above it.

Even higher than the subject-oriented adjectives, Cinque places the speaker-oriented adjectives, which introduce the evaluation made by the speaker:

- (49) esa lamentable brutal invasión alemana
 that regrettable brutal invasion German

Finally, for Italian (language where possessives behave as adjectives, as they are compatible with determiners), possessive adjectives are even higher.

- (50) *la loro brutale aggressione*
 the their brutal aggression

Thus, in terms of the conceptual side of adjectives, we find two major trends: one bases the taxonomy on the conceptual domain where the adjective applies, using categories of the 'real' world rather than grammar-internal notions. The other one abstracts away from these notions and concentrates on the orientation: adjectives defining properties related to argument structure are lower than adjectives expressing properties of eventualities; adjectives modifying agents are higher than both, but lower than adjectives that introduce the evaluation from the part of the speaker.

Note also that these classifications tend to partition in a more fine grained system the qualificative adjectives, and pay less attention to relational and adverbial adjectives, even though they can be included in the classification. Cinque subsumes relational adjectives into his thematic adjectives, and from adverbial adjectives he only considers manner adjectives.

Let us move to a semantic taxonomy that takes into account the entailment patterns of adjectives.

2.2. *Intersective vs. non intersective adjectives and other semantic classifications*

Semantic classifications of adjectives concentrate rather on the entailments that adjectival modification has on the properties associated to the whole nominal expression. In the works of Lewis (1970), Parsons (1970), Cresswell (1973), Kamp (1975), Kamp & Partee (1995) and Partee (1995, 2010), among others, three main classes of adjectives are differentiated in terms of the entailments that they produce:

- Intersective adjectives
- Subsective adjectives
- Non-subsective adjectives

An intersective adjective (in general, an intersective modifier) imposes the entailment that the entity the modified expression applies to has the properties of both the modified expression and the modifying expression. In more abstract terms:

- (51) If α is an expression that contains an intersective modifier β and a modified expression γ , then if x is α , then it follows that x is β and x is γ

Adjectives such as *redondo* 'round', *triangular* 'triangular', *rojo* 'red', *blanco* 'white', or *español* 'Spanish', and prepositional phrases equivalent to these, such as *de España* 'from Spain', are intersective modifiers –that is, many qualificative adjectives and some relational adjectives, such as those related to nationality and procedence–. In the following example, it follows that if it is true that Juan is a Spanish archeologist, Juan is Spanish and Juan is an archeologist.

- (52) *Juan es un arqueólogo español.*
 Juan is an archeologist Spanish ('Juan is a Spanish archeologist')
 → *Juan es un arqueólogo*
 Juan in an archeologist

→ Juan es español
 Juan is Spanish

The term 'intersective' is related to the nature of this entailment. If we assume that *archeologist* is a function that picks up all entities which are archeologist, and that *Spanish* picks up all entities which are Spanish, the expression *Spanish archeologist* picks up the entities that are in the intersection between the two sets, that is, entities that are both archeologists and Spanish.

Non-intersective adjectives are divided into two big groups. The first group are subsective adjectives, and these define subclasses within the denotation of the modified expression. They do not license the entailment that if the entity is β , then it is also γ , because γ applies to the set of properties denoted by β . Consider the following example, that includes the subsective adjective *vulgar* 'vulgar'. Many relational adjectives, expressing subclasses of entities, and the manner-oriented adverbial adjectives, are placed here.

- (53) Juan es un latinista vulgar.
 Juan is a latinist vulgar ('Juan is a vulgar Latinist')
 → Juan es un latinista
 Juan is an archeologist
 ↷ Juan es vulgar
 Juan is vulgar

The second subgroup of non-intersective adjectives are so-called non-subsective adjectives or intensional adjectives. For them, if α can be applied to x , it does not follow that x is either β or γ . Most of the temporal and modal adverbial adjectives belong to this semantic class. Take as an example the modifier *anterior* 'previous'.

- (54) Juan es el anterior presidente de Rumanía.
 Juan is the former president of Romania
 ↷ Juan es el presidente de Rumanía.
 Juan is the president of Romania
 ↷ Juan es anterior.
 Juan is former

The two groups allows for further subdivisions. McNally (2016: 448-449) divides subsective adjectives –those that only allow the entailment that the modified expression truthfully applies from the entity– into three classes. The first involves the class that Bosque (1993) calls classifying relational adjectives, whose role is to define taxonomies of the entities denoted by nouns, as opposed to expressing arguments of an eventive noun.

- (55) a. Luis es un químico orgánico.
 Luis is a chemist organic
 b. Marta es una física nuclear.
 Marta is a physicist nuclear
 c. Ana es una médica patológica.
 Ana is a doctor pathological

In lexicalist approaches, this class of subsective modifiers gives rise to so-called bracketing paradoxes (Beard 1991), as they arguably involve the adjectivalisation of phrases such as *química orgánica* 'organic chemistry', *física nuclear* 'nuclear physics' and *medicina patológica* 'pathological medicine'.

The second class of subsective adjectives involves modified expressions which can be related to events, where the semantic contribution of the modifier affects the event and not the individual. This is the case in one of the possible readings of the famous class of examples illustrated below (cf. Siegel 1976, Larson 1998).

- (56) Lourdes es una escritora maravillosa.
 Lourdes is a writer wonderful

In one reading, irrelevant here, *maravillosa* 'wonderful' applies to the individual Lourdes, and it has an intersective reading where Lourdes is both a writer and a wonderful person. This is not the most natural reading, however. The most natural reading is one where Lourdes is a writer that does her job (writing) wonderfully; in this reading Lourdes could be a horrible person, but a wonderful writer.

The third class of subsective adjectives includes adjectives which can only be evaluated once a particular comparison class is established. Size adjectives are the clearest members of this class. Unlike what happens in the case of an adjective like *round*, it cannot be determined whether an entity is small or large unless the standard size of a particular class of objects is taken into account. An elephant can be small for an elephant, but pretty big for a regular animal; a cockroach can be big for a cockroach, but small for a regular animal. Note that this third class is an example of qualificative adjectives that get a subsective reading.

- (57) Este animal es una cucaracha grande.
 this animal is a cockroach big
 → Este animal es una cucaracha.
 this animal is a cockroach
 ↷ Este animal es grande.
 this animal is big

- (58) Este texto es un cuento largo.
 this text is a tale long
 → Este texto es un cuento.
 this text is a tale
 ↷ Este texto es largo.
 this text is long

Non-subsective adjectives are generally divided (Partee 2010) in so-called plain non-subsective (also called 'intensional'), which do not allow any entailment, and privative, which force the contrary entailment that the entity is not a member of the class defined by the modified expression. Modal adverbial adjectives are members of the plain non-subsective class:

- (59) potencial 'potential', presunto 'alleged', así llamado 'so-called', probable 'probable, likely', putativo 'putative', dudoso 'questionable'...

If we apply an expression such as *un presunto violador* 'an alleged rapist' to an entity in a truthful way, we cannot infer from that either that he is a rapist or that he is not; similarly, in cases such as *posible problema* 'potential problem', *dudosa generalización* 'questionable generalisation' and *así llamada solución* 'so-called solution'.

Privative adjectives, such as *falso* 'fake', *pasado* 'past', *anterior* 'previous', *espurio* 'spurious', *imaginario* 'imaginary', *legendario* 'mythical' or *inventado* 'fabricated', license the entailment that the entity does no longer belong to the class defined by the noun:

- (60) Este objeto es una pistola falsa.
 this object is a gun fake
 → Este objeto no es una pistola.
 this object not is a gun

These adjectives tend to be considered also adverbial, at least in the sense that they involve notions that cancel the entailments of the noun and therefore behave similarly to negative adverbs.

In current analyses of the semantics of adjectives, there is a distinct tendency to try to reclassify apparently subsective and non-subsective adjectives as intersective in some appropriate sense, with the goal to reduce all modification to one single operation, as simple as coordination of properties. Two trends are recognisable here. The first one is to make apparently subsective adjectives intersective by having them predicate not directly of the individual denotation of the noun, but from a variable denoting some other notion that the noun carries. The 'subsective' adjective, then, would be intersective once it is taken as predicated from that variable.

McNally & Boleda (2004) provide one instance of this type of analyses when they argue that apparently subsective relational adjectives are intersective, and predicate from the kind interpretation of nouns –as opposed to the tokens that they can also denote–. From (61), if we think about tokens, it is true that we cannot make the entailment that the 'entity' that is a biologist is also molecular. However, if we think about kinds (roughly, abstract types of objects), it is true that the type of biologist is molecular, in an intersective reading.

- (61) Pedro es un biólogo molecular.
 Pedro is a biologist molecular
 'The type of biologist that Pedro instantiates is molecular'

This is done at the cost of complicating the denotation of a noun by introducing silent variables; in their case, they propose that all nouns denote relations between kinds and individuals instantiating these kinds; the relational adjective predicates from the kind variable (x_k).

- (62) $[[\text{biologist}]] = \lambda x_k \lambda y_0. \text{realises}(x_k)(y_0) \ \& \ \text{biologist}(x_k)$

Von Stechow & Heim (1999) and Landman (2001) propose that some subsective adjectives, those related to event readings, contain an open variable that denotes the role in which the property is displayed. (63) would be intersective because the adjective predicates of the property relative to the role (64).

(63) un buen médico
a good doctor
'good as a doctor'

(64) $[[\text{buen}]] = \lambda P \lambda x. \text{good as}(P)(x)$
 $[[\text{buen médico}]] = \lambda x. [[\text{good as doctor}]](x) \ \& \ [[\text{doctor}]](x)$

The analysis would have to assume that before combining with the noun, the adjective takes an argument ('as doctor') that can remain silent. Again, the solution simplifies the semantic typology of adjectives at the cost of multiplying the (covert) variables that adjectives and nouns must carry.

The second solution to the problem involves vagueness, and has specifically been proposed for the case of privative modifiers such as (65).

(65) un león de piedra
a lion of stone

We know that a lion cannot be made of stone, so the modifier should have a privative reading, in principle. Partee & Kamp (1995), however, claim that this conclusion is not necessary. An account based on vagueness can treat this modifier as intersective at the cost of claiming that speakers can extend the normal denotation of a noun like *león* 'lion' in order to accept entities that normally would not be lions. In other words, we calibrate the denotation of the noun and in (65) accept that an entity which is not clearly 'not a lion' can fall within the denotation of the expression.²

² Beyond this classification, there are several classes of adjectives whose semantic behaviour has been considered interesting from the perspective of what modification is. Morzycki (2013) provides an overview about the main classes, which we summarise with comments in what follows. One class of substantive adverbial modifiers are frequency adjectives (Bolinger 1967, Stump 1981, Larson 1998, Schäfer 2007, Bosque 2007, Gehrke & McNally 2015).

- (i) a. Me tomo un café ocasional.
me have a coffee occasional
'I have an occasional cup of coffee' (=I occasionally have a cup of coffee)
b. Se fuma dos paquetes diarios.
SE smokes two packages daily
'He smokes two packages every day'

Interestingly, such modifiers can be interpreted as if they had scope outside the DP, over an event variable. When an event is lacking, they can produce ungrammaticality (Bosque 2007).

- (ii) *En la mesa está su paquete diario.
on the table is his package daily
Intended: 'On the table there is the package he has every day'

See also Nunberg (1984), Heim (1985), Beck (2000), Lasersohn (2000) and Barker (2007) on identity adjectives (*mismo, diferente*); Moltmann (1997) and Morzycki (2002) on proportional adjectives (*completo, parcial*); Larson (2000) and Schwarz (2006) on *incorrecto* 'wrong' and Abusch and Rooth (1997) on epistemic adjectives (*no revelado, desconocido, oculto, confidencial*).

Table 2. Semantic types of adjectives

Type	Subclasses	Equivalence with basic types
<i>Intersective</i>		Most qualificative adjectives
<i>Subsective</i>	Event-related	Adverbial adjectives (event-related ones)
	Classificative	Relational adjectives
	Size- and other relative properties [disputed]	Qualificative adjectives
<i>Non-Subsective</i>	Plain subsective ³	Adverbial adjectives (mainly modal)
	Privative	Adverbial adjectives (mainly temporal and veracity adjectives)

2.3. More about relational adjectives

Relational adjectives (Bally 1944, Giorgi & Longobardi 1991; Bosque 1993, 2006; Bosque & Picallo 1996; Fábregas 2007) are, as we mentioned briefly before, adjectives whose main function is to express relations between types of entities, one denoted by the head noun and another one typically denoted by its morphological base. In (66), the relational adjective expresses a relation between the class 'economy' and the class 'problem'.

- (66) un problema económico
a problem economical

There are two main uses of relational adjectives. The one illustrated in (66) is classificatory, and it is assumed to be the basic one in most theories: it defines a subclass of the class denoted by the head noun, stating that there is a pertinent relation between the notion expressed by the adjective and the subclass denoted by the whole phrase. When the noun can be associated, notionally or structurally, to arguments, the relational adjective can denote such participants, typically the agent (67a) or the patient (67b); goal-oriented readings are also attested (67c), together with different locative readings (67d, 67e), instruments (67f), temporal periods (67g), origin (67h) and purpose (67i) (Bosque 1993).

- (67) a. una decisión presidencial importante
a decision presidential important
'an important decision by the president'

³ It is also frequent to find in the literature the term 'intensional' to characterise some adverbial adjectives, mainly the non-subsective ones. However, 'intensional' and 'non-subsective' are not co-extensive terms in the proper sense: adjectives such as auténtico 'real', completo 'complete' and total 'total', in degree-related uses, are also intensional even though they allow the entailment that the NP predicates from the referent. See Sánchez-Masià's (2017: chapters 3 and 4) excellent study of this type of adjectives for further details about their semantic analysis.

- b. la producción novelística de Galdós
the production novel-rel of Galdós
'the production of novels by Galdós'
- c. ofrendas marianas
offers Mary-rel
'offers to (Virgin) Mary'
- d. desembarco lunar
disembarkation moon-rel
'moon disembarkation'
- e. viaje estelar
trip star-rel
'trip to the stars'
- f. llamada telefónica
call phone-rel
- g. huelga veraniega
strike summer-rel
'summer strike'
- h. calor solar
heat sun-rel
- i. utensilios culinarios
tools kitchen-rel

Relational adjectives can be identified on the base of several tests. The first one is that they reject degree modification; they only accept proportional adverbs that measure the pertinence of the relation they express.

- (68) a. una producción casi totalmente novelística
a production almost totally novel-rel
'a production that almost exclusively consists of novels'
- b. *una producción bastante novelística
a production quite novel-rel

Relational adjectives cannot be coordinated with qualificative or adverbial adjectives.

- (69) a. *una producción rápida y novelística
a production fast and novel-rel
- b. *una producción interesante y novelística
a production interesting and novel-rel

Relational adjectives cannot appear in prenominal position.

- (70) *su novelística producción
his novel-rel production

Relational adjectives must appear always more internal to the noun than qualificative adjectives of any kind.

- (80) a. un coche francés grande
 a car French big
 b. *un coche grande francés
 a car big French

Relational adjectives seem to carry interpretable number features (Bosque 2006). With other classes of adjectives, the coordination of two singular adjectives cannot be combined with a plural head noun.

- (81) *los embajadores alto y guapo
 the ambassadors tall and handsome
 Intended: 'the two ambassadors, the tall one and the handsome one'

If the adjectives are relational, then the coordination can happen as described, and a distributive reading is obtained where each one of the two ambassadors is related to one of the adjectives.

- (82) los embajadores mexicano y argentino
 the ambassadors Mexican and Argentinian
 'the Mexican ambassador and the Argentinian ambassador'

Finally, some relational adjectives can be reclassified as qualificative adjectives, and they get either an idiomatic reading (*católico* as 'healthy') or a reading by prototypicality (*español* as 'with the properties that are typical of a Spaniard'). In such cases, they allow degree modification and can occupy a prenominal position.

- (83) No me siento muy católico.
 not me feel.1sg very catholic
 'I don't feel too healthy'
 (84) el españolísimo pasodoble
 the Spanish-splt pasodoble
 'the pasodoble, which is typically Spanish'

2.4. Descriptive adjectives

NGLE (2009: §13.2i-j, 13.12b) notes that there is a set of adjectives that have similarities to relational adjectives, but cannot be treated as such. These are so-called descriptive adjectives, which are used to provide taxonomies of entities based on their internal properties.

- (85) a. una línea recta
 a line straight
 b. una piedra preciosa
 a stone precious
 c. el vino blanco
 the wine white
 d. la carne roja
 the meat red
 e. el café descafeinado
 the coffee decaffeinated

- f. un puente colgante
 a bridge hanging

Similarly to relational adjectives, they define subclasses of objects instead of describing the qualities of the entity; also, they cannot be prenominal (86a), cannot be graduated (86b) and cannot be coordinated to qualificative adjectives (86c).

- (86) a. *el blanco vino
 the white wine
 b. *un vino muy blanco
 a wine very white
 c. *un vino blanco y refrescante
 a wine white and refreshing

However, in contrast to relational adjectives, they are normally not derived from nouns. They are either morphologically underived (*blanco, azul, rojo*) or derived from verbs (*descafeinado, colgante*). Also, unlike relational adjectives in the proper sense, a coordination of two descriptive adjectives in the singular does not give the distributive reading attested in (82) with plural nouns.

- (87) *los vinos blanco y tinto
 the wines white and red

It is tempting to relate the two facts: that the coordination of two singulars is not interpreted as a distributive plural and that there is no nominal base involved here. However, the two properties are not coextensive. Take for instance ordinal adjectives, which are not related morphologically to nouns:

- (88) primero 'first', segundo 'second', tercero 'third'

They can act as relational adjectives when they define the position of (for instance) rows in terms of the number they are related to, and then they allow the coordination of two singulars.

- (89) las filas primera y segunda
 the rows first and second

The properties of descriptive adjectives are understudied still.

With this background in mind, let us now move to the ordering of adjectives in Spanish. As we will see, the classes presented here will be relevant during the discussion.

3. Ordering facts

Our presentation of the ordering facts concentrates first on the prenominal vs. postnominal contrast; the relative ordering of adjectives with respect to each other is discussed in §4.

We will start with a general observation, which is due to Cinque (2010): in Italian and Spanish, it is frequently the case that the prenominal position is related to only one interpretation, while the postnominal position allows two interpretations, the one that the prenominal one allows, and an additional one.

- (90) A N A
 reading 1 *reading 1*
 reading 2

In terms of the analysis, this suggests for many researchers that the prenominal position is underived, and therefore linked to one single syntactic position. The postnominal position is, in contrast, derived through movement (of a constituent containing N). The first reading is preserved because some postnominal adjectives are prenominal ones, with N moving past them; the second reading emerges because in them the adjective is in a higher position, which whenever present forces movement of a constituent carrying the noun. We will give more details about this in §5, and for the time being we will concentrate on the facts.

3.1. *Types of adjectives and ordering facts*

Before we get into some fine-grained contrasts, it is important to note that in Spanish adjectives can be classified in two groups depending on their flexibility with respect to the noun.

Relational adjectives are bound to a postnominal position, as we saw. Only when they are interpreted as qualificative can they appear in prenominal position.

- (91) a. un análisis sintáctico
 an analysis syntactic
 b. *un sintáctico análisis
 a syntactic analysis

Adverbial adjectives, at least many of those related to temporal and modal readings, are bound to the prenominal position.

- (92) a. una presunta plagiadora
 an alleged plagiarist
 b. *una plagiadora presunta
 a plagiarist alleged

Some others, as we already mentioned, do allow two positions.

- (93) a. la parada próxima
 the stop next
 b. la próxima parada
 the next stop

And qualificative adjectives generally allow also two positions:

- (94) a. una deliciosa manzana
 a delicious apple
 b. una manzana deliciosa
 a apple delicious

This very schematic overview already triggers two kinds of questions:

- What determines whether an adjective (or a class of adjectives) has a fixed position or a flexible position?
- Whenever the two positions are available, what are the factors that associate to each one of the positions?

In the best case scenario, the answer to both questions will allow for a unification of the explanations: that each position is linked to very specific interpretations and morphosyntactic conditions, in a way that an adjective with a fixed position reduces to an adjective that can only have one of the readings that adjectives with more than one position allow. In order to see if this is a fruitful line of research, we first must concentrate on the adjectives that have more than one position, and spell out the properties associated to the prenominal vs. the postnominal position.

3.2. Prenominal and postnominal orderings: interpretative effects and conditions

Cinque (2010) is, to date, the most detailed presentation of the meaning differences associated to the prenominal vs. postnominal placement of adjectives. Even though he describes the properties for Italian, we will see that most are replicated without qualifications in Spanish.

3.2.1. Individual level and stage level readings

As it is well-known (Bolinger 1967, Carlson 1977) adjectives can be linked to two readings that, roughly, apply to the inherent properties of the individual (Individual level reading) and to the situation where the individual is found (Stage level reading). Some adjectives, such as the relational and descriptive ones, only have an individual level reading (95); others only have a stage level reading (96) and many allow two readings depending on syntactic, semantic and pragmatic factors (97).

