

Adjectives within Spanish and French NPs

– Position and Interpretation –

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Noun phrases (NPs) can be expanded with adjective phrases (APs). In this case, APs fulfil the function of modifiers, i.e. optional adjuncts attached to the NP. APs can appear in different kinds of structures, e.g. in attributive or predicative use.¹ Despite the two different syntactic positions of adjectives, it can be said that the primary function of adjectives is the modification of nouns (cf. Demonte Barreto, 2011: 1315), e.g. in comparison to adverbs.

The canonical position of adjectives within the NP is language-specifically restricted. In some languages, adjectives canonically occupy the prenominal position, while in others, they appear postnominally. There is general agreement in the literature that German and English belong to the former class, while Spanish and French tend to be classified as belonging to the latter. Despite this classification into prenominal vs. postnominal modification, some adjectives in languages with prototypically postnominal modification like Spanish and French can appear *only* prenominally, other can appear *only* postnominally, and a large number of French and Spanish adjectives show more flexibility with respect to the position they can occupy within the NP.

Other syntactic constraints (on coordination, complement of adjectives and modification of adjectives) have been highly discussed in the literature (Arnold and Sadler, 1992, 2013; Abeillé and Godard, 1999, 2000).

The question that we are going to deal with is whether the different syntactic positions adjectives (without complement or modifier) may or may not occupy within the NP correlate with a difference in interpretation of these adjectives. We are going to see that some regular pattern emerge and will propose an HPSG analysis of the phenomenon.

1 Correlation between interpretations and positions

One of the difficulties trying to map the position of an adjective to one specific interpretation is the vast quantity of terms used in the literature for classifying adjectives and/or their interpretations. This terminology refers on the one hand to syntactic aspects, and on the other hand to semantic ones, while it is not uncommon to find the same terminology applying to the syntax-semantics mapping. Here, we give a definition of the terminology used in our presentation and map it – as far as possible – to the positions these interpretations can occupy. This terminology should not be seen as a categorial classification of adjectives, i.e. a specific adjective does not belong exclusively to one category *or* another. Moreover, most adjectives can be *interpreted* in different of the given categories. The classification of interpretations, as we have done it here, leads finally to the following typology of interpretations which will be clarified in the following subsections.

1.1 Restrictive – non-restrictive

A *restrictive* modifier narrows the set of possible referents of the modified element, being essential for their interpretation; while the *non-restrictive* modifiers are taken not to contribute to the “at issue” content of the modified element (cf. McNally and Kennedy, 2008: 7), being in some way inessential for their interpretation. For this reason, the more definite an NP is, the more likely is the modifying AP to be interpreted as non-restrictive.²

¹The terminology *attributive – predicative* is misleading since it is sometimes used to label a semantic relation, sometimes for a syntactic position, and some other times for a correlation of syntactic structure with a specific meaning. Hence, we will avoid this terminology.

²Non-restrictive modifiers are sometimes taken to be parenthetical or appositional statements. As such, they do not interact compositionally with the modified elements (cf. Heim and Kratzer, 2000: 64).

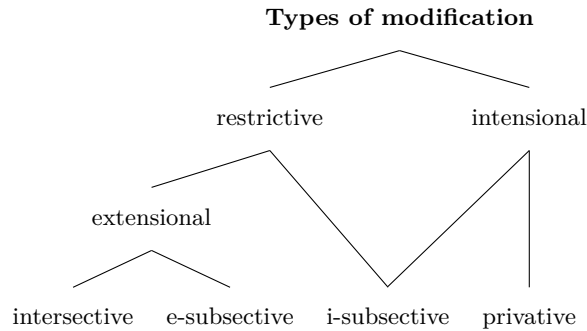


Figure 1: Semantic types of modification

An adjective is therefore *restrictive*, iff

1. the set of entities denoted by the noun entails less entities after the modification, and
2. the entities denoted by the modified NP belong –to some extent³– to the set of As as well as to the set of Ns.