- (95) español 'Spanish', mortal 'mortal', cierto 'true', falso 'false'
- (96) desnudo 'naked', descalzo 'barefoot', lleno 'full'
- (97) suave 'soft', dulce 'sweet', amable 'nice', sucio 'dirty'

See Fábregas (2012) for a detailed overview of the IL vs. SL distinction. Here what is relevant for us is the observation that in Spanish the prenominal position forces an Individual level reading, while the postnominal position allows both IL and SL readings (Ferris 1993, Sadler and Arnold 1994, Svenonius 1994, Larson 1998, Cinque 2010: 6-7). An adjective like *invisible* 'invisible', when interpreted as IL, refers to an inherent property of some stars, that are such that they produce visible light; when interpreted as SL, it refers to a situation where someone can see some stars. Some stars that will be visible in the IL reading will not be visible in the SL reading, for instance if they are below the horizon.

Note that (98a) only has the first reading (IL), while (98b) has both.

- (98) a. Las invisibles estrellas de Andrómeda producen gran fascinación.
 the invisible stars of Andrómeda produce great fascination
 'The stars of Andromeda that are invisible due to their properties...'
- b. Las estrellas invisibles de Andrómeda son muchas.
 the stars invisible of Andromeda are many
 'The stars of Andromeda that are invisible due to their properties...'
 'The stars of Andromedia that cannot be seen right now...'

Similarly, in (99a) the only interpretation is that we associate a particular presenter with the quality of being –as a person– nice, while (99b) allows also the reading where we don't know if he is generally a nice person, but we state that he acted in a nice way.

- (99) a. Un amable presentador nos ayudó en esa fiesta.
 a nice presenter us helped in that party
 'A presenter, that is a nice person...'
 b. Un presentador amable nos ayudó en esa fiesta.
 a presenter nice us helped in that party
 'A presenter that is a nice person...'
 'A presenter that behaved nicely at that moment...'

It follows from this restriction that adjectives that reject SL readings will be unnatural in prenominal position, and this is confirmed.

- (100) a. *mi desnuda amiga
 my naked friend
 b. *una descalza bailarina
 a barefoot dancer
 c. *la llena botella
 the full bottle
 d. *el vacío armario
 the empty wardrobe

3.2.2. Restrictivity

Restrictivity is quite difficult to define (Jespersen 1924: chapter 8; Lucas 1975; Bouchard 2002; Larson & Marusic 2004; Piñón 2005; Umbach 2006; Fabricius-Hansen 2009; Alexiadou 2012; Martin 2014). We will here assume Alexiadou's (2012) formalisation where a modifier is restrictive if it targets a proper subset of the set of entities denoted by the noun.

(101) An adjective A restrictively modifies N in c iff:

$$[[A N]]^c \subset [[N]]^c$$

An adjective A nonrestrictively modifies N in c iff:

$$[[A N]]^c = [[N]]^c$$

As the reader will have noted, this definition only defines restrictivity for intersective or subsective adjectives; it does not apply to non-subsective adjectives because that type of modification does not entail that the whole has the properties of N. In other words: non-subsective adjectives are, by definition, not restrictive. See Pfaff (2015) and Sánchez-Masià (2017) for detailed discussion of these semantic problems.

In Spanish, prenominal adjectives are necessarily nonrestrictive, while postnominal adjectives can be restrictive or nonrestrictive.

- (102) a. las aburridas clases de Elena
 the boring classes of Elena
 'Elena's classes, which are all boring...'
 b. las clases aburridas de Elena
 the classes boring of Elena

'Elena's classes, which are all boring...'
 'The classes taught by Elena that are boring...'

In descriptively-oriented works in Spanish (eg., Salvá 1830: 12.4.2.1a-4a; Bello 1847: §47; Seco 1954; Rojo 1975), absence of restrictivity in prenominal position is considered the hallmark of the ordering distinction for qualificative adjectives. The intuition of the speaker is very strong in this sense: in (103a) we interpret that every letter written by Malva was offensive, while in (103b) the restrictive reading is preferred by speakers –even though the second is also allowed.⁴

- (103) a. todas las ofensivas cartas de Malva
 all the offensive letters by Malva
 b. todas las cartas ofensivas de Malva
 all the letters offensive by Malva

Gómez Torrego (2007: 60) proposes that some prenominal adjectives are also restrictive.

- (104) un pequeño detalle
 a small detail

It is true that, out of context, not every detail is small. However, it does not seem, contra Gómez Torrego, that the adjective in (104) can really act as restrictive. In other words, the adjective is not reducing the set of details to those that are small, as the plural shows very clearly.

- (105) ??Solo te traigo algunos pequeños detalles; los grandes te los doy en Navidades.
 only you bring some small details the big you them give in Xmas
 Intended: 'I only bring you some small presents; the big ones I will give you in Christmas'

It seems that here the speaker is assuming that part of the relevant understanding of what kinds of details are involved in the conversation is that those details will be, by definition, small. The prenominal position could be associated to focus, as the main property of details –as defined in the context– that the speaker wants to highlight. Note that even if we move to a related, though distinct example, the signals that the prenominal adjective is nonrestrictive remain:

- (106) un pequeño error
 a small mistake
 (107) ??Solo he corregido los pequeños errores.
 only have.1sg corrected the small mistakes
 Intended: 'I have only corrected the mistakes that were small'

⁴ This property has a corollary, noted by Bolinger (1972). Given that prenominal adjectives are not restrictive, it is easier to use them where the whole DP refers to an entity that has already been identified in the discourse: as the entity is already identified, there is no (direct) reason to use the adjective in order to restrict it and identify the referent. A DP like *el amable funcionario* 'the nice official' can naturally be used –anaphorically– to refer back to a referential expression such as *Ese funcionario* 'that official', but it is less natural as a cataphoric expression, in contrast to *el funcionario amable* 'the official nice'.

See §3.3 and §3.6. for other possible (perhaps fake) counterexamples.

The association between restrictivity and the postnominal ordering is so tight in Spanish that it influences the position of relational adjectives under very concrete conditions. As it is well-known, proper names can refer by themselves to individuals, without the need to restrict its reference through determiners or modifiers (cf. *Pilar Miró*). With proper names we can find situations where a relational adjective is merged prenominally (*la madrileña directora Pilar Miró*, 'the from-Madrid director Pilar Miró'). As NGLE (2009: §13.13f) notes, here the prenominal position might be due to the fact that if the adjective was postnominal it would trigger the wrong implication that there is more than one director called Pilar Miró, and the origin adjective specifies which one (*#la directora Pilar Miró madrileña*). The construction with the postnominal adjective next to the noun *directora* 'director' is also possible (*la directora madrileña Pilar Miró*), but note that in such cases the adjective restricts the extension of the set of directors to only those from Madrid before the proper name identifies one specific referent.

3.2.3. Modal vs. implicit relative clause readings

Adjectives like *posible* 'possible' have two interpretations, identified by Larson (2000) as the modal vs. the implicit relative clause. In the purely modal reading, *posible* is a synonym of *potencial* 'potential'.

- (108) Mary interviewed every possible candidate.
'Mary interviewed every potential candidate'

That is, Mary interviews all the candidates that are eligible candidates; the possibility here applies to whether one is a real candidate to a position or not.

The implicit relative clause reading interprets the possibility with respect to Mary's capacity to make interviews:

- (109) Mary interviewed every possible candidate.
'Mary interviewed every candidate that it was possible for her to interview'

So in this second reading, some potential candidates might not have been interviewed because Mary did not have the chance to get in contact with them, for instance.

In Spanish, the real modal interpretation is the only one that can be obtained in prenominal position.

- (110) María entrevistó a todo posible candidato.
María interviewed DOM every possible candidate
'María interviewed every potential candidate'

The speaker is lying if, for instance, Ángel was a candidate eligible for the position but María did not interview him because she ran out of time. In postnominal position, in contrast, the modal reading is available vis-à-vis the implicit relative clause reading.

- (111) María entrevistó a todo candidato posible.
María interviewed DOM every candidate possible
'María interviewed every potential candidate'
'María interviewed every candidate that it was possible for her to interview'

In the second interpretation, the speaker reports a true state of affairs if some of the candidates were not interviewed for lack of time.

3.2.4. Intersective and non-intersective readings

The distinction between intersective and non-intersective readings (specifically, subsective) that we discussed in §2.3 is also relevant for the position of adjectives that allow the two orderings. Cinque (2010: 10) notes that if we concentrate on the event-related reading of adjectives such as *bueno* 'good', *malo* 'bad' or *hábil* 'skilful', the subsective reading is compulsory in prenominal position.

- (112) a. un buen escritor que es malo
 a good writer that is bad
 'Somone that is good as a writer, but bad as a person'
 b. un mal cantante que es bueno
 a bad singer that is good
 'Someone that is bad as a singer, but good as a person'

In postnominal position, both readings –intersective and subsective– are available.

- (113) un escritor bueno
 a writer good
 'A writer that is good as a writer'
 'A writer that is a good person'

See §4 for a restriction on the subsective readings within adjective sequences, and §3.6 for more non-intersective readings that are privileged in prenominal cases. In general, there is a tendency to find that adjectives with non-subsective readings can have a restriction to appear only in prenominal position, as it is the case with many modal and temporal adjectives:

- (114) a. un presunto secuestrador
 an alleged kidnapper
 'an alleged kidnapper'
 b. *un secuestrador presunto
 (115) a. el anterior presidente
 the previous president
 b. #el presidente anterior
 the president previous
 (Ungrammatical as 'the person that was the president';
 acceptable as 'the president that I previously mentioned / singled out')

We are unaware of any case of adjective in Spanish which only gets a non-intersective reading in postnominal position. Postnominal adjectives can accept that interpretation (as in 113) or reject it (as in 115b), but they never impose a non-intersective reading that they did not have in prenominal position also.

3.2.5. Relative and absolute readings

When discussing subsective adjectives, we singled out –following McNally (2016)– the class of adjectives where *grande* 'big' and *pequeño* 'small' belong to, noting that they

typically produce subsecutive readings where the property is evaluated relative to a class of objects.

- (116) una cucaracha grande
a cockroach big

As noted by many (Bartsch & Vennemann 1972; Kamp 1975; Higginbotham 1985), next to this reading 'property-relative to a class of comparison' (in short, relative reading), they can also accept an absolute reading where the measurement is evaluated without taking into the account the standard of a particular class of objects. This second reading is less natural in (116), because in the absolute sense the cockroach should be big not for the normal size of cockroaches or insects, but of animals (perhaps, in a science fiction movie that reading could be easily satisfied). However, in other contexts the absolute reading is easy to obtain. Imagine that we are packing for a trip and when someone brings us a book, we say:

- (117) Ese libro es demasiado grande para meterlo en la maleta.
that book is too big to put-it in the suitcase

Here it does not need to be the case that the book is big for a book; perhaps it is a pocket book, but still it is an object too big to fit in the available space left by our underwear inside the suitcase.

In Spanish, the prenominal position forces the absolute reading (Cinque 2010: 10-11). In (118), note that the expression refers to every building, not just to the buildings that are tall for the standards of sky-scrappers.

- (118) los enormes rascacielos de Nueva York
the huge sky-scrappers of New York
'the huge sky-scrappers of New York, that are all tall buildings'

In postnominal position, the absolute reading is accessible, but note that the relative reading is also possible. In this second interpretation, we refer to the buildings that are tall for the standard of a sky-scraper.

- (119) los rascacielos enormes de Nueva York
the sky-scrappers huge of New York
'the huge sky-scrappers of New York, that are all tall buildings'
'the huge sky-scrappers of New York, that are huge even for the sky-scraper standard'

It is true that the truth-conditions that distinguish these two readings are not easy to find, but it is possible to think of some contexts. If we directly want to refer to the fact that not all sky-scrappers are huge for being sky-scrappers, the two readings are distinguished, because in the absolute reading even a modest sky-scraper counts as a pretty big building.

- (120) No todos los rascacielos son altos para un rascacielos.
not all the sky-scrappers are tall for a sky-scraper

Note that the meaning in (120) can be conveyed with a postnominal adjective (121a), but not with a prenominal adjective (121b).

- (121) a. No todos los rascacielos son rascacielos enormes.
 not all the sky-scrapers are sky-scrapers huge
 b. #No todos los rascacielos son enormes rascacielos.
 not all the sky-scrapers are huge sky-scrapers

3.2.6. Comparative and absolute readings of superlatives

In the case of superlatives, the two readings that are relevant for our purposes now are the one which picks up the entity that has the highest degree of a property within a restrictive context (comparative reading), and the one that picks the entity that has, outside that restrictive context, the highest degree (absolute reading) (Cinque 2010: 11-12). The two readings can be differentiated as the two senses in (122).

- (122) ¿Quién ha escalado la montaña más alta?
 who has climbed the mountaing more high?

In the absolute reading, *la montaña más alta* refers to Everest, which in this particular world-time pair happens to be the highest mountain known, and the question is identical to 'Who, among those considered, has climbed Mount Everest?'. In the second reading, the comparative, we have a set of climbers, and we are asking which one of them climbed the mountain that was higher than all the other mountains climbed by the other people in the set.

The two readings can be differentiated easily. Imagine we have three climbers: Susan has climbed Mount Odin (2.970 meters); Ana has climbed Mount Morning (2.723 meters), and Laura has climbed Peñalara (2.430 meters). If (122) is interpreted in the absolute reading, the answer should be 'None of these'; if (122) is given a comparative reading, the answer is 'Susan', because she climbed the mountain that, out of the three, was the highest one.

As we can see in (122), the postnominal position allows both readings in Spanish. The prenominal position, in contrast, only keeps the absolute reading.

- (123) ¿Quién ha escalado la más alta montaña?
 who has climbed the more high mountain

In this case, our scenario only accepts the answer 'None of these', because (123) equals 'Who has climbed Mount Everest?', and none in our set has.

3.2.7. Specificity and non-specificity

Restrictivity is taken to be the prime effect of postnominal adjectives in definite DPs, but depending on the formal definition of restrictivity (cf. Sánchez-Masià 2017), it might not apply to indefinite DPs. This has encouraged other authors to find other landmarks to account for the distinct interpretation of adjectives within indefinite noun phrases. The central notion found in such cases has been specificity.

Bosque (1996, 2001) notes that prenominal adjectives in Spanish force a specific reading, where specificity has to be understood roughly as 'presupposition that the speaker thinks of a particular referent known to exist' (see Leonetti 1999 for the many uses of specificity). This becomes apparent in two cases: in imperative contexts, where

the reading of an indefinite direct object has to be non-specific (124), and when it is explicitly denied that the referent exists (125; Cinque 2010: 13-14):

- (124) a. Dame un libro que hable de esto.
 give-me a book that speaks.sbj of this
 'Give me a book (any book, if there is one) that speaks of this'
 b. *Dame cierto libro que habla de esto.
 give-me certain book that speaks.ind of this
 Intended: 'Give me a particular book, that I know exists, that speaks of this'
 c. *Dame un interesante libro.
 give-me an interesting book
- (125) a. Sobre este tema no existe un libro interesante.
 about this issue not exists a book interesting
 b. *Sobre este tema no existe un interesante libro.
 about this issue not exists an interesting book

The postnominal position is compatible with both specific and non-specific readings, as we see in (126).

- (126) a. Busco un libro grande que habla de este tema.
 search.1sg a book big that speaks.ind of this topic
 'I search a particular book that I know exists that talks about this topic'
 b. Busco un libro grande que hable de este tema.
 search.1sg a book big that speaks.subj of this topic
 'I search any book that is big and speaks of this topic, if any exists'

Cinque (2010) observes, however, that the prenominal position does not induce specificity if the trigger for the non-specific interpretation is a modal or a conditional. In Spanish, the data are clearer with modals than with conditionals; (127) is natural, in a non-specific reading, but (128) is a bit less so.

- (127) Cualquiera querría casarse con una atractiva actriz.
 anyone would.want to.marry with an attractive actress
 'Anyone would want to marry an attractive actress'
- (128) ?Si alguna vez conozco a una atractiva actriz, le pediré matrimonio.
 if any time meet.1sg DOM an attractive actress, her will.ask marriage
 'If I ever meet an attractive actress, I shall propose to her'

It is generally considered that is one corollary of this restriction. In generic contexts, where DPs do not refer to individuals but to whole classes of entities, prenominal adjectives are rejected (cf. Demonte 1999); thus, *El escritor sincero nunca esconde sus sentimientos* 'the writer sincere never hides his feelings, The kind of writer that is sincere never hides his feelings' contrasts with **El sincero escritor nunca esconde sus sentimientos*, and *Aquel sincero escritor no escondía sus sentimientos* 'That (particular) sincere writer didn't hide his feelings', which is not generic. See also Rigau (1999: 342) for the observation that some quantifiers (such as *cada* 'each' and *todo* –when it means 'each'–) must combine with restrictive modifiers.

3.2.8. Evaluative and epistemic readings of *desconocido*

Adjectives like *desconocido* 'unknown' allow two interpretations (Abusch & Rooth 1997): in one of them, called evaluative, we claim from a specific entity that it is not well-known, not famous, or mysterious for most people, as in (129). In this use, the adjective acts as a qualificative adjective.

- (129) Represento a un escritor desconocido.
 represent.1sg DOM a writer unknown
 'I represent a writer that is not famous'

In a second reading, so-called epistemic, we use the adjective to state that the speaker ignores the identity of the entity modified by the adjective. This meaning becomes apparent in (130).

- (130) Amelia Earhart está enterrada en un lugar desconocido.
 Amelia Earhart is buried in a location unknown

In this example, we do not say that Earhart is buried in a place that is little known, not famous, etc., but simply that we do not know the place where Amelia Earhart is buried.

As we can see, the postnominal position allows both readings of the adjective.

- (131) Vera Rubin meditaba en un pueblo desconocido.
 Vera Rubin meditated in a village unknown
 'Vera Rubin meditated in a village that was not famous'
 'Vera Rubin meditated in a particular village, but we do not know which village it was'

The prenominal position forces the evaluative reading of the adjective.

- (132) Ada Lovelace trabajó en una desconocida empresa.
 Ada Lovelace worked at a unknown company
 'Ada Lovelace worked at a company that is not well-known'

Attempts to force the epistemic reading in prenominal position are not successful. (133) entails, counterfactually, that the speaker knows exactly where Amelia Earhart landed.

- (133) Amelia Earhart se estrelló en una desconocida isla.
 Amelia Earhart SE crashed on an unknown island

3.2.9. NP-Dependent and Discourse anaphoric reading of *diferente*

The identity-related adjective *diferente* 'different' has two relevant interpretations with plural nouns: in the NP-dependent reading, the non-identity is defined reciprocally among the individuals denoted by the plural nominal (Carlson 1987; Moltmann 1992, 1997).

- (134) Los colegios de nuestros hijos son diferentes (entre sí).
 the schools of our children are different (among them)
 'The schools of our children are different from each other'

In the discourse anaphoric reading, compatible with singular nominals, the non-identity is with respect to some salient individual that has been activated in the previous discourse.

- (135) El colegio de nuestros hijos es diferente (de ese otro).
 the school of our children is different (from that other)

In postnominal position, the adjective allows both readings.

- (136) Juan y María viven en casas diferentes {entre sí / de esa otra}.
 Juan and María live in houses different among them / of that other
 'Juan and María live in houses that are different from each other'
 'Juan and María live in houses that are different from that one mentioned'

In prenominal position, only the reciprocal NP-internal reading is allowed:

- (137) Juan y María viven en diferentes casas.
 Juan and María live in different houses
 'Juan and María live in houses that are different from each other'

As the reciprocal reading requires the NP to be plural, (138) is predicted to be ungrammatical, because

- (138) *Juan y María viven en una diferente casa.
 Juan and María live in a different house

3.2.10. Interconnection between the properties

One interesting fact is that the restrictivity condition seems to take precedence over the others, and seems to be in Spanish the strongest factor determining the adjective-noun ordering. Consider one example.

- (139) un buen médico
 a good doctor

As we pointed out, this imposes a subjective reading where we claim that the doctor is good as doctor, in his professional role. But is (139) also restrictive? It does not seem so, because as soon as we try to put this phrase within a specifically restrictive context, it becomes unnatural.

- (140) ??Promocionamos solo a los buenos médicos, nunca a los malos médicos.
 promote.1pl only A the good doctors, never A the bad doctors
 'We only promote the good doctors, never the bad doctors'

(140) is slightly better with narrow focus on buenos 'good' (...a los BUENOS médicos), which suggests that in such cases the adjective is postnominal but has moved to a prenominal focus position. If the adjective must explicitly be interpreted as restrictive, the postnominal position is used –where, as we said, the subjective reading is also available–.

- (141) Promocionamos solo a los médicos buenos, nunca a los médicos malos.
 promote.1pl only A the doctors good, never A the doctors bad
 'We only promote the good doctors, never the bad doctors'

If (139) feels restrictive, then, it is because of a pragmatic implicature, not because the grammatical system imposes the reading: we know that it is not the case that all doctors are equally good at their jobs, but the structure does not denote that we select a subset within the denotation of the noun.

However, we will immediately point out an apparent counterexample related to (139) that, to the best of our knowledge, has not been previously noted in the literature.

3.3. Prenominal and postnominal orderings: morphological effects and conditions

Morphology does not in principle have much to say about the position of adjectives in Spanish, but there are two facts that are relevant from this perspective. The first is the bizarre behaviour of the synthetic superlative forms *mejor* 'better' and *mayor* 'bigger / older'; the second is the morphological operations that some adjectives undergo in prenominal position.

The first fact has been unnoticed in previous works, as far as I know. In (139) we gave an example with a subjective adjective that was not really restrictive, despite the intuitive interpretation. As a test, we used a context that forced a restrictive reading, and we showed that under this context the prenominal *buen* 'good' was not natural. This, however, contrasts with the synthetic degree form *mejor* 'better, best'.

- (142) a. ??Promocionamos solo a los buenos médicos.
 promote.1pl only A the good doctors
 Intended: 'We only promote the good doctors'
 b. Promocionamos solo a los mejores médicos.
 promote.1pl only A the best doctors

(143) shows another instance of the same contrast.

- (143) a. ??Invité solamente a mis buenos amigos.
 invited.1sg only A my good friends
 Intended: 'I only invited my good friends'
 b. Invité solamente a mis mejores amigos.
 invited.1sg only A my best friends
 'I only invited my best friends'

The generalisation seems to be that the synthetic comparatives / superlatives share this property. Contrast (144) for *grande* 'big' vs. *mayor* 'bigger / biggest'.

- (144) a. *Encarcelamos solo a los grandes criminales.
 imprison.1pl only A the big criminals
 'We only imprisoned the big criminals'
 b. Encarcelamos solo a los mayores criminales.
 imprison.1pl only A the biggest criminals

(145) opposes *malo* 'bad' and *peor* 'worse / worst'.

- (145) a. *Encarcelamos solo a los malos abogados.
 imprison.1pl only A the bad lawyers
 'We only imprisoned the bad lawyers'
 b. Encarcelamos solo a los peores abogados.
 imprison.1pl only A the worst lawyers
 'We only imprisoned the worst lawyers'

In (146), we oppose *pequeño* 'small' with *menor* 'smaller / smallest', showing that Gómez Torrego's example in (104) is restrictive in the comparative, but not in the positive degree.

- (146) a. *Ignoramos solo las pequeñas ofensas.
 ignored.1pl only the small offenses
 'We only ignored the small offenses'
 b. Ignoramos solo las menores ofensas.
 ignore.1pl only the smallest offenses
 'We only ignored the smallest offenses'

Under certain conditions, analytic superlatives also allow this.

- (147) Ignoramos solo los más minúsculos detalles.
 ignored.1pl only the most minuscule details
 'We only ignored the most minuscule details'

However, and this is crucial, for the structure it is necessary that the set –synthetic or analytic– formed by the adjective and the superlative adverb has a degree interpretation. It does not refer to the size or moral value of an entity, but to whether the nominal picks out the best examples of the class or not. 'Good lawyer' can be interpreted as a member of the set that has the qualities associated to a lawyer to a high degree, and 'best lawyer' is the member that displays those qualities to the highest degree; 'big criminal' is, similarly, an entity that displays criminal qualities to a high degree, etc. If the interpretation of the superlative adjective is not equivalent to a degree expression, then the restrictive reading is not licensed in prenominal position.

- (148) a. *Compramos solo las mayores mesas.
 buy.1pl only the biggest tables
 b. *Trago solo las menores uvas.
 swallow.1sg only the smallest grapes

Similarly, with analytic superlatives:

- (149) *Ampliamos solo las más estrechas carreteras.
 widened.1pl only the most narrow roads

These facts, put together, suggest that when the superlative is interpreted as pondering the degree to which the nominal exhibits the relevant properties of a particular class, it can move from the postnominal position –where it is predictably interpreted as restrictive– to a higher position that linearises it before the noun. Obviously, a detailed study of this restriction should be developed.

Let us now move to the morphological changes experienced by some adjectives in prenominal position. A frequently noted property of several adjectives is that in the morphologically unmarked form for gender and number they become truncated in prenominal position.

Bueno 'good' and *malo* 'bad' get truncated in masculine singular.

- (150) a. un {buen / mal} actor
 a good / bad actor
 b. una {buena / mala} actriz
 a good bad actress
 c. unos {buenos / malos} actores
 some good bad actors
 d. unas {buenas / malas} actrices
 some good bad actresses

This truncation happens irrespective of whether the adjective is coordinated with another one or not:

- (151) un buen(*o) y admirable artista
 a good m and admirable artist
 'a good and admirable artist'

The adjective *grande* 'big' does not display a gender distinction, and because of that its unmarked form is the singular one; it gets truncated in the singular, feminine or masculine.

- (152) a. un gran actor
 a great actor
 b. una gran actriz
 a great actress
 c. unos grandes actores
 some great actors
 d. unas grandes actrices
 some great actresses

All these adjectives avoid truncation when they are in the superlative form:

- (153) el más grande idiota
 the most big idiot

Three ordinals also truncate: *primero* 'first', *tercero* 'third' and *postrero* 'last', this one of little use in contemporary Spanish, and employed as a literary synonym of *último* 'last'. As these three adjectives make gender distinctions, the unmarked form is the masculine singular, and therefore truncation only applies to this form.

- (154) a. el {primer / tercer / postrer} lamento
 the first third last complaint
 b. la {primera / tercera / postrera} hora
 the first third last hour

- c. los {primeros / terceros / postreros} lamentos
- d. las {primeras / terceras / postreras} horas

3.4. *Prenominal and postnominal orderings: syntactic effects and conditions*

The main syntactic restriction on the position of adjectives is the impossibility of expressing the prepositional complement of some adjectives when they are in prenominal position. Several adjectives take prepositional complements, as those in (155).

- (155) a. difícil de hacer
difficult to do
- b. paralelo a eso
parallel to that
- c. igual a eso
equal to this
- d. diferente de eso
different from that
- e. útil para eso
useful for that
- f. oriundo de allí
native from there
- g. tendente a eso
tending to that

The complement cannot be expressed in prenominal position.

- (156) a. *una útil para escribir herramienta
a useful to write tool
- b. *un oriundo de Madrid escritor
a native from Madrid writer

It does not save the construction to split the prepositional complement from the adjective. (157) can only be grammatical if the prepositional complement is interpreted as a complement of the noun.

- (157) *una útil herramienta para escribir
a useful tool to write

This means, essentially, that if we want to use an adjective with complement in a non-restrictive sense, we must use the postnominal position.

- (158) Toda entidad es una entidad igual a sí misma.
every entity is an entity equal to it self

The restriction seems to apply to all prepositional structures, even if they are not used as complements. A few prepositional expressions are used as degree modifiers, such as the one in (159).

- (159) loco de atar
 mad of to-tie
 'extremely mad'

They cannot appear in prenominal position, even if non-prepositional equivalents are allowed.

- (160) a. *un loco de atar chico
 a mad of to-tie boy
 b. un loquísimo chico
 a mad-splt boy

The restriction has a consequence for interpreting the degree of adjectives. As it is well-known *más alto* 'taller / tallest' can be interpreted in isolation as comparative or superlative. If it is comparative, it takes as a complement a term of comparison:

- (161) Juan es más alto que Pedro.
 Juan is more tall than Pedro
 'Juan is taller than Pedro'

If it is interpreted as superlative, it does not take a compulsory complement (162), but it is possible to express the set of entities considered in the degree evaluation a prepositional phrase (163).

- (162) Juan es el más alto.
 Juan is the most tall
 'Juan is the tallest'
 (163) Juan es el más alto de (entre) los estudiantes.
 Juan is the most tall from among the students
 'Juan is the tallest of / among the students'

The comparative interpretation is impossible in prenominal position.

- (164) el más alto chico
 the most tall boy

(164) cannot be interpreted as 'the boy that is taller than someone else, mentioned before'; it must be read as 'the tallest boy'. Note that, as it was the case with prepositional complements, the term of comparison cannot be expressed at all.

- (165) a. *el más alto que Pedro chico
 the more tall than Pedro boy
 b. *el más alto chico que Pedro
 the more tall boy than Pedro

In the case of the superlative, the expression that denotes the whole set of entities considered cannot appear as a constituent with the adjective, but can be expressed after the noun.

- (166) a. *el más alto de los estudiantes chico
 the most tall from the students boy
 b. el más alto chico de entre los estudiantes
 the most tall boy of among the students
 'the tallest boy among the students'

Under the light of examples like (157), this seems to suggest that the prepositional phrase that appears with superlative structures is not really a complement of the adjectival phrase; if it was the case, we would lack an explanation of why it can be split here but not in the case of bona fide complements.

The nature of this restriction is unclear. It is tempting to suggest that comparatives always must be restrictive, because they are used to differentiate one entity from another, while superlatives at least admit one reading where they just express that an entity has properties that are displayed in the highest degree ('absolute superlative'). However, we already saw in §3.3 that the restrictive reading is available with some superlatives if the adjective is interpreted roughly as a degree expression, so the question is why (167) is not possible in the comparative reading (roughly, 'we only accepted studies that were better than the work we evaluated first').

- (167) *Tras evaluar el trabajo, admitimos solo mejores estudios.
 after evaluating the work, admitted.1pl only better studies

Descriptively, it seems that a better rule is that adjectives that contain as part of their phrase a prepositional phrase cannot appear in the prenominal position. This excludes any adjective that takes a complement, comparative adjectives if their term of comparison is compulsory, and adjectives that take a prepositional phrase to express degree on the assumption that their abstract structure is, in all cases, has the shape in (168).

- (168) [XP ...adjective [PP]]

XP can be AP or Degree Phrase, and the whole account would imply that the term of comparison introduced by *que* 'than' or *como* 'as' can be assimilated to prepositional phrases.

- (169) a. [AP útil [PP para escribir]]
 useful to write
 b. [DegP ... loco [PP de atar]]
 crazy of to-tie
 c. [DegP más [AP alto] [PP que Juan]]
 more tall than Juan

If this generalisation is on the right track, then it is related to the facts discussed in §6, showing that any kind of prepositional modifier, no matter its height and properties, must appear in postnominal position.

A second relevant interaction between adjective position and syntax is the phenomenon of 'agreement attraction' (Bock & Miller 1991; Antón-Méndez, Nicol & Garrett 2002; Alcocer & Phillips 2009; Lorimor et al.; Fuchs, Polinsky and Scontras 2015). The general observation is that whenever an adjective modifies a complex

nominal with PP complements, if it is prenominal it agrees in gender and number with the head of the structure.

- (170) la aburrida noticia de las revistas
 the boring.f.sg new.f.sg of the journals.f.sg
 'the boring piece of news in the journals'

However, if the adjective is postnominal, agreement attraction can emerge, and in such cases the closest nominal controls it even if the adjective refers to the head. Such sequences are attested in oral and written corpora, although speakers feel that they are wrong (we mark as '!' this status).

- (171) ! la noticia de las revistas, terriblemente aburridas
 the new.f.sg of the journals.f.pl terribly boring.f.pl
 'the piece of news in the journals, terribly boring'

As Fuchs, Polinsky & Scontras (2015) note, this happens under linear adjacency, presumably as a processing problem, because it is not even necessary that the adjective and the nominal form a syntactic constituent.

- (172) a. Considero aburrida la noticia de las revistas.
 consider.1sg boring.f.sg the new.f.sg of the journals.f.pl
 b. ! Considero la noticia de las revistas terriblemente aburridas.
 consider.1sg the news of the journals.f.pl terribly boring.f.pl

In their experiment, Fuchs, Polinsky & Scontras (2015) note that agreement attraction is felt as less natural when it involves gender and number or just gender.

- (173) !! Considero la noticia de los periódicos terriblemente aburridos.
 consider.1sg the new.f.sg of the newspapers.m.pl terribly boring.m.pl

A final observation, made by Abeillé & Godard (2000) for French, is that two coordinated adjectives can occupy the postnominal position easier than each one of the adjectives on their own. (174a) and (174b) show that the adjectives *presunto* 'alleged' and *seguro* 'certain' –in its modal reading– cannot be easily postposed. (174c) shows that when both form one constituent through coordination, this is possible (although not compulsory, see 174d).

- (174) a. *un culpable presunto
 a culprit alleged
 b. #un culpable seguro
 a culprit certain
 c. los culpables presuntos o seguros
 the culprits alleged or certain
 d. los presuntos o seguros culpables
 the alleged or certain culprits

3.5. Prenominal and postnominal orderings: phonological effects and conditions

Several studies have argued that the phonological size of adjectives also influences its placement inside the NP. Specifically, the idea is that –given that the postnominal

position is the unmarked one, and allows for more than one reading– in the reading shared by the prenominal and the postnominal positions, the size of the adjective might help determine whether the placement is before or after the noun. Specifically, in the subsecutive non-restrictive reading, we find that adjectives that are longer than nouns tend to prefer the postnominal position (175), and adjectives that are shorter than nouns prefer the prenominal one (176).

- (175) a. ?un extraordinario doctor
 an extraordinary doctor
 b. un doctor extraordinario
 a doctor extraordinary

but

- c. un extraordinario fisioterapeuta
 an extraordinary physiotherapist

- (176) a. una buena actriz
 a good actress
 b. ?una actriz buena
 an actress good [in the subsecutive reading]

but

- c. ?una mala col
 a bad cabbage
 d. una col mala
 a cabbage bad

Fernández Ramírez (1951) is one of the first to notice patterns like this (see also Salvá 1830: 12.4.2.5a). Beyond the tendency found when the same reading can be obtained in the two positions, some theories argue that phonology determines the order of adjectives with independence of the semantics, as File-Muriel (2006), who argues that when one considers spoken corpora, one finds significant tendencies towards placing in front of the noun shorter adjectives, such as *gran* 'big', *mal* 'bad', *bajo* 'short', *nuevo* 'new', *buen* 'good', *libre* 'free', *mejor* 'better' and *alto* 'high'. He also argues that relational adjectives appear overwhelmingly in postnominal position because their morphologically derived status makes them be syllable-heavy (*episcopal* 'bishop related', *medieval* 'Middle Ages-related', *biológico* 'biological', etc.). This goes against the more extended view that phonological weight does not determine the position of adjectives before semantic or syntactic considerations (cf. Prado 1980, Terker 1985). The fact remains that when the adjective is intended as intersective and restrictive, no matter how much shorter it is than the noun, the postnominal position is compulsory.

- (177) los fisioterapeutas buenos
 the physiotherapists good
 'from all physiotherapists, those that are good people'

3.6. *Prenominal and postnominal orderings: lexical effects and conditions*

Lexical facts define adjective ordering in two situations: when there are semi-lexicalised formulas and when the adjective has two distinct meanings in pre- and postnominal position.

Starting with the first case, NGLE (2009: §13.13e) points out that the adjective is fixed in a prenominal ordering against the general rules described in the previous sections in a number of expressions that, through time, have become formulas. These include the following:

- (178) las Sagradas Escrituras 'the holy scriptures, the bible', el libre albedrío 'the free will', el libre comercio 'the free trade', la Baja Edad Media 'the late Middle Ages', la Alta Edad Media 'the old Middle Ages', los altos hornos 'the high ovens', los altos estudios 'the higher education', las bellas artes 'the fine arts'

The second case involves adjectives that express different notions in preverbal and prenominal position. The following list is not exhaustive, but it provides a fair representation of the adjectives involved.

- (179) antiguo: previo 'previous' vs. anticuado 'antiquated'
 a. mi antigua casa
 my previous house
 b. un hombre antiguo
 a man antiquated
- (180) bendito: emphatic use vs. bendecido 'blessed'
 a. ¡Bendito coche!
 bloody car
 b. un coche bendito
 a car blessed
- (181) bonito: emphatic use vs. hermoso 'pretty'
 a. ¡Bonita respuesta!
 what.an answer
 b. un cuadro bonito
 a picture pretty
- (182) completo: emphatic use vs. pleno 'total'
 a. un completo imbécil
 a perfect idiot
 b. una pizza completa
 a pizza whole
- (183) dichoso: emphatic use vs. satisfecho 'satisfied'
 a. ¡Dichoso niño!
 what.a child
 b. un niño dichoso
 a child satisfied
- (184) eterno: constante, insistente 'constant' vs. 'eternal'
 a. tu eterna vagancia
 your constant laziness
 b. un viaje eterno
 a trip eternal

- (185) famoso: 'notorious' vs. 'famous'
 a. el famoso coche
 the notorious car
 b. un artista famoso
 an artist famous
- (186) lindo: emphatic use vs. 'pretty'
 a. ¡Linda respuesta!
 what.an answer
 b. un reloj lindo
 a watch pretty
- (187) menudo: emphatic use vs. 'small'
 a. ¡Menudo toro!
 what.a bull
 b. un toro menudo
 a bull small
- (188) perfecto: degree use vs. 'perfect'
 a. un perfecto imbécil
 a perfect idiot
 b. una película perfecta
 a movie perfect
- (189) pobre: 'pitiable' vs. 'poor'
 a. el pobre millonario
 the poor millionaire
 b. un escritor pobre
 a writer without.money
- (190) puro: degree reading vs. 'pure'
 a. la pura verdad
 the naked truth
 b. agua pura
 water pure
- (191) raro: 'infrequent' vs. 'weird'
 a. una rara habilidad
 an infrequent ability
 b. una habilidad rara
 an ability weird
- (192) soberano: degree reading vs. 'sovereign'
 a. un soberano tortazo
 a huge blow
 b. el pueblo soberano
 the people sovereign
- (193) valiente: emphatic use vs. 'brave'
 a. ¡Valiente respuesta!
 what.an answer
 b. un perro valiente
 a dog brave
- (194) verdadero: degree use vs. 'true'
 a. un verdadero susto
 a huge scare
 b. una respuesta verdadera
 an answer true

Even though each adjective has its own idiosyncrasies, a few tendencies can be identified. Whenever there are two distinct readings, the prenominal one is associated to one of the three following interpretations:

- (i) Degree interpretation
- (ii) Speaker-oriented interpretation
- (iii) Temporal ordering (*antiguo* 'previous')

In the degree interpretation, the adjective is used –independently of its literal meaning– as a means to highlight that the individual denoted by the whole phrase exhibits the properties that are typical of the class in a particular degree, normally extremely high (eg., *un perfecto idiota* 'a perfect idiot, someone that exhibits the typical properties of idiots to a high degree'; *un verdadero susto* 'a real scare, something that is a prime example of a scare'). To some extent, these involve some kind of subjective evaluation from the part of the speaker; in other cases, the subjective evaluation from the speaker is the only reading, as in the case of prenominal adjectives that are used to manifest mirativity in exclamative sentences (*¡Valiente respuesta!* 'What an answer!') and other adjectives expressing the emotional commitment of the speaker (*el pobre niño* 'the pitiable child'). The exclamative use does not imply that the properties of the entity are the prototypical ones of the class denoted by the noun –rather the contrary, either the properties appear in an unexpected degree or they deviate from what is considered acceptable–. In all these cases, the content provided by the adjective is not at-issue content (Potts 2004), and cannot be felicitously denied.

- (195) A: Mira al pobre niño.
 look at the poor child
 B: #Mentira, ese niño no merece compasión.
 false, that child not deserves sympathy
 'False, that child does not deserve sympathy'

Remember that we already noted that in some conditions a degree interpretation of the adjective licenses a restrictive reading in prenominal position; it is also worth pointing out that Cinque (1994) placed speaker-oriented adjectives, involving a subjective judgement from the speaker, higher than all other classes (except for possessives).

A common tendency that can be observed with all adjectives in the class is that in prenominal position the physical property reading they might have disappears (eg., *menudo* 'emphatic vs. little'). This is a tendency noted otherwise, for instance in Lenz (1935), Gili Gaya (1943) and NGLE (2009: §13.14g). The following adjectives tend to have a metaphorical reading in prenominal position, and keep their physical dimension reading in postnominal position. This suggests, again, that the prenominal position is somehow linked to subjective evaluations: the more difficult it is to objectively measure a dimension, the less likely it is to find that reading in postnominal position.

- (196) a. nubarrones negros 'black clouds'
 b. negros nubarrones 'ominous clouds'
 (197) a. hombres altos 'tall men'
 b. altos ideales 'refined ideals'
 (198) a. mujeres grandes 'big women'

b. grandes mujeres 'great women'

Despite these tendencies, sometimes it is necessary to accept that specific classes of adjectives might give rise to more idiosyncratic contrasts. Such is the case of ordinal numerals (Eguren & Fábregas 2007), which in prenominal position refer to –as expected– the ordering among entities in a set.

- (199) a. la primera estudiante (en entrar)
 the first student in entering
 b. la tercera nube (contando por la derecha)
 the third cloud counting from the right

However, in postnominal position they rather denote that the entity is associated to a cardinal number, which might reflect some ordering or not. Entities that are not associated to numbers typically reject ordinals in the postnominal position, then.

- (200) a. #la estudiante primera
 the student first
 (Unless students have been assigned numbers)
 b. #la nube tercera
 the cloud third

The criterion used for the ordering, which can be expressed when the adjective appears in prenominal position, is ungrammatical in such cases, confirming again that the adjective does not properly denote ordering here.