1.2 Extensional – intensional

The dichotomy extensional – intensional refers to the kind of “meaning” modified by the adjective.⁴ The *extension* of an expression can be paraphrased as its reference, i.e. the extension (or denotation) of a noun is the set of entities for which the predicate of the noun holds. For example, in a specific world w_1 the extension of “student” is the set of human beings, that are students (cf. Dowty et al., 1981: 141ff). On the other hand, the *intension* of an expression is the meaning of the expression in any possible state of affairs or in any possible world. That is “the intension of an expression is nothing more than all varying extensions (denotations) the expression can have [...]” (Dowty et al., 1981: 145). Taken this into account, extensional modifiers are limited to the restriction of the set of *referents* of the modified noun. Hence, they are restrictive, as explained above. Intensional modifiers, in contrast, change internal aspects of the meaning of the noun yielding to another set of possible referents in respect to some further features. Intensional modification has always an effect on the noun extension, but not necessarily restricting it directly.

An adjective is therefore *extensional*, iff 1 and 2 hold, and

3. the extensional set denoted by N has been restricted *directly* through the set of A, and not through internal modification of one or more parameters of the meaning of N.

1.3 Intersective – non-intersective

The *intersective* readings of adjectives hold when the restriction of the set of entities denoted by N is made through intersection. That is, the denotation of the modified NP is the same as the *intersection* of the denotation of the modifier with the denotation of the noun (cf. Higginbotham (1985: 562), McNally and Kennedy (2008: 3)) and can be paraphrased with a conjunction. Furthermore, as Kamp (1975: 124) claims, the extension of the intersective used adjectives “[...] is not affected by the nouns with which they are combined.” This fact does not hold for non-intersective usages.

An adjective is therefore *intersective*, iff 1, 2, and 3 hold and

4. (addition to 2) the extension of the modified noun can be interpreted as the intersection of the set denoted by N with the set denoted by A.

1.4 Subjective (e-subjective – i-subjective) and privative

The subjective interpretation of adjectives is fuzzier, since it constitutes – following Kamp (1975: 125) – the biggest class of adjective interpretations. It is controversial if the denotation of them build an intersection

³That is, to the extent that the set N can intersect the set A (intersective), or the A can be a subset of N (subjective).

⁴A similar distinction has been proposed by Bolinger (1967) who called it reference vs. referent modification.

with the denotation of the noun, or if it is more a matter of a subset relation (cf. Demonte Barreto (2011: 1321), Heim and Kratzer (2000: 68ff.)). Among the subsectives, the so-called *dimension* adjectives (e.g. *big*) and *value* adjectives (e.g. *beautiful*) are often included which we have baptised e-subsective and i-subsective, respectively. It is difficult to say that the entity which is a *big ant* is in the set of *big entities*, since e.g. elephants should also be included in the same set, but they are not the point of reference for the comparison. A similar problem holds for i-subsective reading of *beautiful*. John could be a *beautiful dancer*, being at the same time a clumsy carpenter. The subsective class is therefore gradual with respect to some aspect of the meaning of the noun. On the other hand, it is possible to say that in the set of ants, there exist a subset of big ones, or that in the set of dancers there is a subset of beautiful ones and the mentioned ant and John belong to these sets, respectively. We have maintained the division of subsectives into two different interpretation classes, but in order to avoid the too specific names “dimension” and “value”, which point at lexical properties of adjectives more than at their interpretations, we have called them e-subsective (*e* for extensional) and i-subsective (*i* for intensional). In fact, we are trying to separate the interpretation of adjectives where the modifier restricts directly the set of referents of the noun (its extension) from those where internal aspects of the meaning of the noun (its intension) are being modified.

The most crucial property of the last class – the *privative* – is that the extension of the combination of a privative used adjective with a noun does not denote an entity which has the same property as the noun. Thus, a *former president* is not a *president* (cf. Kamp, 1975: 125). This use of adjectives is intensional yielding to a new extension which is not inside the previous extension of the noun, and therefore not restrictive either.

Taking this facts into account, we can postulate further restrictions for our definitions:

An adjective is *e-subsective*, iff 1, 2, and 3 hold, and

5. (addition to 2) the extension of the modifier in the context used can be interpreted as a subset of the set denoted by the modified N (Paraphrase: *x* is *A* for an *N*).

An adjective is *i-subsective*, iff 1 and 2 hold, and

6. the restriction of the extension of the N (through the modifier) builds a subset which has been yielded through intensional modification of N.