- (201) *la estudiante primera en entrar
 the student first in entering

Postnominal ordinals are attested with nouns denoting entities that can be assigned a cardinal number, such as the names of kings and popes, rows, floors, etc.

- (202) a. Felipe Segundo
 Phillip the Second
 b. la fila tercera
 the row third
 c. el piso cuarto
 the floor fourth

Still, sometimes adjectives exhibit more fine-grained contrasts in prenominal and postnominal position that are not necessarily shared by other adjectives inside their class. This is largely an issue that has not been researched in detail in the grammar of Spanish, and we will give here one such example: *próximo* 'next'. This seems to be an adverbial adjective, with a relevant temporal ordering reading that can be obtained in prenominal position.

- (203) la próxima semana
 the next week

However, the temporal interpretation is also possible in postnominal position:

- (204) a. la semana próxima
 the week next
 b. el lunes próximo
 the Monday next

The prenominal position seems unmarked for this adjective, in the sense that all nouns –even those without temporal extension– allow it; note in (206) that the postnominal position is not so natural with interpretations that lack any temporal component. (206b) is acceptable to the extent that we can construe a situation where the stops of the train are ordered not just in space, but also in time as the train passes through them; (206c) is more difficult in this 'trajectory crossed through time' reading, and therefore the postnominal position is unnatural here.

- (205) a. la próxima paciente
 the next patient
 b. el próximo libro
 the next book
 c. el próximo entremés
 the next appetiser
 (206) a. *la paciente próxima
 the patient next
 b. la parada próxima
 the stop next
 c. *la mesa próxima
 the table next

All things considered, it is plausible that *próximo* 'next' is misclassified as an adverbial adjective triggering non-subjective readings; it is more likely that it is an adjective triggering intersective readings that happen to be predicated from a temporal variable of nouns, and as such it can be postposed without difficulty with temporal nouns and nouns that can be coerced into temporal series; when prenominal, it does develop non intersective readings, as other adjectives.

This case has several consequences. One of them is that we cannot rely solely on the type of notion expressed by an adjective in order to classify it, as a temporal reading can be conceivable obtained through intersectivity. Another one is that the denotation of specific adjectives, a lexical fact, might interact with the position in ways that still are to be understood for many cases.

With this, we finish the overview of the prenominal vs. postnominal contrast and move to the internal ordering of series of adjectives.

4. Adjectival sequences

In this section, we consider how the different adjective classes and interpretations discussed in §2 and §3 order when they are in a sequence. We have seen in §3 that in Spanish the prenominal position is marked, which is reflected among other things in the difficulty of having long series of adjectives in this position: when the series of adjectives is heavy, one or more of them are placed postnominally. However, the ordering of adjectives in prenominal position tends to be the mirror reflection of the ordering in postnominal position. Let us start this section by considering the more restricted prenominal position, and then move to the more complex postnominal one.

4.1. Prenominal position: the basic ordering

Taking into account that relational adjectives cannot occupy this position, the ordering tends to be as shown in (207):

(207)	adverbial adjective - qualificative adjective - N		
a.	presunto	sangriento	criminal
	alleged	bloody	criminal
b.	futuro	querido	presidente
	future	beloved	president

Contra Cinque (2010), the adverbial adjective seems able to precede the qualificative adjectives, although both orders seem to be attested provided they trigger a meaning difference. In (207b) we refer to someone that in the future we expect to be a beloved president, while in (208) we talk about someone that is beloved now, and we expect that in the future will be president.

(208)	qualificative adjective - adverbial adjective - N		
	querido	futuro	presidente
	beloved	future	president

In the case of the modal adjective *presunto* 'alleged', it seems that the reading where the modal takes scope over the qualificative adjective is available in the second order also.

(209)	un sangriento presunto criminal		
	a bloody	alleged	criminal

(209) can mean 'the person that is suspected to be a bloody criminal' (where 'alleged > bloody'), but also 'the person that is bloody and suspected to be a criminal'. This fact can easily be accommodated if we assume that the modal operator can take covert scope.

The ordering among adverbial adjectives is, to some extent, free. Among the non-subjective adjectives, modals and temporals can appear in either ordering, with the expected meaning difference.

(210)	a. un posible futuro ministro		
	a possible	future	minister
	'someone that possibly will be minister'		
	b. un futuro posible ministro		
	a future	possible	minister
	'someone that in the future might be considered for a minister position'		

However, the subjective event-related adjectives lack this reading when they precede the non-subjective adjectives.

(211)	a. un hábil futuro presidente		
	a skilful	future	president
	b. un futuro hábil presidente		
	a future	skilful	president

(211a) cannot mean 'the person that in the future will be skilful as president'; it must mean 'the person that is skilful, and (perhaps because of that) will be president in the future'. (211b) allows the subjective reading 'the person that in the future will be president, and skilful as such'.

The fact noted in (211) can be semantic or syntactic, that is, it can be explained as a syntactic restriction on the position that subjective event-related adjectives can occupy –always lower than non-subjective adjectives– or it can be explained as a semantic entailment: quite simply, someone that is not a president now cannot be skilful as a president.

However, other facts suggest that the reason is syntactic. The subjective reading disappears if the prenominal adjective precedes qualificative adjectives. In (212a), we can interpret 'huge' as 'great in his job', but in (212b) 'huge' must be interpreted as 'hefty'.

- (212) a. un amable enorme científico
 a nice huge scientist
 Possible: 'a nice scientist that is great at his job'
 b. un enorme amable científico
 a huge nice scientist
 'a hefty nice scientist'

Here there are no immediate semantic reasons to expect that the subjective reading in (212b) is not available, suggesting therefore that this is actually a matter of syntactic height.

The unmarked order among qualificative adjectives, if we attend to the conceptual domain of each adjective, is as in (213) –illustrated in pairs, given that having three qualificative adjectives in prenominal position is always unnatural–.

- (213) value / non-physical property > size > colour / form > N
- | | | | |
|----|-------------|--------|---------|
| a. | buena | larga | velada |
| | good | long | evening |
| b. | maravillosa | blanca | nieve |
| | wonderful | white | snow |
| c. | | pesada | redonda |
| | | heavy | round |
| | | | figura |
| | | | figure |

Unlike what we saw in the case of adverbial adjectives, the ordering among these classes is not flexible.

- (214) a. ??una larga buena velada
 a long good evening
 b. ??la blanca maravillosa nieve
 the white wonderful snow
 c. ??su redonda pesada figura
 his round heavy figure

If the adjectives are coordinated or yuxtaposed, however, the ordering becomes more flexible.

- (215) a. una larga, buena velada
 a long good evening
 b. la blanca, maravillosa nieve
 the white, wonderful snow
 c. su redonda y pesada figura
 his round and heavy figure

Three things are worth pointing out at this point.

First, note that, unlike what was the case with temporal and modal adjectives, the ordering difference would not have an effect on the semantic interpretation of the NP. In logical terms, there is a meaning difference between a future possible minister and a possible future minister –there are scenarios where one is true and the other is false–. In contrast, if both orders were possible, there would not be any meaning difference between a "long good evening" and a good long evening, as both would mean, logically, an evening that is both good and long.

Second, for the same reason, the order between qualificative and adverbial adjectives is free to the extent that each one is related to a distinct reading (again, a wonderful possible politician is not the same as a possible wonderful politician). The exception, as we have seen, is the subsecutive eventive reading, which is blocked if the qualificative adjective, or another adverbial adjective, intervenes between the noun and the subsecutive adjective.

Third, the marked status of the pronominal position makes combinations of more than two adjectives generally impossible.

- (216) ??un presunto futuro maravilloso político
 an alleged future wonderful politician

It is tempting to propose that the marked status of the pronominal position makes it possible for phonology to impose extra requirements on the weight of the material before the noun. The explanation cannot rely solely on the number of syllables, disregarding the structure, however, as a series of yuxtaposed or coordinated adjectives can be pretty lengthy (217).

- (217) una maravillosa, calurosa y agradable velada
 a wonderful warm nice evening

The way in which the adjectives are organised must be relevant here. In (217) there is only one adjectival constituent, while in (216) there are three; the relevant measure of weight here could be the number of constituents before the NP.

Alternatively, the constituents could be prosodic, and the structural measure of weight might take into account the size of the element that forms a prosodic phrase with the noun; (217) allows naturally for a prosodic structure where there is only one adjective inside the same phrase as the noun, something not possible in (216).

- (218) a. (maravillosa) (calurosa) (y agradable velada)
 b. ??(maravillosa calurosa agradable velada)

4.2. *Postnominal position: basic order*

Relational adjectives appear in postnominal position, so we need to consider their ordering with respect to qualificative adjectives. As has already been pointed out, relational adjectives are internal to qualificative ones.

(219)	N	>	relational adjective	>	qualificative adjective
	a. problema		político		serio
	problem		political		serious
	b. acto		religioso		divertido
	event		religious		fun

There are two types of relational adjectives, following Bosque (1993). The classificative relational adjectives precede the argumental relational adjectives.

(220)	N	>	classificatory adjective	>	argumental adjective
	a. análisis		sintáctico		chomskiano
	analysis		syntactic		Chomskian
	b. invasión		económica		alemana
	invasion		economical		German

Among argumental relational adjectives, the ones referring to patients precede those referring to agents.

(221)	N	>	patient argument	>	agent argument
	producción cinematográfica				hitchcockiana
	production film-rel				Hitchcock-rel

Among classificative relational adjectives, when more than one occurs, the order reflects which division is considered primary and which one is considered secondary. In (222a) we are classifying architecture mainly through historical periods, and then attending to country; in (222b) the primary classification is about countries, and then secondarily about historical periods.

(222)	a. arquitectura medieval turca
	architecture medieval Turkish
	b. arquitectura turca medieval
	architecture Turkish medieval

Some facts are underexplored in the literature. We will point out two. The first one refers to descriptive adjectives, those that behave similarly to relational adjectives but lack a nominal base –and therefore an interpretable number feature–. NGLE (2009: §13.15f) only says that they assimilate in their position to relational adjectives, but this does not seem to be the case always, under the light of (223).

(223)	a. café arábigo descafeinado
	coffee Arabic decaffeinated

- b. ??café descafeinado arábigo
coffee decaffeinated Arabic

If descriptive adjectives were purely relational, the rule in (222) should apply here. It seems in principle equally possible to classify coffee types by their content, and then origin, or vice versa, but (223b) is very marked. Similarly, contrast (224), with a descriptive adjective, and (225), with a prototypical relational adjective:

- (224) a. obra descriptiva medieval
work descriptive Medieval
b. ??obra medieval descriptiva
work Medieval descriptive
- (225) a. obra trovadoresca medieval
work trovadour-rel Medieval
b. obra medieval trovadoresca
work Medieval trovadour-rel

It seems, then, that descriptive adjectives like being internal to even classificative relational adjectives.

Another little studied fact is that argumental relational adjectives involving notions such as place and instrument appear between patient and agent relational adjectives. In order to show that this is the case, we must look closer to some facts. The adjective in (226) could be, pretheoretically, conceived as a classificatory adjective (a type of production) or an argument-related adjective expressing instrument (production done using a particular instrument).

- (226) producción manual
production manual

However, an adjective expressing the object produced (patient) precedes it, and it is not possible to invert the ordering.

- (227) a. producción cestera manual
production basket-rel manual
b. *producción manual cestera
production manual basket-rel

We conclude, thus, that *manual* 'hand-made', is not a classificative relational adjective in the example. Consider now (228).

- (228) la producción cestera manual albanesa
the production basket-rel manual Albanian

Albanesa 'albanian', by transitivity, cannot now be a classificatory relational adjective; it denotes the agent of the production; this can be shown also because if the adjective appears, no PP can express independently the agent.

- (229) *la producción cestera manual albanesa por parte de Juan
the production basket-rel hand Albanian by Juan

Thus we conclude that instrument relational adjectives –likely candidates to be considered 'adjunct relational adjectives'– appear between patient and agent relational adjectives. The problem from an analytical perspective is that agents are considered 'arguments' in the strong sense, and as such they are assumed to be internal to adjuncts, contra the pattern noted here. The facts seem to argue for a very different structure to introduce agents inside nominalisations and inside verbal structures; specifically, it seems to support Picallo's (1991) view that event nominalisations are passive constructions, and a view of agent complements inside passive structures as adjuncts rather than as arguments.

There is also an enigmatic ordering paradox noted in NGLE (2009: §13.151): frequency adjectives (*anual* 'annual', *semanal* 'weekly') tend to appear after agent relational adjectives (230), but they can appear before classificative relational adjectives in some cases (231).

- (230) a. visita episcopal anual
 visit bishop-rel annual
 b. ?visita anual episcopal
 visit annual bishop-rel
- (231) a. pensión anual vitalicia
 stipend annual for.life
 b. pensión vitalicia anual
 pension for.life annual

The section is not very clear in NGLE, and it is suggested that *pensión vitalicia* 'stipend for life' could be taken as a semilexicalised unit in (231b). However, it is possible that there is a simpler explanation if we assume that all frequency adjectives are ordered externally to relational adjectives, but under certain conditions they can be reinterpreted as classificative relational adjectives (230b, 231a). This reinterpretation is naturally easier with a noun like *pensión* 'stipend', as it is easier to take an annual stipend to be a particular subtype of stipend than to take an annual visit as some subtype of visit.

4.3. Basic order in postnominal position: qualificative adjectives

The natural order of qualificative adjectives, as noted in §2.1 and §4.1, seems to reflect a classification based on the conceptual domain to which the adjective belongs.

- (232) N > colour/form > size / physical properties > other qualities
- | | | |
|-------------------|--------|------------|
| a. coche rojo | grande | rápido |
| car red | big | fast |
| b. figura redonda | ancha | enigmática |
| figure round | wide | mysterious |
| c. manzana verde | ligera | sabrosa |
| apple green | light | delicious |

Colour and form adjectives can exchange their orders.

- (233) a. una figura azul cuadrada
 a figure blue square

- b. una figura cuadrada azul
 a figure square blue

Flavours and other 'objective' physical notions perceptible by the senses pattern with colour and shape in that they precede physical notions related to size, but tend to follow these two notions.

- (234) a. una manzana verde dulce.
 an apple green sweet
 b. ??una manzana dulce verde
 an apple sweet green
 c. una manzana dulce enorme
 an apple sweet huge
 d. *una manzana enorme dulce
 an apple huge sweet
- (235) a. un sonido agudo intenso
 a sound high-pitched intense
 b. ??un sonido intenso agudo
 a sound intense high-pitched

Size adjectives precede adjectives expressing non-physical properties; within this class we have adjectives of length, width, depth, height and weight.

(236)	N	physical property	non-physical property
a.	calle street	ancha wide	peligrosa dangerous
b.	hombre man	gordo fat	simpático nice
c.	chica girl	alta tall	generosa generous
d.	pozo pit	hondo deep	maloliente stinking

Within physical properties, it is difficult to give systematic rules, but there is a tendency to place physical properties that do not involve an evaluation or judgement on the part of the speaker before adjectives that require such judgements.

- (237) a. pozo hondo sucio
 pit deep dirty
 b. ??pozo sucio hondo
 pit dirty deep
- (238) a. cuarto amplio luminoso
 room wide bright
 b. *cuarto luminoso amplio
 room bright wide

In postnominal position, the reading that the more external adjectives receive matches, then, the reading that the highest qualificative adjectives receive in prenominal position, where they also tend to involve a judgement on the part of the speaker.

4.4. *Postnominal ordering and interpretations*

As we see the ordering facts related to the conceptual domains involved in the semantics of the adjective seem pretty complex. A cleaner picture emerges when instead we consider the types of semantic contrasts discussed in §3.2. Remember that postnominal adjectives in Spanish allow both intersective and non intersective readings; both restrictive and non restrictive readings, and both IL and SL readings. The question is whether these interpretations are related somehow to their ordering, and the answer is yes (cf. Larson 2000, Cinque 2010).

Let us start with restrictive vs. not restrictive readings. The generalisation is that the not restrictive reading is more internal to the noun than the restrictive reading. Consider (239), in order to set a baseline.

- (239) *Recuerdo las clases aburridas de Elena.*
 remember.1sg the classes boring of Elena
 'I remember Elena's boring classes'

The interpretation that we are interested in (239) is the not restrictive one, meaning 'I remember all classes by Elena, which were boring'. Consider now (240).

- (240) *Recuerdo las clases aburridas largas de Elena.*
 remember.1sg the classes boring long of Elena

Two readings are possible here: 'I remember all classes by Elena, which were all boring and long' (both adjectives are non restrictive) or 'From all the classes by Elena, which were boring, I only remember the long ones'.

If (239) is interpreted restrictively ('From all the classes by Elena, I only remember the boring ones'), then (240) allows a third reading where both adjectives are restrictive ('From all the classes by Elena, I only remember those that were both boring and long'). The interpretation that is unavailable is the one where 'long' is not restrictive and 'boring' is restrictive, and thus (240) can never mean 'From all the classes by Elena, which were long, I only remember the boring ones'. We then conclude:

- (241) N not restrictive adjective > restrictive adjective

Consider now non intersective readings. We already noted in §4.1. that the subjective reading of event-related adjectives is blocked if they are external to a qualificative or adverbial adjective. Consider now (242).

- (242) *María es una profesora buena.*
 María is a teacher good

The interpretation relevant for us is the subjective one: María might be a horrible person, but she is good as a teacher. Consider now (243).

- (243) *María es una profesora buena mala.*
 María is a teacher good bad

The sentence is not contradictory, because we can interpret 'good' as subjective ('good as a teacher') and 'bad' as intersective ('bad as a person'). We cannot interpret, however, that María is bad as a teacher and good as a person. Similarly, in (244), the

presence of the adjective *bajita* 'short', which cannot be subsective, blocks the subsective reading of *buena* 'good'.

- (244) María es una profesora bajita buena.
 María is a teacher short good

Not all adjectives block the subsective reading; relational adjectives do not block it.

- (245) Picasso fue un pintor cubista bueno.
 Picasso was a painter cubist good
 'Picasso was good as a cubist painter'

We then conclude:

- (246) N > relational adjective > subsective reading > intersective reading

Let us cross this ordering with the restrictivity-based one. Consider (247).

- (247) Recuerdo a los escritores rápidos de la empresa.
 remember.1sg the writers fast of the company.

This allows several readings:

- (248) a. 'I remember the writers of the company, which were all fast as writers'
 (subsective, not restrictive)
 b. 'I remember the writers of the company, which were all fast people'
 (intersective, not restrictive)
 c. 'From all writers of the company, I remember only those that were fast as
 writers' (subsective, restrictive)
 d. 'From all writers of the company, I remember only those that were fast
 people' (intersective, restrictive)

Consider now (249) and its available interpretations (to go straight to the point, we ignore the readings where known to be ungrammatical already).

- (249) Recuerdo a los escritores rápidos buenos de la compañía.
 remember.1sg the writers fast good of the company
 'I remember the good fast writers of the company'
- (250) a. fast=not restrictive, subsective good= restrictive, subsective
 'From all the writers of the company, which were fast as writers, I only
 remember those that were good as writers'
 b. fast=not restrictive, subsective good= restrictive, intersective
 'From all the writers of the company, which were fast as writers, I only
 remember those that were good people'
 c. fast=restrictive, subsective good=restrictive, subsective
 'From all the writers of the company, I only remember those that were both fast
 writers and good writers'

- d. fast=restrictive, subsective good=restrictive, intersective
'From all the writers of the company, I only remember those that were fast writers and good people'
- e. fast=not restrictive, subsective good=not restrictive, intersective
'I remember the writers of the company, that were all fast as writers and good people'
- f. fast=not restrictive, subsective good=not restrictive, subsective
'I remember the writers of the company, that were all fast as writers and good as writers'
- g. fast=not restrictive, intersective good=not restrictive, intersective
'I remember the writers of the company, that were all fast people and good people'

We can see that none of the logical crossings is impossible. Specifically, we see that it is not the case that when a subsective position is occupied, the following adjective must be restrictive (250e, 250f); it is not the case either that when a not restrictive position is filled, the following adjective must be intersective (250a, 250f). The conclusion must be that (not)restrictivity and (not)intersectivity are different dimensions, not different areas, and the area that allows restrictive readings allows both subsective and intersective adjectives, or, to put it differently, the area that allows subsective readings accepts both restrictive and not-restrictive interpretations.

Let us move now to the IL vs. SL interpretation. As in the previous cases, the more internal adjective gets the only reading available in prenominal position:

- (251) las estrellas visibles invisibles (ahora)
the stars visible invisible now
'the visible stars, that are invisible now'

(251) has to be interpreted as meaning that the stars that are, by their nature, visible, are now in a situation that makes them invisible; thus, the IL reading is internal to the SL reading.

- (252) #las estrellas invisibles visibles

Note that (252) has the flavour of a contradiction. An IL reading of the first adjective and a SL reading of the second adjective would mean that stars that are by their nature invisible are now visible by some machine. An IL reading of both would be contradictory, and an SL reading of both would be contradictory also; the conceptually normal reading that the stars that are invisible now are normally visible is blocked by the ordering of adjectives, because it would involve an SL reading internal to an IL reading.

We invite the reader to confirm that, just like (non-)intersectivity and (not) restrictivity are two independent dimensions, the IL / SL contrast is another dimension that can combine freely with the other two, checking the readings that (253) has.

- (253) Conocí a los escritores buenos gordos de la empresa.
rmet.1sg the writers good fat of the company
'I met the fat good writers of the company'

In particular, note that the readings 'I met the writers of the company that are good as writers and characteristically fat' and 'I met the writers of the company, which are all good people and characteristically fat' are both available.

We conclude, thus:

(254) N > IL adjective > SL adjective

The general conclusion is, for Spanish, the following:

a) We seem to have identified a sequence of the shape in (255):

(255)

Non-subjective	>	Subjective	>	N	>	Relational	>	Subjective	>	Intersective
Intersective		Not restrictive						Not restrictive		Restrictive
Not restrictive		IL						IL		SL
IL										

(with adverbial and qualificative adjectives allowing free order)

b) The position between relational adjectives and intersective / restrictive / SL adjectives reproduces the same properties that the position immediately above the noun has.

c) The IL / SL contrast, the (non-)intersectivity contrast and the (not) restrictivity contrast combine freely, appearing to be dimensions of meaning rather than three different areas.

d) The ordering within each one of the 5 sections defined in (255) is either restricted by the conceptual domain to which the adjective applies –significantly, in the case of qualificative adjectives–, or flexible –particularly, between modal, temporal and qualificative adjectives, provided they trigger distinct readings.

e) The position inside a sequence of qualificative adjectives depends to some degree on conceptual notions. Next to the observation that more 'objective' properties tend to be ordered closer to the noun than more 'subjective' ones, there is a tendency to place more metaphorical meanings –admittedly, an elusive notion– in prenominal position, and properties that depend on the subjective judgement of the speaker in the highest position.

5. Accounts of adjective ordering in Spanish

We now move to the overview of the accounts about adjective placement in Spanish; some of the theories that we will discuss here, however, have been stated initially for other languages, but with the implicit or explicit goal of functioning as a basic configuration that can be used to analyse other languages.

We have just summarised at the end of the last section the main empirical facts to be accounted for. Here, we will remind the reader what the main analytical options are, as we presented them in §1.

a) Rigidly ordered sequence or free modification? The fact is that adjectives can be rigidly ordered when modifying the same noun, as (256) shows.

- (256) a. un coche rojo grande
 a car red big
- b. ??un coche grande rojo
 a car big red

We saw that in some theories, adjectives are rigidly ordered in classes defined by the conceptual domain where they apply, with the grammar being sensitive to, for instance, whether an adjective denotes colour or size. This gives rise to a proliferation of highly specific, designated heads denoting notions such as 'colour', 'origin', 'size', etc. Other theories, in contrast, propose a form of free modification, where modifiers are not introduced by designated projections; any possible restriction on their ordering derives either from cognitive principles not directly codified in grammar (eg., 'more subjective properties are defined after more objective properties are defined') or from distinct domains (cf. §1.3).

b) Heads or phrases? Another parameter that divides analyses of adjectival modification is whether adjectives are taken to be heads or whole phrases. In the second case, the adjective can be an AP or an even bigger constituent (eg., a reduced relative clause), and its position can be a specifier one, or an adjunct one.

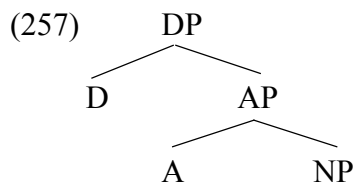
c) Adjectives and relative clauses. A related parameter, which is only relevant if the answer to the previous question was that adjectives are not just heads (A^0) is whether all adjectives are to be analysed as reduced relative clauses, or not.

d) N movement or base generation? A final parameter that divides the proposals is whether, independently of whether modifiers are heads or phrases, the noun moves from a lower position or the order of the noun and the adjective is determined through base generation, for instance by a rule that adjoins to the right or to the left depending on the interpretation of the adjective. If the noun moves, a secondary factor is whether this movement involves just the N head, the NP or a bigger constituent containing the NP.

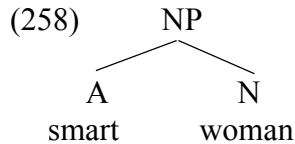
With this background in mind, let us move to the actual theories.

5.1. Adjectives as heads

Berman (1974), Abney (1987), Sproat & Shih (1988), Bouchard (1998) and Baker (2003) have argued that (at least prenominal) adjectives are heads that combine with the noun. There are two main structures that have been proposed here. Abney (1987) is an example of a theory where A is a head introducing N:



Baker (2003: 195), in contrast, proposes that the adjective is a head that is freely merged with an N head; the whole label projects as NP because, otherwise, the noun properties (to be checked in the higher functional structure) would remain unlicensed.



Baker's explanation assumes that the adjective lacks any properties that need licensing from another structure.

(257) has been criticised in several ways:

a) As AP imposes the label to NP, then it predicts that the distribution of an unmodified noun should be distinct from the distribution of a noun with an adjectival modifier, as each one would have a distinct label. Such contrast has not been reported, and therefore it remains mysterious. (258) lacks this problem.

b) (257) suggests that D selects AP, not NP; or, in other words, that DP sometimes selects AP and sometimes selects NPs. We would expect at least to find determiners that require the noun to be modified by an adjective, but again this has not been reported.

c) In (257), the adjective is a function that changes the label of the whole, expanding an NP into a whole AP. The question is what happens then when more than one adjective is present in the structure; the second one would select an object of label AP, not NP.

(259) [DP a [AP nice [AP big [AP warm [NP cup of coffee]]]]]

Baker's proposal in (258), in a sense, is a variation on the traditional analysis that adjectives are (head) adjuncts of nouns. As the label of the whole remains unchanged – in part, due to Baker's assumption that adjectives do not contribute positive properties that have to be checked by the further structure –, iteration of adjectival modifiers is predicted.

In principle, the approach is also designed to account for the fact that in languages like Spanish or English prenominal adjectives cannot contain prepositional modifiers or complements.

(260) *a proud of his son father

This follows if the adjective, when used as a modifier and not as a predicate, is a head. Baker (2003) criticises Abney's take, where the adjective eventually expands into an AP, because it cannot directly account for this lack of PP complements, but the critique is probably unfair given that one can assume that in (257) there is no place for a second complement because A already takes NP as a complement.

The first approach has, however, some advantages that the second approach lacks. Leaving aside the problem of having adjectives that select NP or AP (259), note that treating adjectives as heads could in principle accommodate the fact that adjectives are rigidly ordered in many cases, something that the free merge approach of Baker cannot capture.

In an Abney-style analysis, we could say that when combined with each other, distinct classes of adjectives impose selectional restrictions to their complements. For instance, we could say that size adjectives can select colour adjectives, but not vice versa, and this would be a formalisation of the ordering facts.

(261) [DP a [A^{size}P big [A^{colour}P red [NP car]]]]

However, it seems to be inexact that all languages reject complements to prenominal adjectives (cf. Fanselow 1986 for German).

(262) die [dem Mann treue] Frau
 the the-dat man faithful woman
 'the woman faithful to the man'

Note that the complement can be present, albeit compulsorily preceding the adjective. Cinque (2010: 45-46) takes this cross-linguistic possibility to suggest that the right generalisation is not that prenominal adjectives cannot expand into phrases, but rather that there are (parametrisable) restrictions on whether and when a language allows complements of adjectives. (260) would not, by itself, imply that adjectives are heads.

Another argument against treating the adjective as a head is that it can expand into a full degree phrase (Svenonius 1994):

(263) un muy buen amigo
 a very good friend

The structure underlying (263) cannot be (264), Svenonius notes, because then a degree modifier would dominate all adjectives in a sequence, which is not the case. (265) can be interpreted as 'the friend that is very nice, and good as friend', not as 'the friend that is very good as friend and very nice'.

(264) [DP un [DegP muy [AP buen [NP amigo]]]]

(265) un muy simpático buen amigo
 a very nice good friend

Thus, the structure of (263) must be closer to (266), which implies that the adjective is a phrase either adjoined to NP or introduced as a specifier (of NP or of another category).

(266) [DP un [**DegP muy [AP simpático]**] ... [**AP buen**] ... [NP amigo]]

See §5.3. for the arguments to decide between an adjunction analysis and a proposal where adjectives are specifiers of XPs.

5.2. *Adjectives as reduced relative clauses*

Another alternative has been to argue that all adjectives as modifiers are derived from adjectives used as predicates –an option that, as we saw in §1.1, has been suggested from a semantic point of view– (Chomsky 1957). In this sense, (267) would be equivalent to (268).

(267) las chicas altas
 the girls tall
 (268) las chicas que son altas

the girls that are tall

The proposal works for some cases, specifically in Spanish for many postnominal adjectives, but breaks down when it is extended to the general case. Starting from Bolinger (1967), several facts have been used to argue against a relative clause source for all adjectival modifiers:

a) Many adjectives, typically in prenominal position and with subsective or non-subsective readings, cannot be used as predicates; thus, they cannot come from reduced relative clauses.

- (269) a. un presunto asesino
 an alleged murderer
 b. *un asesino que es presunto
 a murderer that is alleged

In other words, this approach cannot account directly for the distinctions between intersective, subsective and non-subsective modifiers; the approach predicts that all modification is intersective, and the readings that are blocked or acceptable should derive from independent principles, such as the conditions under which the adjective can modify a silent noun.

b) Even for cases where the adjective can be used as a predicate, readings not allowed in the predicate position can be attested in prenominal position:

- (270) a. un viejo amigo
 an old friend (subsective reading)
 b. #un amigo que es viejo
 a friend that is old (intersective reading)

c) The contrasts between prenominal and postnominal adjectives discussed in full in §3 do not receive an obvious explanation in this theory; the account would be independent of the position shown by the adjective inside the noun phrase, because in some cases the relative clause would have to precede the noun and in some others it would have to follow it.

Thus, the claim that all adjectives come from relative clauses cannot be maintained.

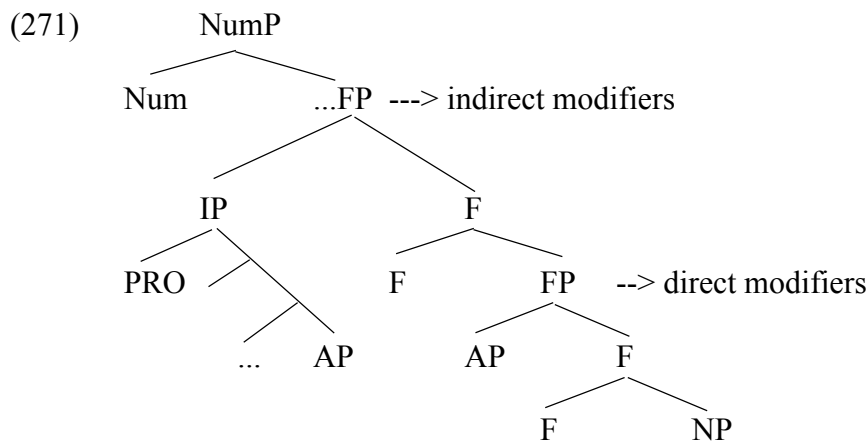
5.3. *A double source analysis for adjectives: Cinque (2010)*

The most influential analysis that is currently used about adjectival modification is the one presented in Cinque (1994, 2003, 2004), which is developed in Cinque (2010). The proposal actually contains three ingredients, which are partially orthogonal to each other:

- a) A double-source analysis of adjectives: some adjectives are reduced relative clauses, while others are APs
 b) An NP movement analysis of N-A ordering, where in the base-generated order all adjectives precede the NP, and postnominal orderings are obtained by NP movement.

c) A cartographic organisation of the area where APs are merged: APs are specifiers of functional heads, and these functional heads are rigidly ordered and specialised for specific conceptual domains.

Starting from the first ingredient, Cinque argues that some adjectives are direct modifiers, APs in the specifier position of a functional projection, while others are indirect modifiers, APs embedded inside a reduced relative clause structure, also as specifiers of FPs. Direct modifiers are merged in a lower area than indirect modifiers.



Indirect modifiers are relative clauses, and the proposal that they are introduced higher than pure APs is supported by the fact that, when relative clauses and adjectives combine, the relative clause is external to the adjective.

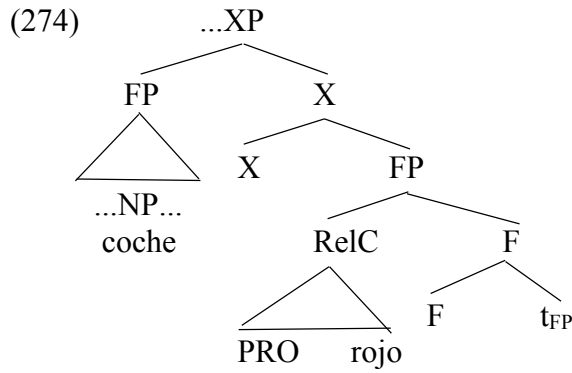
(272) una camiseta grande que es roja
 a T-shirt big that is red

(273) ??una camiseta que es roja grande
 a T-shirt that is red big

The direct modification area is designated for adjectives that are not restrictive, and for adjectives that have non intersective readings, such as the adverbial readings that we have discussed in §2 and §3. The direct modification area, then, is in a way identified as a functional modification area where the properties that the NP denotes can be altered, for instance in order to obtain non-subjective interpretations.

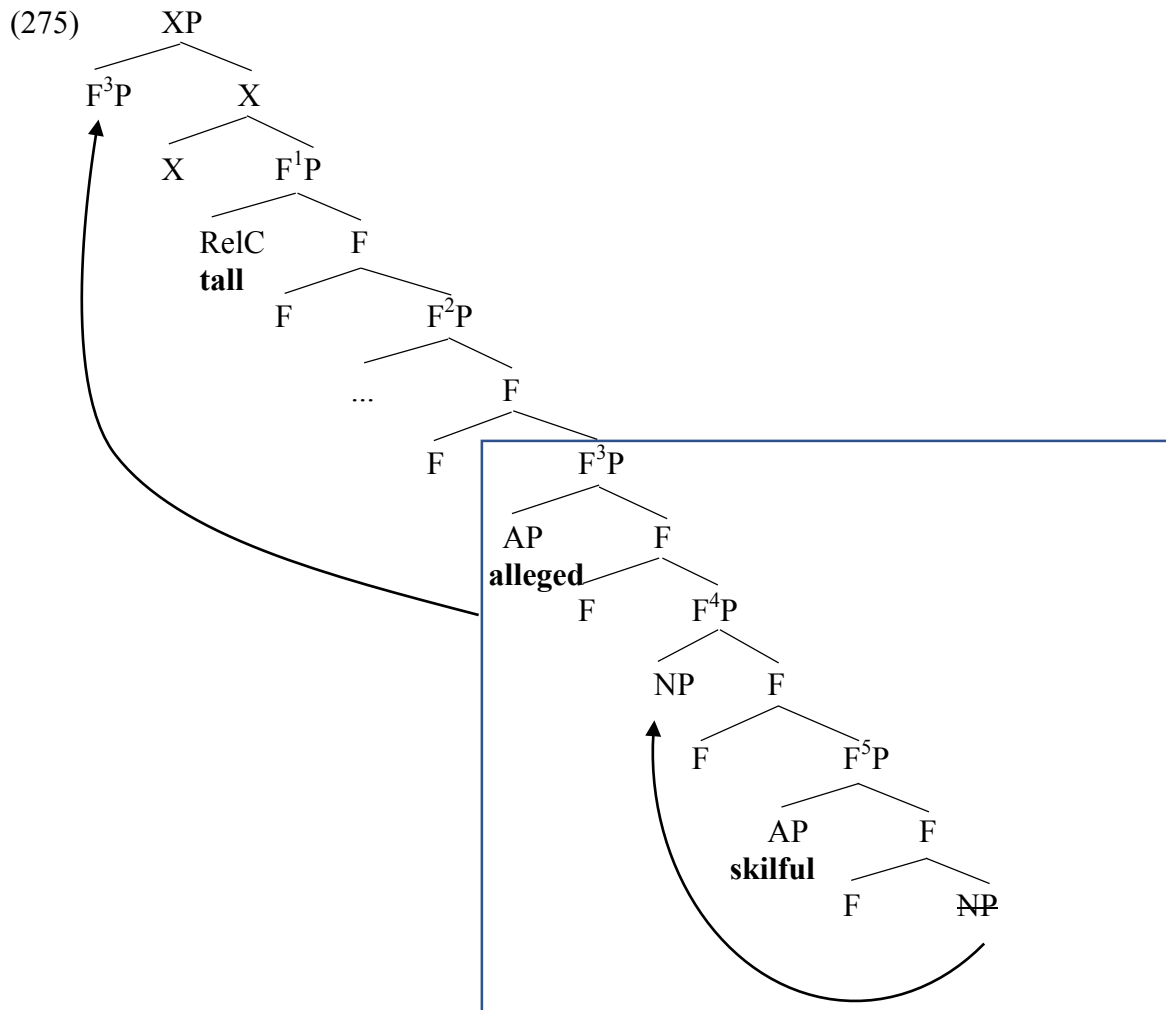
The indirect modification area is associated to restrictive readings and compulsorily intrersective interpretations, which are those that are preserved under all circumstances in the relative clauses where the adjective is used as a predicate.

Moving now to the second ingredient, in a language like Spanish (a constituent containing) the NP has to move past the indirect modification area:



On the assumption that the restrictive reading –plus intersectivity, etc.– is only associated to reduced relative clauses, this compulsory movement operation explains that the restrictive reading will only emerge with postnominal adjectives.

This movement can be preceded by movement of the NP (alone) within the direct modification area (275).



Within the direct modification area (enclosed inside the square in 275), the NP can (but does not have to) move past some APs –as it is the case with the subjectively interpreted adjective *skilful*–, but not others –here, not past the non-subjective adjective *alleged*–. The whole direct modification area, containing the NP, must now move above

the indirect modification area, that is, past the restrictive and intersective adjective *tall*. The result is the following:

- (276) un [F³ presunto criminal hábil] alto
 a alleged criminal skilful tall

The postnominal area allows both the interpretation that direct modifiers have, and the one that indirect modifiers have, because the NP can move past (some) direct modifiers within the chunk that we have labeled F³.

The prenominal area does not allow the interpretation that indirect modifiers have because indirect modifiers force movement of the constituent containing NP past them; thus, if something is an indirect modifier, it must end up in Spanish in postnominal position. The only source for prenominal adjectives is (i) to be in the direct modification area and (ii) that the NP does not move past them within that area.

The subjective reading is internal to the intersective reading because it can only be obtained by having a direct modifier within F³, moving first NP above it, and then moving the whole (pied-piping, then, the subjective adjective) to a position higher than the indirect modifier. The same reasoning applies to the restrictive vs. not restrictive ordering, and the IL vs. SL ordering, on the assumption that the SL reading can only be obtained as an indirect modifier.

Having a not restrictive adjective external to a restrictive one is impossible in this account: it would involve movement of the NP outside F³ directly to the XP position. If relative clauses do not attract NP, but the direct modification area –defined as a functional expansion of the NP– then this ordering is correctly blocked.

Finally, when there is more than one adjective that the NP crosses, the idea is that pied-piping takes place, causing the lower adjectives to be carried together with the NP for the following step of movement, and therefore inverting the sequence to its mirror image. (277) illustrates this for a sequence of 3 reduced relative clauses.

- (277) a. [F1P wonderful [F2P big [F3P red [NP car]]]]
 b. [F3P [car] red]
 c. [F2P [F3P [car] red] big]
 d. [F1P [F2P [F3P [car] red] big] wonderful]

Note that a certain degree of stipulation comes with the approach. First, and most significantly, the reason for movement remains obscure –something that, admittedly, is not problematic if one assumes, as recent approaches do, that movement is always available–. In the approach, it is crucial first that the constituent containing the NP and the direct modifiers moves past the area of indirect modifiers in Spanish or Italian, but not in English. The question is why is this movement necessary in some languages but not others. It could be tempting to relate it to agreement, given that Spanish and Italian adjectives agree in gender and number, while English adjectives do not; however, there are direct modifiers in Spanish that also carry agreement, and that do not allow the NP to pass them:

- (278) a. un-a presunt-a asesin-a
 a-f alleged-f murderer-f
 b. *una asesina presunta
 a murderer alleged

Cinque (2010: 34) tentatively suggests that the constituent that contains direct modifiers and moves past relative clauses should be viewed as a light determiner phrase, dP, which matches a similar head within the relative clauses; movement could be related to this matching, if the language has to connect the two types of constituents overtly in syntax.

Second, among the direct modifiers it is not the case that there are very clear generalisations about which adjectives allow the NP to move past them within the area, and which ones do not allow this movement. Cinque (2010: 72) notes that the individual adjectives that must precede the NP are remarkably similar across standard varieties of Italian, Spanish and French (*mero* 'mere', *futuro* 'future', *pobre* when meaning 'pitiable', *viejo* when meaning 'long-standing'), but even these are subject to variation across varieties of the specific languages. And there are some clear differences; for instance, in Spanish, *presunto* 'alleged' does not allow NP-movement above it (278b), but the French equivalent *présumé* 'alleged' does:

- (279) l'assassin présumé
the murderer alleged

The distinct readings exhibited by adjectives in prenominal and postnominal position have been taken as an important fact supporting analyses where adjectives are specifiers of XPs, and not adjuncts.

The third ingredient in the account, however, is the most controversial one: it refers to the ordering internal to adjective sequences. We will dedicate next section to the specific discussion of this ordering.

To wrap up: an account where adjectives can have two sources explains a lot of the facts attested in Spanish, although the conditions under which NPs can move past direct modifiers, and the causes of movement above relative clauses should still be discussed.

5.4. Adjective ordering: cartographies vs. domains

What Cinque (2010: 39) suggests is that the order between adjectives is more fixed among the direct modifiers than among the indirect ones. Part of the reason is that indirect ones act as relative clauses, and it has been noted that relative clauses can circumvent the 'natural' ordering restrictions otherwise imposed on adjectives (Alexiadou, Haegeman & Stavrou 2007). Contrast, in this sense, (280a) with (280b).

- (280) a. *una mesa estupenda redonda
a table wonderful round
b. una mesa estupenda que es redonda
a table wonderful that is round

Cinque proposes that the rigid order among the direct modifiers can reflect a natural sequence among the functional heads that introduce these adjectives, along the lines of Laenzlinger's (2005) or Scott's (2002) proposals, where each head introduces different conceptual classes of adjectives. The general idea of this approach is the following: the ordering facts, including which adjectives must be prenominal inside a particular language, reflect an intrinsic distribution of types of adjectives imposed by a sequence of heads. Imagine a sequence like the one in (281), where each head hosts a particular type of head.

- (281) [FP F^{class1} [FP F^{class2} [FP F^{class3} [FP F^{class4} ...]]]]

If this sequence reflects direct modifiers, the prediction would be that there should be a transitivity relation between the adjective classes: if within the language, adjectives of class 2 must precede the noun, it would mean that the maximal height at which the NP can move within the direct modification are would be between class 2 and class 3. Then, it would follow, adjectives of class 1 would also compulsorily precede nouns and adjectives of class 4 would also follow N, if the NP moves.

If the sequence reflects indirect modifiers, on the assumption that the dP constituent pied-pipes the FP to which it moves first, the prediction would be that adjectives of class 1 would be more external to the N than adjectives of class 2; both will be more external than adjectives of class 3, and so on.

However, the proposal –elegant as it is– remains problematic for several reasons. The first problem is the claim that the order is fixed among prenominal modifiers. Cinque himself (2010: 58) notes that direct modifiers allow in some languages, like Italian, orders that are marked. We have seen that, in the case of Spanish, the adverbial adjectives can appear in either ordering, with distinct meanings, and that only in the case of adjectives that are in principle intersective the order can be pretty fixed. If the adjectives are ordered by designated heads taking them as specifiers, then the question is how these other orderings emerge.

Second, the height of the adjective does not always correspond, empirically, to the classes of adjectives that must precede the noun. Cinque (2010: 72) points out that, even though exclusively prenominal adjectives tend to correspond to adjectives expressing notions expected to be defined in a high domain –eg., those that involve speaker evaluation, including modal adjectives–, some exclusively prenominal adjectives can follow adjectives that can be either prenominal or postnominal. Let us see one such case.

The adjective *perfecto* 'perfect' in the emphatic / degree intepretation 'applying perfectly to the class' is forcefully prenominal:

- (282) a. un perfecto cretino
 a perfect idiot
 b. #un cretino perfecto
 a idiot perfect
 'an idiot that is perfect as a person'

Under the cartographic view, (282) is accounted for by assuming that *perfecto* is merged among the direct modifiers in a high position that the NP cannot cross. In contrast, *probable* 'probable', as a modal adjective, can be prenominal or postnominal.

- (283) a. un probable asesino
 a probable murderer
 b. un asesino probable
 a murderer probable

This should mean that this adjective is placed in a lower position that NP can cross; if the reasoning continues, then we would expect *probable* to follow *perfecto* when both are prenominal: *perfecto* should be higher than *probable*. However, when both are combined, *probable* can precede *perfecto*, and in fact it sounds more natural in this order:

- (284) a. un probable perfecto idiota
 a probable perfect idiot
 b. ??un perfecto probable idiota
 a perfect probable idiot

Cinque, who as said acknowledges this complication, points out that in some cases the possibility of having a prenominal adjective follow the noun depends on how heavy it is in syntax and phonology. Citing Abeillé & Godard (2000), he notes that in French it is possible to postpose a coordination like *vrais ou faux* 'real or fake' even if neither can, alone, be postposed. His take on the pattern of data is that it is easier to interpret as focus heavier constituents: the postnominal position is associated to an NP-internal focus position, and the remnant of the NP structure compulsorily crosses above it:

- (285) a. [FocusP [F1P fake [F2P ...[NP murderer] ...]]]
 b. [FocusP fake [F1P ~~fake~~ [F2P ...[NP murderer] ...]]]
 c. [XP [F2P ...[NP murderer]...] [FocusP fake [F1P ~~fake~~ [F2P]...]]]

Languages would, then, have to vary with respect to under which conditions individual adjectives can be focalised; this line of research is certainly worth exploring, but it has not been developed, to the best of our knowledge.

A third problem if the sequence of adjectives was as conceptual domain-specific as Scott (2002), Laenzlinger (2005) and Cinque (2010) suggest, we would expect that phrases such as (286) should be impossible:

- (286) una mesa verde y grande
 a table green and big

Here we are coordinating two adjectives, one denoting colour and another one denoting size. If each one of them is introduced by a distinct head, one F^{colour} and one F^{size} , the coordination in (281) should not satisfy the selectional restrictions of either unless we managed somehow to reinterpret 'green' as a size or 'big' as a colour.

So what is the alternative? In principle, an adjunction account could also be viewed as an alternative to the view of adjectives as specifiers of XP constituents. The reasoning would be as follows: if adjectives cannot be viewed as the specifiers of conceptual-specific heads, they can perhaps be treated as free adjuncts that combine with NPs. The restriction on their ordering might reflect a cognitive fact about how humans conceptualise reality, with more 'objective' notions such as form and colour being specified before more subjective notions that involve a form of subjective evaluation that makes them less useful to identify individual classes.

- (287) [NP [AP] [NP [AP] [NP [AP] N]]]

Adjunction avoids the problem of having to postulate a proliferation of conceptually-specific heads, but it comes with its own problems. The first one is that the way in which adjuncts would order with respect to each other is left to rules of cognition whose nature is unclear. Which specific properties of an adjective class determine its ordering with respect to other classes? How can we test the conceptual treatment of adjective classes in general cognition, and what specific predictions does this approach make?

Second, and perhaps more importantly, this approach would have to stipulate somehow that adjunction to the right of one category has different properties than

adjunction to the left of the same category. In Spanish, prenominal and postnominal orderings carry different interpretations, and then somehow adjunction should be sensitive to these distinctions, even though this is not how adjunction is generally conceived.

Third, the approach would also have to stipulate somehow that the default adjunction site in Spanish nominals is to the right of the category, while in English it would be the left.

Some of these problems could be circumvented if one assumes that there are distinct categories within the nominal domain which allow adjunction. In a structure such as (288), assuming NP movement to an intermediate position –as Cinque's approach does–, adjunction to the highest category would create prenominal adjectives, and adjunction to a low functional projection would produce postnominal adjectives. The ordering of adjectives might in part reflect the ordering of these constituents.

(288) [XP [AP] [XP X [YP [AP] [YP Y [ZP [AP] [ZP Z [NP]]]]]]]]

However, this approach saves the problems not because of the use of adjunction itself, but because it involves partitioning the nominal structure into domains. This view has been developed by Svenonius (2008), who however assumes that adjectives are specifiers rather than adjuncts.

In Svenonius' (2008) proposal, the following domains are distinguished, from bottom to top:

- (289)
- a. a category neutral root
 - b. an nP level, corresponding to the nominaliser classifier in some languages, that turns the root into a mass noun
 - c. a SortP level, corresponding to the classifier that makes nouns count in some languages, that defines a specific partition of the mass
 - d. a KindP level, where classes of entities are defined above the notions defined below

e. [_{KindP} Kind [_{SortP} Sort [_{nP} n [$\sqrt{\quad}$]]]]

Each one of these levels can host adjectives in its specifier; on the assumption that only one specifier per phrase is possible, we obtain the following ordering facts:

a) First, at the root level, adjectives that trigger idiomatic readings with the noun are merged –on the assumption that idiomatic readings take place below the categorising head.

(290) agua pesada
 water heavy
 'heavy water, deuterium oxide'

b) At the nP level, adjectives with an exclusively intersective reading that do not presuppose that the noun is count are merged. This includes colour and material.

(291) agua verde
 water green

c) At the SortP level, where the noun has become count, adjectives that involve some measure over the boundaries of the entity are introduced, including size adjectives. These are expected to follow, then, colour adjectives.

(292) mesa verde grande
table green big

d) At the KindP level or above it, focused adjectives considered particularly relevant to define the class of objects are merged. This can be the locus of 'subjective' or evaluative adjectives:

(293) mesa verde grande maravillosa
table green big wonderful

The proposal is very thought provoking, but it is not completely exempt from problems. One of them is that shape adjectives pattern with colour adjectives in being internal to size adjectives; colour and shape can frequently exchange their positions.

(294) a. mesa cuadrada grande
table square big
b. ??mesa grande cuadrada
table big square

(295) a. mesa roja cuadrada
table red square
b. mesa cuadrada roja
table square red

However, it would seem that in order to define the shape of an object it is necessary to partition it first, and then we should expect shape to pattern with size and not colour. It is true, however, that mass nouns seem to be compatible with shape to the extent that one can conceptually infer some solid atomic units within the substance:

(296) a. arroz redondo
rice round
b. arroz alargado
rice long

This might suggest that we need to differentiate the conceptual, real-world notion of shape, that presupposes bounded entities, from the grammatically codified notion of shape, which might extend to masses and trigger a 'shape-of-atom' reading.

A second complication of the approach relates to the ordering between the intersective and the subsective readings of adjectives. Svenonius (2008: 38) suggests that colour adjectives are merged at the nP level –although they could in principle have been introduced at the SortP level also, because partitions of individuals also can have colour– because nP-modification is essentially intersective. SortP modification, in contrast, is typically subsective. This is difficult to reconcile with the fact that subsective readings are internal to intersective readings, as we saw (§4).

(297) a. un bailarín azul bueno
a dancer blue good

- 'a dancer that is blue and is good as a person'
 b. un bailarín bueno azul
 a dancer good blue
 'a dancer that is good as a dancer and that is blue'

In order to obtain this ordering, it should be possible to allow the noun to move past SortP directly, without an intermediate stop above nP that pied-pipes the intersective adjective. But then the order in (298) should be possible, counterfactually.

- (298) *un bailarín grande azul
 a dancer big blue

Third, it is not clear how the restrictive vs. not restrictive readings pattern in Svenonius' (2008) approach. If nP modification is intersective, it seems that the restrictive vs. not restrictive reading cannot follow from a difference in position. Nothing, in principle, prevents Svenonius from incorporating to his account the distinction between relative clause modification and AP modification stated by Cinque, but note that there should not be a height difference between the two types of modification, if both can be intersective.

In summary, the view that the order of domains defined within the noun phrase can help explain adjective ordering seems promising, but perhaps the way in which these domains are defined does not directly reflect the grammatical facts for a language like Spanish.

5.5. *A semiotic analysis of adjective position: Bouchard (1998, 2002)*

The structural approach, as we see, is not devoid of problems. Bouchard (1998, 2002) is a proposal that –rather than explaining the distinct readings through different syntactic positions– keeps the structure of modification minimal and explains the distinct readings via enriching the meaning components that a noun carries with it. In his view, the structure of prenominal and postnominal modification is minimal, as in (299).

- (299) a. [_{N'} A N]
 b. [_{N'} N A]

As we see, there is no distinction between relative clauses and direct modification and no distinction in terms of height. Moreover, Bouchard explicitly counts as an advantage of his proposal that movement operations are unnecessary to derive the orderings.

The contrasts between the two positions are explained as follows: they reflect a fact about the mapping between the semantic component and the expressed form. The postnominal position predicates properties of the noun as a whole, that is, simultaneously of all the meaning components that the noun carries. The prenominal position is used to express a modification of just one element inside the semantic network of the noun, that contains at least the following components (300):

- (300) Elements within the network of N (Bouchard 2002: 7-8)
 a. a characteristic function *f* which provides the property that interprets the N
 b. a specification for a time interval *i*

- c. an indication of the possible world w which allows us to know whether f holds in the actual world or not
- d. a variable assignment function g that associates each variable with a particular entity

The characteristic function can be modified in the case of adjectives that get a degree reading, as in (301):

- (301) un perfecto idiota
a perfect idiot

This modification tends to define natural classes, so the modification counts as 'inherent', which explains why prenominal adjectives are not restrictive: when modifying the characteristic function, they can add properties to this characteristic function, defining therefore inherent properties that apply to the whole class.

The time interval is, obviously, modified by temporal non subsecutive adjectives.

- (302) un futuro problema
a future problem

The possible world variable w is modified by modal adjectives:

- (303) un presunto culpable
an alleged culprit

The variable assignment function g relates the set of properties with the referent; adjectives that denote that there are few referents in the relevant context, or none of them, are among the modifiers that pick this function:

- (304) a. una rara habilidad
a rare ability
b. una falsa respuesta
a fake answer

In general, this implies siding with the semantic theories mentioned in §2.2 that enrich the semantic content of nouns by adding additional variables to them. The syntactic component is simplified at the cost of complicating the semantic denotation of nouns. The proposal attempts to connect the semantic restrictions with the phonological and syntactic ones, as well.

In the phonological side, the reasoning is as follows: prenominal adjectives tend to be shorter because that position is semiotically privileged for modifiers expressing inherent and 'functional' properties. In accordance to Zipf's law, words expressing functional content tend to be shorter, which explains that the adjectives that most appear in prenominal position correspond also to shorter adjectives, as a tendency.

In the syntactic side, the association between the prenominal position and the expression of inherent properties through the modification of the characteristic function f accounts for the fact that adjectives in prenominal position do not take complements. The idea is that if the property has to be inherent, it cannot be dependent on a particular context; this is what makes the presence of complements disfavoured, as they introduce extra participants that the property depends of within a specific context.

Another fact of adjective modification, as we saw, is that many subsective and non subsective adjectives reject the predicative position:

- (305) a. *Este culpable es presunto.
 this culprit is alleged
 b. *Este prisionero es futuro.
 this prisoner is future
 c. #Juan es bueno.
 Juan is good
 (Out of context: *'Juan is good as a doctor')

Bouchard argues that the reason for this restriction is that the adjective can only access one specific variable of the noun from the prenominal position, and the predicative position forces the adjective to predicate of the whole noun network. This approach, incidentally, correctly predicts that (305) will be grammatical if the subject is an entity that, as a whole, denotes the type of variable that the adjective requires:

- (306) a. ?Su brillantez es presunta.
 his brightness is alleged
 b. Esta época es futura.
 this period is future
 c. Este médico es bueno.
 this doctor is good
 'This doctor is good as a doctor'

However, the approach also has some shortcomings. For one thing, it does not provide a complete account of why the subsective, non restrictive, IL reading is available in postnominal position, and moreover internal to the intersective, restrictive, SL readings when two adjectives appear in a series. As we have seen (§3.3.), the interpretation of adjectives in postnominal position is not fixed for only one reading: they allow the same readings as the prenominal position, and then some additional ones. That there is no one-to-one mapping of interpretations and positions is a clear problem for Bouchard's semiotic account.

There is one possible way of reading Bouchard's theory that, however, involves not accepting his conclusion that the syntactic structure is minimal and homogeneous for prenominal and postnominal adjectives. We could take the modification of the whole semantic network of the noun as a systematic property of relative clauses, which always get linearised to the right of the noun. The modification of just one element inside that network, which Bouchard associates directly with the prenominal position, could instead be a property of what Cinque (2010) calls 'direct modification'. In this sense, direct modification could be 'functional' in the sense that, being structurally closer to the NP, it can access the internal atoms of the noun. However, NP movement within the area of direct modification should still be possible, allowing the relevant interpretations to appear in postnominal position.

5.6. *The position of relational adjectives*

As the reader will have noticed, Cinque (2010), Svenonius (2008) and to some extent Bouchard (2002) do not discuss in length the position of relational adjectives, which as we saw is characterised by two properties: (i) they must be postnominal and (ii) they tend to be as internal as possible to the N.

In Cinque (2010: 72), a few subtypes of relational adjectives are treated as direct modifiers defining classes of N, with the proviso that the NP must cross them compulsorily in Romance: provenance and classificatory adjectives.

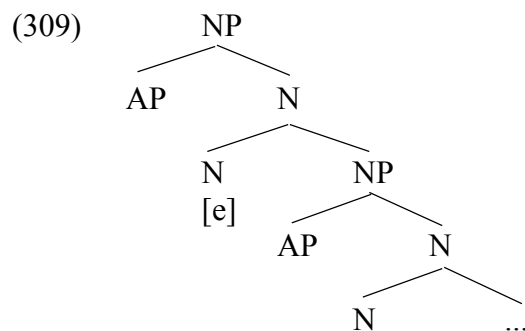
- (307) a. *la nigeriana carne
 the Nigerian meat
 'the meat from Nigeria'
 b. *un topológico enigma
 a topological enigma
 'an enigma pertaining to topology'

The reason for treating them as direct modifiers is, presumably, that they do not always appear well in predicative position and that they seem to be able to be interpreted as arguments of the noun, if it carries an event-related interpretation.

- (308) a. la invasión nigeriana
 the invasion Nigerian
 'the invasion by Nigeria'
 b. *Esta invasión fue nigeriana.
 this invasion was Nigerian

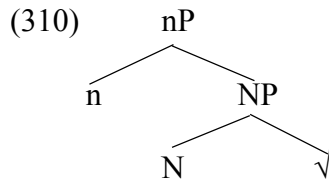
However, placing them in the direct modification area is not the only logical possibility once the indirect modification area is excluded. To date, the most influential analysis of the syntactic position of relational adjectives is Bosque & Picallo (1996).

Bosque & Picallo's (1996) proposal has one part that is compatible with Cinque's proposal, and another part that is not. The compatible part claims that relational adjectives are specifiers, directly, of NP; the NP can be layered.

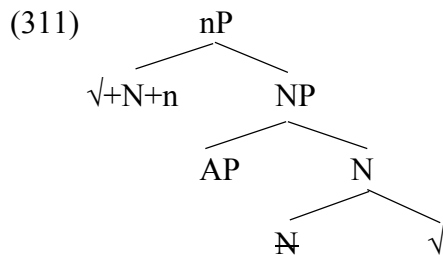


From the base position, N raises (via head-movement) to a position dominating the whole area, which for them is a Case projection. As we can see, this aspect of the theory is incompatible with Cinque, given the reasons he gives against deriving adjective ordering by N-head movement (2010: 37-41).

This approach can be reformulated in ways that make it more compatible with the idea that NP moves. The idea would be that the constituent that Cinque (2010) treats as the noun phrase is actually layered at least in three parts: nP, which Svenonius (2008) uses, NP and the root level.



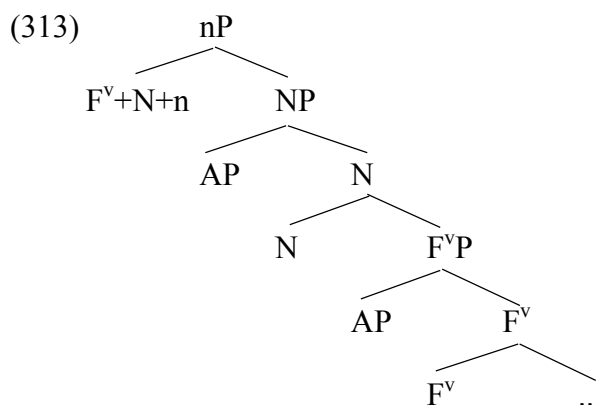
Assume furthermore that, for morphological reasons, N always moves up to n, meaning that the noun spells out always in n⁰. Now, relational adjectives can be placed in the specifier position of NP, and head movement guarantees they will always be postnominal in Spanish.



Assume the specifier of NP is the locus of classificatory relational adjectives; this is plausible, as they define subclasses of the set of properties that the noun denotes. One fact we discussed in §4 is that classificatory adjectives precede argumental adjectives:

- (312) una invasión aérea italiana
 an invasion air-rel Italian
 'an air-invasion by Italy'

The argumental interpretation of relational adjectives is restricted, as expected, to deverbal nouns, which are the only ones that can properly contain argument structure (Grimshaw 1990). Assume that in such cases, the complement of NP is (part of) the verbal structure (Alexiadou 2001), and that the relational adjective gets the relevant interpretation in that position.



Head movement, again, would derive the right order, where thematic adjectives follow classificatory adjectives. Then, the whole nP can move in the way proposed by Cinque (2010), deriving an order where relational adjectives are internal to any other adjective. The internal ordering between agent and patient relational adjectives would

reflect, presumably, a fact about the positions where each one of these theta-roles is available within the reduced functional structure of the verb in a nominalisation.

5.7. *The points of consensus and the disagreements*

Here we will summarise the current status of knowledge, as explained before.

Most proposals seem to agree that adjectives should not receive a homogeneous analysis, with some of them being predicates (embedded into a clause-like structure) and others being pure modifiers. Approaches where all adjectives are predicative are subject to the claim that the noun introduces a relatively big number of variables that are accessible under relevant conditions, which for the time being seems unmotivated. The underlying problem seems to be whether all adjectives can be analysed as intersective modifiers or distinct classes need to be assumed.

Most proposals assume that adjectives are XPs, and that they are placed as specifiers rather than adjuncts. The adjunction proposal falls short of accounting for the wide array of differences in prenominal and postnominal position.

We still lack a proper account of adjective ordering within noun phrases. The cartographic approach involves a proliferation of categories, many of them assigned to distinct conceptual domains which otherwise do not seem to pattern differently in terms of grammatical behaviour, and the domain approach, while promising, has not been developed enough yet to provide a full account.

Another empirical fact that is not properly accounted for in these theories is the relation between prenominal adjectives and specificity. We have seen that prenominal adjectives trigger, with indefinite noun phrases, a specific reading, something which blocks prenominal adjectives from NPs under the scope of intensional operators of several kinds (imperatives, some modals and generics). It is unclear why the inherent interpretation of Cinque's direct modifiers should be associated to specificity, which seems to be a property of determiners and quantifiers. In principle, it should be possible to define a class of objects with some inherent properties and not presuppose that there exists in the actual world a specific entity that instantiates this class. This aspect of the behaviour of adjectives, then, is largely unaccounted for in the integrated theory of nominal modification.

6. Prepositional phrases: main facts and theoretical problems

Let's now move to the problem of prepositional phrases and how they act as nominal modifiers, an issue described for Spanish in some length in Rigau (1999), Picallo (1999), NGLE (2009: §12.9-10, §12.16).

There are two main questions that are pervasive in any research on prepositional modifiers. The first one is that prepositional phrases, with only one exception, must be postnominal and compulsorily follow all adjectives, independently of their meaning:

- (315)
- a. el poema español maravilloso de ese autor
the poem Spanish wonderful of that author
 - b. *el poema [de ese autor] [español] [maravilloso]
the poem of that author Spanish wonderful
 - c. *el poema [español] [de ese autor] [maravilloso]
the poem Spanish of that author wonderful
'the wonderful Spanish poem of that author'

The second is the question of whether some of the prepositional phrases are arguments rather than modifiers. Virtually every proposal accepts that nouns derived

from verbs (and partially, from adjectives) have arguments materialised as prepositional phrases or possessives (316). However, these cases are relatively simple given that there is a verbal or adjectival base which is responsible for introducing those arguments, either passing them to the noun or hosting them in the internal layer.

- (316) la destrucción de la ciudad por las tropas
 the destruction of the city by the troops
 Roughly equivalent to: 'The city was destroyed by the troops'

It is more controversial to claim that non deverbal nouns also carry arguments. For instance, Picallo (1999: 382-392) treats other noun classes as carrying arguments, such as representation nouns (*estatua* 'statue', *retrato* 'portrait', *foto* 'picture', *poema* 'poem'); Rigau (1999) proposes that, in addition to this class, other underived nouns, like *miedo* 'fear' and *enfado* 'anger', expressing states, take arguments. Another famous case is relational nouns such as *padre* 'father', *vecino* 'neighbour' and *esquina* 'corner', where authors like Barker (1995) make the claim that they carry arguments, while others like Adger (2013) argue that they don't. The controversy revolves around two issues: (i) do nouns introduce arguments by themselves in any case? If no noun introduces arguments, one can have an elegant account of nouns as the only categories that, formally, do not introduce complements or specifiers, as Hale & Keyser (2002) have suggested; (ii) the status that semantic entailments should have to define a constituent satisfying that entailment as an argument. If a noun like 'father' entails that there must be a son, is this enough to claim that a PP introducing the entity acting as the son is, syntactically, an argument? Alternatively, it is conceivable that the PP is not an argument, but –precisely because the noun entails that there is a 'son' role associated to the meaning– as a modifier it can be interpreted as identifying that role, with *el padre de Juan* 'the father of Juan' denoting roughly 'x is a father, and x is somehow related to Juan'.

This background makes it difficult to say, without controversy, that the PP in (315) is a modifier and not an argument. However, during the course of this section we will encounter some evidence that suggests that these PPs should be regarded as modifiers and not arguments in the proper sense.

6.1. Classes and ordering

One first distinction that has to be done with respect to the position of prepositional constituents inside nouns is the one noted by, among others, Giorgi & Longobardi (1991) and Sánchez (1996), which differentiates PPs introducing (typically) bare nominals, used to provide subclasses of an entity (317a), and PPs introducing nouns with more functional structure, typically referential, that can be interpreted as a participant in an eventuality related to the noun (317b).

- (317) a. el escritor de novelas
 the writer of novels
 'a novelist'
 b. el escritor de la novela
 the writer of the novel
 'the writer of the novel'

Beyond their meaning contribution, that can be reminiscent of arguments in (317b) while (317a) is subjective in the sense of defining a subclass of the kind defined by the nominal, there are some formal processes that differentiate the two. One is that the PP

in (317b) can be substituted by a possessive, while this is impossible in (317a). (318), thus, can only be interpreted as parallel to (317b).

- (318) #su escritor
their writer

Second, the PP in (317a) can precede or follow adjectives, as shown in (319). In fact, PPs denoting subclasses of an entity are the only PPs that can be more internal to the noun than adjectives.

- (319) a. ?un escritor elegante de novelas
a writer elegant of novels
b. un escritor de novelas elegante
a writer of novels elegant
'an elegant novelist'

As we can see in (320), the PPs introducing 'arguments' must follow any adjective. (320b) is ungrammatical unless the adjective is interpreted as belonging to the PP-noun phrase

- (320) a. el escritor elegante de la novela
the writer elegant of the novel
b. *el escritor de la novela elegante
the writer of the novel elegant
'the elegant writer of the novel'

This makes it very clear that we have two distinct types of PPs with different formal and semantic properties; in fact, both can co-occur in the same noun phrase, as in (321).

- (321) el productor de cine de esta obra de teatro
the producer of cinema of this work of theatre
'the film producer associated to this theatre play'

As expected, in such cases the PP denoting subclasses is more internal to the noun than the PP that somehow relates to participants involved in the eventuality.

Let us consider the ordering relation more closely, from the perspective of whether PPs can ever express arguments of the NP outside from deverbal nominals. That the PP that is candidate to denote an argument is external to other PPs and adjectives does not fit well with the general behaviour of arguments, as we know from verbal phrases, where there are clearer tests to determine the argument status of a constituent. Arguments are generated internally to the lexical projection of the category acting as a predicate, and adjuncts are merged externally to them:

- (322) a. ??Juan come en la cocina una manzana.
Juan eats in the kitchen an apple
b. Juan come una manzana en la cocina.
Juan eats an apple in the kitchen

If the PPs in (317b) really denote arguments, they would behave in the opposite way. Part of the reason could be that 'arguments' within noun phrases are introduced by

functional projections merged above NP –as for instance Baker (2003) proposes to introduce the subject of adjectives–, but note that then these PPs would not be arguments of the noun in a proper structural sense.

Concentrating now on the PPs that relate to pseudo-arguments, there are also ordering facts depending on their use. In order to avoid that the preposition used plays any role in the ordering facts, we will illustrate this with representation nouns, because they accept sequences of up to three PPs with *de* 'of'. As noted for instance in Escandell-Vidal (1995), there are three relevant types:

- PPs expressing the patient or represented entity
- PPs expressing the agent or author
- PPs expressing the possessor of the entity

When they appear together, they are rigidly ordered: first, represented entities, then authors, then possessors:

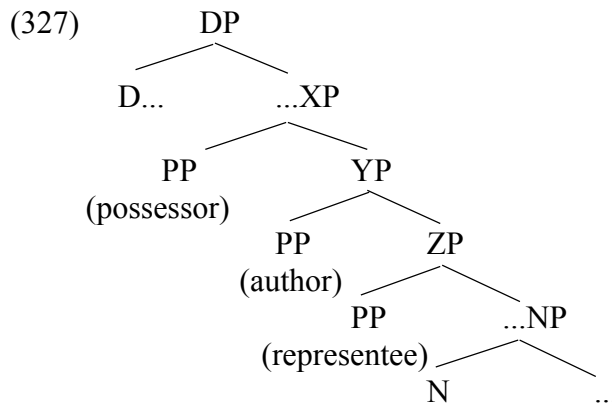
- (323) a. el retrato de Carlos IV de Goya del Museo del Prado
 the portrait of Carlos IV of Goya of-the Museum of the Prado
 'the portrait of Carlos IV painted by Goya belonging to the Prado Museum'
 b. la traducción de Joyce de Valverde de Luis
 the translation of Joyce of Valverde of Luis
 'the translation of Joyce made by Valverde that Luis owns'

Any of the three can turn into a possessive pronoun, but the sequence obeys relativised minimality principles. When the three PPs are present, the possessor is the only one that can become a possessive (324a). If the possessor is missing, the author one becomes the possessive (324b); the represented entity can only become a possessive if the other two PPs are missing (324c).

- (324) a. su retrato de Carlos IV de Goya
 its portrait of Carlos IV by Goya
 'the portrait the museum owns of Carlos IV by Goya'
 b. su retrato de Carlos IV
 his portrait of Carlos IV
 'the portrait he made of Carlos IV'
 c. su retrato
 his portrait
 'the portrait where he is represented'
- (325) a. *su retrato de Goya del Museo del Prado
 his portrait of Goya of-the Museum of-the Prado
 Intended: 'the portrait where he is represented, by Goya and owned by the Prado Museum'
 b. *su retrato de Carlos IV del Museo del Prado
 his portrait of Carlos IV of-the Museum of-the Prado
 Intended: 'the portrait that he painted of Carlos IV that the Prado Museum owns'

On the assumption that prenominal possessives are placed in the D area, as they block other determiners in modern Spanish (326), these facts suggest that the most external PP is also the highest in the sequence, as in (327).

- (326) *el su libro
the her book



In the configuration in (327), we expect by relativised minimality (Rizzi 1990) that the relation between the possessor in DP and the PPs will be established with the possessor PP if it is present; in its absence, it will be established with the second highest PP, the author PP, and the representee PP will only be related to the possessive if the others are missing.

This hierarchy also predicts that the way in which the PPs obtain their linear ordering involves cyclic pied-piping of the lower PPs with the NP, which would move in the same way as Cinque (2010) proposed for the indirect modifiers:

- (328) a. [XP [PP possessor] [YP [PP author] [ZP [PP representee] ...[NP]]]]
 b. [XP [PP possessor] [YP [PP author] [AP NP [ZP [PP representee] ...[NP]]]]]]
 c. [XP [PP possessor] [BP [AP] [YP [PP author] [~~AP NP [ZP [PP representee] ...[NP]]]]]]]]
 d. [CP [BP] [XP [PP possessor] [~~BP [AP] [YP [PP author] [AP NP [ZP [PP representee] ...[NP]]]]]]]]]]~~~~
- (329) [CP [BP [AP [NP retrato] [ZP [PP de Carlos IV]]] [YP [PP de Goya]]] [XP [PP del Museo del Prado]]]

Finally, it seems necessary to distinguish a final class of prepositional modifiers that are even more external than possessor ones: modifiers expressing the temporal or spatial location of the referent of the DP (330):

- (330) a. el autobús de las tres
the bus of the three
'the three o'clock bus'
 b. el libro de la esquina
the book of the corner
'the book that is in the corner'

There are several reasons to differentiate these PPs from possessor ones. First of all, they can co-occur with possessor PPs and in such case they follow them:

- (331) a. el libro de Juan de la esquina
the book of Juan of the corner
'the book belonging to Juan that is in the corner'
b. el autobús de Juan de ayer
the bus of Juan of yesterday
'yesterday's bus related to Juan'
- (332) *el libro [de la esquina] [de Juan]
the book of the corner of Juan

Second, these PPs cannot be substituted by possessive pronouns (Rigau 1999: 345).

- (333) el autobús de ayer > *su autobús
the bus of yesterday its bus

Thus, we have three different types of prepositional modifiers, one of them divided into three classes:

- (334) a. Classifying PPs (*casa de verano*, 'house of summer, summer house')
b. Pseudo-argumental PPs, divided into:
i. patient or representee PP: *una biografía de Lincoln* 'a biography of Lincoln'
ii. agent or author PP: *un paisaje de Van Gogh* 'a landscape of Van Gogh'
iii. possessor PP: *un abrigo de Juan* 'a coat of Juan'
c. PPs locating entities in space or time: *el autobús de ayer* 'the bus of yesterday'

When more than one such PP appears, their ordering is postnominal and as in (335), counting from the most internal to the most external:

- (335) a > bi > bii > biii > c
la novela de detectives de Poirot de Christie de Juan de encima de la mesa
the novel of detectives of Poirot of Christie of Juan of above of the table
'the detective novel of Poirot by Christie, belonging to Juan, that is on the table'

6.2. Prepositions allowed

The class of prepositions used inside DPs in Spanish is also restricted.

Let us start with the pseudoargumental PPs. In the case of deverbal or deadjectival nominalisations, the prepositions used correspond to those available also on the verbal and adjectival construals, without further restrictions. Significantly, this includes prepositions such as *hasta* 'until', *hacia* 'towards', *por* 'by' and *en* 'in'.

- (336) a. huir hacia Francia
flee towards France
b. su huida hacia Francia
her escape towards France
- (337) a. buscar hasta las tres
search until the three
'to search until three o'clock'
b. una búsqueda hasta las tres

- (338) a. search until the three
 'a search until three o'clock'
 a. ser invadidos por Esparta
 be invaded by Sparta
 'to be invaded by Sparta'
 b. su invasión por Esparta
 'their invasion by Sparta'
- (339) a. nacer en el hospital
 be.born in the hospital
 b. su nacimiento en el hospital
 his birth in the hospital

Outside these nominalisations, the prepositions allowed in non derived nominals are extremely restricted, and reject the prepositions mentioned above, sometimes substituting them with *de* 'of'.

- (340) a. *una tormenta hacia Francia
 a storm towards France
 b. ??una fiesta hasta las tres
 a party until the three
 c. *un libro por Cervantes
 a book by Cervantes
 d. ??una clase en el campo
 a class in the country

The prepositions that are most natural to introduce pseudo-arguments with underived nouns in Spanish are, in addition to *de* 'of', *con* 'with', *contra* 'against' and to some extent also *a* 'to'.

- (341) a. Una fiesta con tus amigos puede hacerte sentir mejor.
 a party with your friends can make-you feel better
 'A party with your friends might make you feel better'
 b. La oda a mi madre que escribiste es demasiado larga.
 the ode to my mother that you.wrote is too long
 'The ode to my mother that you wrote is too long'
 c. Escribí un texto contra Trump.
 wrote.1sg a text against Trump

Generally, Spanish rejects two pseudo-arguments introduced by *de* 'of'. This extends to nominalisations:

- (342) a. *la invasión de Italia de las tropas
 the invasion of Italy of the troops
 b. la invasión de Italia por (parte de) las tropas
 the invasion of Italy by part of the troops
 'the invasion of Italy by the troops'

The exception are representation nouns (*foto* 'photo', *retrato* 'portrait', *novela* 'novel'), which as we saw in the previous section allow up to three PPs of this class with the preposition *de*.

The classifying PPs can be introduced by prepositions such as those listed in (343), although *de* 'of' is also the most usual one in such cases:

- (343) a. un juguete a pilas
 a toy to batteries
 'a toy that runs with batteries'
 b. un jersey con mangas
 a sweater with sleeves
 c. un libro de cuentos
 a book of tales
 d. atún en vinagre
 tuna in vinegar
 e. una película para niños
 a movie for children
 f. refresco sin gas
 soda without gas

Finally, *de* 'of' is the only preposition allowed to introduce the PPs that locate the referent in space or time.

- (344) a. el libro de (debajo de) la mesa
 the book of below of the table
 b. *el libro en (debajo de) la mesa
 the book on below of the table
 (345) a. el avión de las tres
 the plane of the three
 'the three o'clock plane'
 b. *el avión a las tres
 the plane at the three

6.3. How to explain the restrictions on ordering

The main facts that need explanation are the following, then:

- a) All prepositional modifiers, independently of whether they are restrictive or not, intersective or not, etc., must appear in postnominal position.
 b) There is a hierarchy that places classifying PPs closer to the noun, sometimes exchanging their position with adjectives, and orders pseudo-argumental PPs according to the nature of the relation it expresses (patient > agent > possessor).

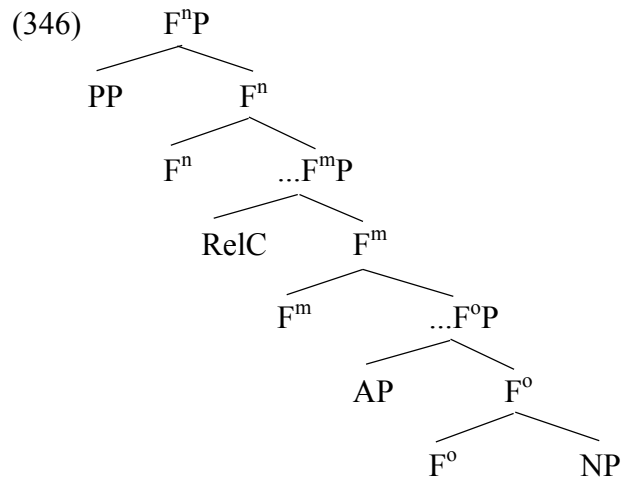
We can add to this another related fact, mentioned in our discussion of adjectives:

- c) Adjectives that contain prepositional complements cannot appear prenominally.

In this section, we will look at theories that potentially can explain these facts, to critically assess them. We will divide all existing theories in three classes: (i) cartographic theories; (ii) theories relating P with case; (iii) theories relating the restriction to the proposal that nouns do not take arguments and (iv) proposals where the external position of PPs are related to head-linearisation parameters.

Let us sketch the first one that, while it does not have explicit proposals, is to some extent implicitly assumed on much of the literature about nominal modification. The

main idea here is that the modifier area inside DPs (the sequence of FPs used to introduce APs and reduced relative clauses) is ordered in a way that PP specifiers are allowed only in a relatively high region that dominates the region where APs and relative clauses are merged.



For the proposal to work, a number of assumptions should be made. First, movement above F^nP should be compulsory, in order to capture the fact that PPs are always postnominal. Second, the NP would have to move cyclically first within the F^oP area, and then, through pied-piping that carries all AP modifiers, to the F^mP area, again carrying all modifiers through pied-piping. The specifier of a category above F^nP would then host a complex constituent containing the NP with all its AP modifiers, and the relative clause modifiers embedded inside the F^mP area.

There are several problems here, and they reflect the general shortcoming of cartographic approaches, namely that they postulate a strict order of heads and reduce height to the position that grammar imposes on each individual head within the sequence. The ordering between APs, relative clauses and PPs cannot be based on direct conceptual notions, because as (347) shows the same property has two different positions depending on whether it is expressed with a relative clause or with a PP:

- (347) a. una casa grande de color verde
 a house big of colour green
 [size > colour]
 b. una casa verde de gran tamaño
 a house green of big size
 [colour > size]

So how is the ordering built? The obvious candidate is the category of the specifier, which in itself is a bizarre way of ordering heads inside the functional sequence: adjectives first, reduced relative clauses then and finally PPs. However, reduced relative clauses and 'overt' relative clauses should still be differentiated in terms of their position, because PPs are external to reduced relative clauses, but internal to overt relatives:

- (348) a. la casa verde de mi hermano
 the house green of my brother
 b. la casa de mi hermano que visitaste ayer

- the house of my brother that visited.2sg yesterday
 'the house of my brother that you visited yesterday'
 c. *la casa de mi hermano verde
 the house of my brother green
 d. *la casa que visitaste ayer de mi hermano
 the house that visited.2sg yesterday of my brother

This is, then, the first problem: to find a rationale for the proposed ordering of heads. A syntactically-based ordering which takes the category of the specifier as the guiding principle seems quite arbitrary, given these complications.

The second problem, however, is empirical: how to integrate the classifying PPs in the story. As we mentioned, classifying PPs can precede adjectives in postnominal position. As they must also be postnominal, the conclusion in this approach is that they should be very low, even lower than some APs which have to remain prenominal within the direct modification area.

- (349) [FP [AP] F [XP [NP] X [FP [PP] F [NP]]]
 supuesto libro de ejercicios
 presumed book of exercises

The existence of such PPs complicates the story significantly, because now we have to force movement of NP past such specifiers, something which is not compulsory in the case of all the other direct modifiers, which always can be linearised prenominally. It also complicates the proposal from the perspective of the claim that all PP modification is higher than AP modification, because in this particular case PP modification should be lower than even non-restrictive direct modifiers. Note that in (350) the presence of the classifying PP does not even block the subjective reading of the postnominal adjective.

- (350) un cantante de ópera bueno
 a singer of opera good
 'an opera singer that is good as an opera singer'

In conclusion, this approach might work mechanically, but at the cost of postulating the position of PPs in a quite arbitrary way, and forcing movement of the NP above them in all cases, without any clear rationale that explains why this should be so.

Cinque (2010) tries, in fact, a different way of deriving the postnominal and external position of PPs. The core of his proposal assumes Kayne's (2004) derivation of PPs in their relation with case. Let us see the proposal step by step, illustrated for a case as *la casa roja de María* 'the house red of María'. Cinque (2010) proposes that first the head noun and the DP that eventually will be introduced by the preposition merge together.

- (351) [NP casa María]

At this level, the DP is an argument of sorts of the noun. Then, we introduce the FP that takes in its specifier a modifier; for the sake of the argument, assume that in this case there were no direct modifiers and the adjective is a reduced relative clause.

- (352) [FP [roja] F [NP casa María]]

Now, the whole NP moves above the FP:

- (353) [XP [NP casa María] X [FP [roja] F [~~NP casa María~~]]]

The problem at this point is that the DP *María* is an argument of the head noun, but it has not received case. A DP-internal case assigning position, which for the sake of simplicity we can identify with a genitive position, is then introduced, and the argument DP moves there.

- (354) [KP [María] K [XP [NP casa ~~María~~] X [FP [roja] F...]]]

The PP is introduced as the layer immediately above KP at this point.

- (355) [P de [KP [María] K [XP [NP casa ~~María~~] X [FP [roja] F...]]]]]

And the XP constituent is further attracted to the specifier of PP:

- (356) [PP [XP [NP casa ~~María~~] X [FP [roja] F...]] P de [KP [María] K [~~XP [NP casa María] X [FP [roja] F...]]]]]~~

Crucially, provided that the position to assign genitive case is always higher than the position where all kinds of adjectives are introduced, the derivation gives the right linear ordering.

However, the reader has undoubtedly spotted some problems. One of them is that the approach is tenable for pseudo-argumental PPs, because those are the ones that – under standard assumptions – must be case-licensed. However, the restriction that PPs must be postnominal extends to classifying PPs such as *de ópera* 'of opera', and the external position is also occupied by PPs which are difficult to interpret as arguments of the noun, such as those in (357):

- (357) a. un hombre simpático de grandes bigotes
 a man nice of big moustache
 'a nice man with a big moustache'
 b. una estudiante inteligente de pelo largo
 a student intelligent of hair long
 'an intelligent student with long hair'

Extending this approach to all PPs would involve, to begin with, a very loose definition of argument, or alternatively a theory where essentially all modifiers of nouns that contains other nouns inside them must get case assigned. Secondly, the approach would have to postulate multiple case-assigning heads within the DP, because as we saw there are up to five PPs of different types that can appear with the same noun. Not all of them can be substituted by a genitive, which is in principle compatible with the proposal because if there are multiple heads it is expected that not all of them would assign genitive; however there are at least three that in principle allow for possessive substitution (agent-oriented, patient-oriented and possessor), and that brings up the question of how are these heads compatible with each other. To account for the three main classes of pseudo-argumental PPs, it is plausible that this theory would eventually have to postulate a layered NP structure (as Bosque & Picallo 1996 did, in part) where whenever an argument is introduced an extra KP is made available, roughly as in (358):

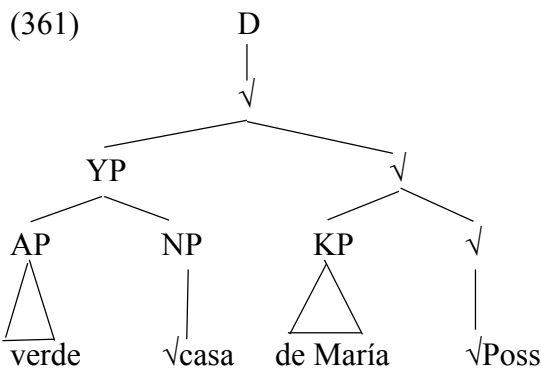
(358) [PP de [KP [NP possessor [PP de [KP [NP agent [PP de [KP [NP patient]]]]]]]]]]]]]]]]]]

A third problem of the approach is that it does not treat *de María* 'of María' as a syntactic constituent; *María* is the specifier of one projection, while the preposition is the head of another projection. However, these two words seem to behave as a single constituent for (for instance) coordination and movement:

(359) las casas [de Juan y de María]
 the houses of Juan and of María

(360) DE MARÍA leí una novela.
 of María read.1sg a novel

The third kind of proposal that we will overview here can be best illustrated with Adger (2013). It is dependent on the proposal that nouns never introduce arguments: the PPs that can be associated to arguments are external because they are arguments of heads that are hierarchically higher than the constituent containing the NP. There are many ways of implementing this idea, but they all share the intuition that the NP and the preposition do not form a syntactic constituent to the exclusion of other heads. The particular implementation by Adger (2013: 112) is the one in (361):



The particular implementation involves an empty (silent) root, which is the one that introduces the argument: $\sqrt{\text{Poss}}$, one within a series of empty roots that determine different argument relations, including representation objects and part-whole relations. The noun never takes an argument; the noun builds its own functional sequence, where the adjective is also merged, and then combines with the empty root. Then, the whole projects into a DP.

The central claim is that the NP and the adjective form a syntactic constituent in the absence of the PP, as (361) represents. Because of this, no matter whether the NP within YP moves above the adjective or not, the PP will always be external to the constituent formed by the noun and the adjective. The approach can assume Cinque's (2010) general view provided that the direct modification and the indirect modification areas are embedded inside YP in the diagram in (361).

The proposal, note, does not predict that all PPs will be external: only pseudo-argumental PPs will have to be external. The classifying PPs, which as we saw can be internal even to nouns, are not arguments, so they will not be peripheral. Thus, Adger's approach can automatically explain why classifying PPs do not pattern with the others.

Some other facts are compatible with the approach, and can be incorporated into the theory by making additional assumptions. The relative position of possessor, patient-related and agent-related PPs can be explained if the empty roots combine with each other in a fixed order such as that $\sqrt{\text{Poss}}$ is always higher than $\sqrt{\text{Representation}}$; additional empty roots could be posited to further differentiate between agents (authors) and patients (represented entities). See for instance Adger (2013: 155) for an explicit proposal where the empty roots combine with each other, defining hierarchies of arguments.

The claim that the adjective and the noun form one single syntactic constituent to the exclusion of the PP is supported by some evidence. Adger (2013: 110) offers as evidence that in Gaelic the quantifier *uile* 'all' can appear between the adjective and the PP, but not after the PP.

- (362) na dealbhan mòra ud uile de Mhàiri
 the pictures big that all of Mhàiri
 'all those big pictures of Mhàiri'
 (363) *na dealbhan mòra de Mhàiri ud uile
 the pictures big of Mhàiri that all
 'all those big pictures of Mhàiri'

The results, as noted by Adger, are replicated in Spanish through postposed demonstratives:

- (364) a. el cuadro verde este de Picasso
 the painting green this of Picasso
 b. *el cuadro verde de Picasso este
 the painting green of Picasso this
 'this green painting by Picasso'

Crucially for this approach, the classifying PPs behave as constituents with the NP, as Adger expects, given that they would not be introduced in the root constituent.

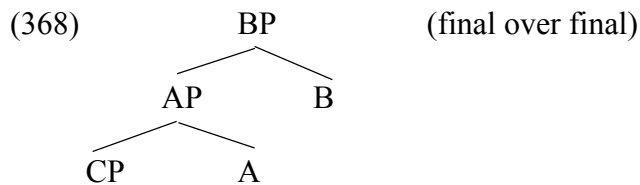
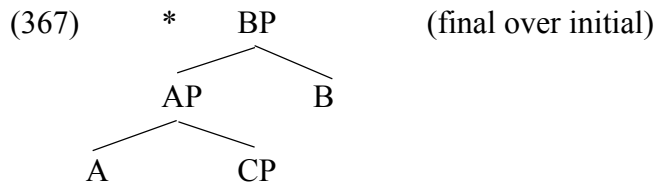
- (365) el cantante de ópera este
 the singer of opera this
 'this opera singer'

Note, finally, that the core of the proposal is not based on height, but on constituency: the root is in fact lower in the structure of the DP than the NP, but the PP argument does not form a constituent with NP, explaining the peripherality of PP arguments.

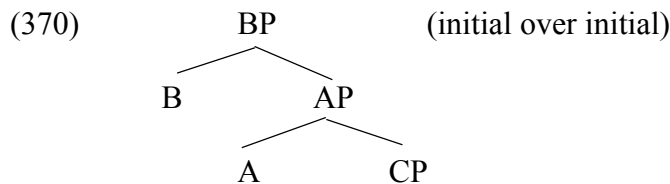
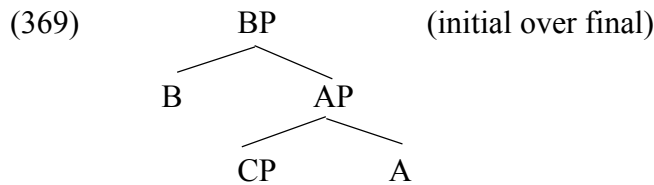
What Adger's approach does not explain directly through the structure is the impossibility of having prepositional constituents in prenominal position. In §3.4 we suggested that the restriction on having prenominal adjectives with PP complements could be a related restriction.

- (366) a. *un de cuentos libro
 a of tales book
 b. *un difícil de leer libro
 a difficult to read book

However, for this second aspect of the position of modifiers a particular proposal might provide valuable insights: the so-called Final over Final Constraint (Biberauer, Holmberg & Roberts 2007). Descriptively, the Final over Final Constraint posits – through an examination of cross-linguistic facts– that a head initial structure cannot be immediately dominated by a head final structure (in other words, that if one constituent is head final, the embedded constituents must also be head final):

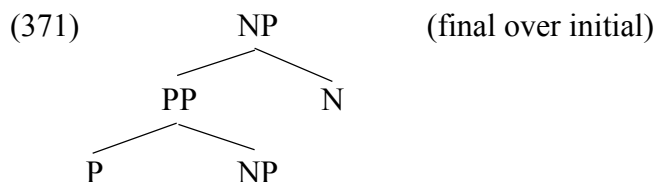


In contrast, when the head is initial, the embedded constituent can be both head final and head initial:

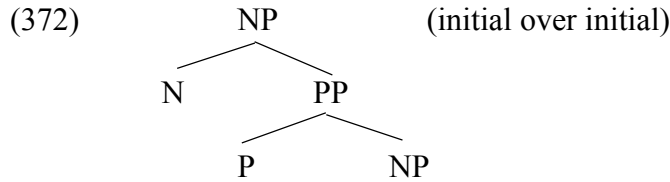


In what follows, we will explore whether this approach can do something to explain the unavailability of the prenominal ordering for PP modifiers. We will see that a number of assumptions about what counts as a head, and what counts as 'final' have to be made, so the result –we think– is not completely positive, but at least worth putting on the table for others to assess it.

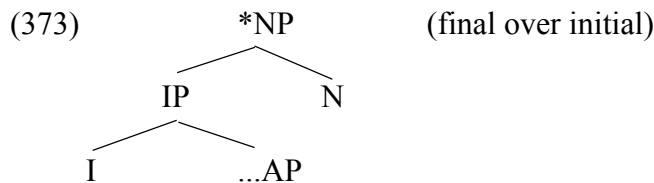
Note that a prenominal PP structure is too close to the ungrammatical configuration in (367). (371) illustrates it assuming that the PP is introduced by an NP, where N is the head; therefore, the PP here is a classifying NP.



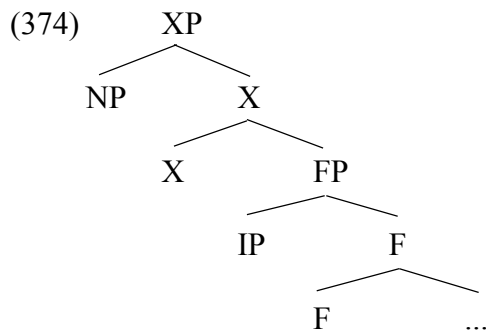
Of course, in order to make compatible the proposal with Cinque's configurations, we are forced to make the assumption that the FP structures that introduce modifiers are the extended projections of NP –in the sense of Grimshaw (2005)– and therefore, in the relevant structural sense, N still counts as the head in such configurations, through feature percolation or through another device. Once that assumption is made, (372) is forced by the Final over Final constraint (cf. 370):



Adjectives are a bit trickier: for this approach to work we must make sure that adjectives will not violate the Final over Final unless they carry a complement, in which case they will force movement of the NP to a higher position. Let us consider first reduced relative clauses. Being internally complex, they are definitely head initial and as such they will violate the Final over Final –we still represent N as the head of the whole, assuming that the FPs are part of the extended projection and count as segments of N–.

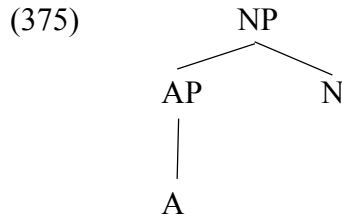


This might be in actuality what forces compulsory movement of the NP above the relative clauses in Spanish: the movement restores the Final over Final Constraint by defining the N head as preceding the relative clause. If NP and X check features, then X can count as N through feature identification.

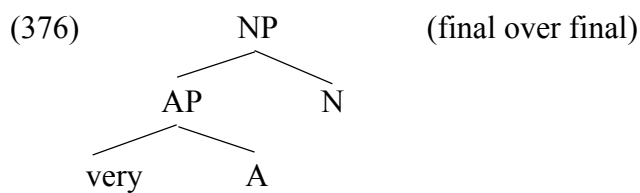


We must highlight at this point that given that English does not force movement of the NP above the reduced relative clause modifiers, it must be the case –according to this proposal– that English either can violate the Final over Final constraint or that there is another way of satisfying it not involving NP movement.

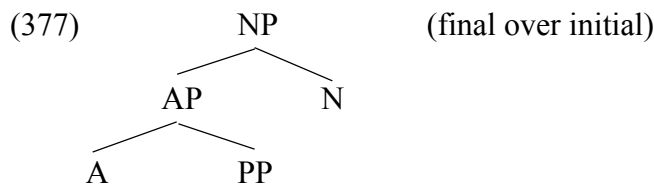
Moving now to the direct modifiers, these have two options. In the first one, only the AP will be present. (375) represents this situation, again treating the FP as an extended projection of N.



Without other constituents, the AP does not count as head initial or head final, so we can assume that it vacuously satisfies the Final over Final constraint, therefore allowing for a prenominal ordering. Importantly, the potential degree phrases merged above the AP should also count as extended projections of the adjective, in such a way that A still is the head.

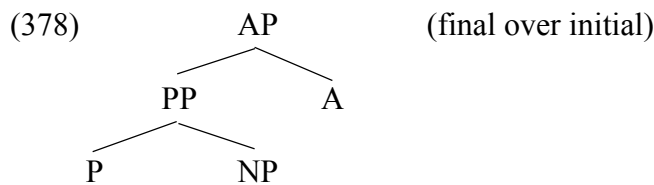


This makes *un muy buen amigo* 'a very good friend' comply with the Final over Final. What would not comply with the constraint would be a direct modifier that contains a PP:



This, again, would have to be resolved by forcing movement of the NP above the AP carrying the PP, which makes the AP forcefully postnominal if it contains PP.

Incidentally, the Final over Final also predicts that when the AP contains a PP, the PP will have to follow it: (378) violates the Final over Final in the same way as a prenominal PP does it inside an NP.



In summary, we have overviewed a number of proposals about the location of PPs inside the noun phrase. The current picture seems to be that the most successful proposals are those where the peripherality of the PP applies only to argument-denoting constituents, and is related to the inability of NPs to introduce arguments by themselves. Irrespective of height, the PP would not form a syntactic constituent with the noun and the adjective(s). This, however, does not explain why in a language like Spanish PPs must always follow the head. We have discussed an approach using the Final over Final constraint that we consider promising in explaining these facts, but for

the approach to work, the notion of head relevant for the constraint has to be somewhat loose, forcing the extended projections of a lexical category to replicate the lexical label of the category, N or A in our case. This, we believe, is worth exploring, but at the time it does not constitute a full account of the phenomenon, which we can consider unsolved.

7. Conclusions

It is now time to wrap up and take stock of the facts that we have discussed.

The first observation is that, factually, the interpretations of nominal modification are pretty well understood, although there are some facts that still could profit from detailed descriptions, perhaps informed by experimental work. Among these, we can highlight the following:

a) The proper relation between subsectivity and restrictivity: as we discussed, restrictivity is the clearest effect of postnominal modifiers in Spanish, but intuitively some subsective prenominal modifiers could have a restrictive effect. We saw that superlatives do allow indeed restrictive interpretations in prenominal position, although we suggested this might be related to their degree interpretation. Still, this is an area where further description would be welcome.

b) The relation between specificity and prenominal modifiers: we saw that in indefinite noun phrases prenominal adjectives impose a specific reading which makes them impossible under the scope of imperatives or generic operators. However, they are allowed in other contexts that should also impose non specific readings, such as conditional clauses. Again, it seems that more detailed empirical work, perhaps comparing contexts, notions of specificity and different (Romance) languages is required in this area.

c) Some of the judgements related to adjective ordering within sequences are more subtle than others; the reader can check that the amount of examples marked in this overview with '??' is significant. This, plausibly, relates to the fact that in adjective ordering there are several factors that have some weight, including phonological and stylistic principles, but it is fair to say that they have not been described in a sufficient depth.

In terms of the analyses available, we have taken sides with one particular implementation –Cinque (2010)–, which we believe has a better chance than other alternative proposals to account for the basic differences between prenominal and postnominal adjectives. The theory involves distinguishing between direct modifiers and more complex (predicative) structures involving adjectives, and allowing for cyclic movement of a constituent containing the NP to a position above all modifiers. Despite the explanatory power of this theory, we have seen in the course of this overview that there are many aspects of the behaviour of nominal modifiers that have not been properly integrated into the existing theories about the syntax and semantics of nominal constituents. Here we highlight a number of them:

a) One basic question that relates to the very definition of 'modification' has to do with the semantic nature of the different classes of adjectives, and specifically with the issue of whether all modification should be considered intersective or not. The question, precisely because it is a basic one, has many sides, including the problem of how to characterise adjectives that cannot be used predicatively or attributively, and the problem of how many variables should nouns come endowed with.

b) NP-movement above direct modifiers is another unsolved issue. There are several types of adjectives that across Romance languages tend to block NP movement past them, such as *presunto* 'alleged' in Spanish, but it is unclear why they should block NP movement. It cannot be the height at which the adjective is introduced, and it does not seem to be triggered by clear phonological or semantic principles, in the sense that the adjectives that must appear prenominal in Spanish do not form a natural class to the exclusion of all the other adjectives.

c) The explanation of why there is a specific ordering inside sequences of adjectives is still missing. We have seen that cartographic approaches using rigidly ordered sequences of heads referring to specific cognitive domains run into trouble, while adjunction theories have to rely on still poorly understood cognitive principles. The approaches that base the explanation on the existence of domains within the nominal structure are promising, but they must be developed further to account for what could be unexpected asymmetries, such as the fact that shape and size adjectives are placed in different regions.

d) Another enigmatic property from an analytic perspective is the specificity requirement that prenominal adjectives impose on indefinite NPs. Given that the empirical distribution of the phenomenon is not very well understood, the kind of structure that underlies such NPs is also not well understood. An enigmatic property of the construction is that in principle we expect specificity to be defined at the determiner (or quantifier) area, which theoretically should be higher than adjectives –remember that Cinque (2010) places adjectives below numerals–. Are qualificative prenominal adjectives merged in a very high position that interacts with specificity at the determiner area? It does not seem so in any obvious sense, because as can be seen in (379) qualificative adjectives can follow temporal adjectives, and temporal adjectives themselves do not impose specificity in prenominal position (380).

(379) **Preséntame a un futuro elegante ministro.*
 introduce-me a future elegant minister
 'Introduce a future elegant minister to me'

(380) *Preséntame a un futuro ministro.*
 introduce-me a future minister
 'Introduce a future minister to me'

e) Finally, we have seen that across different types of modifiers in Spanish, the common restriction is that PPs, or modifiers introducing PPs, must be postnominal. While some results have been obtained in accounting for PP peripherality, the compulsory postnominal nature is not yet properly understood, even if the Final over Final Constraint could be a useful tool in accounting for the pattern.

So, to conclude, there are still very basic properties of nominal modification in Spanish that are not properly understood. We hope that this overview encourages others to explore these issues.

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