An adjective is *privative*, iff 1 and 2 does *not* hold, and

7. the modification of the NP has been yielded through intensional modification, and
8. the extension of the modified NP has not any common elements with the extension of its N.

1.5 The correlations

The clear cases with respect to interpretation and position correlations in Spanish and French as well concern the intersective and i-subsective readings of adjectives.

The lexical classes of colour, texture, form, and provenance adjectives tend typically to have intersective readings. Adjectives belonging to this classes occupy the postnominal position within Spanish and French NPs (cf. Bouchard, 1998; Abeillé and Godard, 1999).

<p>(1) French</p> <p>a. la voiture <i>rouge</i> the car red 'the red car'</p> <p>b. ?? la <i>rouge</i> voiture the red car</p>	<p>(2) Spanish</p> <p>a. el coche <i>rojo</i> the car red 'the red car'</p> <p>b. ?? el <i>rojo</i> coche the red car</p>
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The examples 3 and 4 show adjectives which in combination with the noun can achieve only an i-subsective interpretation. This fact is triggered through the semantic of the noun ‘friendship’ which as an abstract noun is not compatible with the e-subsective reading of the adjectives. Furthermore, these examples show that i-subsective interpreted adjectives take the prenominal position in both languages.

(3) French

- a. une *belle* amitié
a beautiful friendship
'a remarkable friendship'
- b. *une amitié *belle*
a friendship beautiful

(4) Spanish

- a. la *gran* amistad
the big friendship
'the remarkable friendship'
- b. *la amistad *grande*
the friendship big

While the judgements for Spanish are quite clear related to e-subjectives and privatives, the former being postnominal (cf. 5) and the latter prenominal (cf. 6), French shows more variation in these two classes. Spanish reveals the tendency to keep the prenominal position for intensional interpreted adjectives (i-subjective and privative), while the extensional interpretations (intersective and e-subjective) tend to show up postnominally.⁵

(5) Spanish: e-subjective

- a. la *gran* casa
the big house
'a big house (big in size)'
- b. la casa *grande*
the house big
'a big house (big in size)'

(6) Spanish: privative

- a. el *próximo* presidente
'the next president'
- b. el presidente *próximo*
'the next president'

On the other hand, French exhibits a clear preference of prenominal position for intersective readings, and of postnominal position for i-subjective reading, but being variable with respect to e-subjective and privative readings.

2 Position and interpretation: the analysis

Previous works on the position of the adjective with an HPSG account are Arnold and Sadler (1992) for English and Abeillé and Godard (1999, 2000) for French. To our knowledge there is no such analysis for Spanish adjectives in HPSG. All previous analysis concentrate on the syntactic aspect of the phenomenon, but give no exact account of the semantics.

Syntax: The syntactic aspect of our analysis is borrowed directly from Abeillé and Godard (1999, 2000). Their approach, a feature-oriented approach, goes against a more “categorical” approach, supported for example in the HPSG/LFG framework by Arnold and Sadler (1992, 2013)⁶. To account for the alternation of the position of the adjective, Abeillé and Godard (1999, 2000) introduce a weighting attribute called *WEIGHT* bearing a value *lite* or *nonlite*.⁷ This weighting apply to all signs. The weighting of words is defined in the lexicon and can be unspecified. Roughly speaking, the linear rules applying for the weighting of nouns and adjectives is the following: *lite* adjectives are prenominal and *nonlite* postnominal. Coordination, modification and complementation of adjectives may change the value of the weighting (by building different phrases).

(7) LP rules for head-adjunct phrases (from Abeillé and Godard, 1999: 22)

- a. head-adjunct-phrase \mapsto Non-head-dtr [*WEIGHT lite*] >Head-Dtr
- b. head-adjunct-phrase \mapsto Head-dtr [*WEIGHT lite*] >Non-head-Dtr [*WEIGHT nonlite*]
- c. head-adjunct-phrase \mapsto Head-dtr [*HEAD noun*] >Non-head-Dtr [*WEIGHT nonlite*]

⁵The non-restrictive readings of adjectives are a special case, since typically extensionally interpreted adjectives (e.g. colour adjectives) can be used non-restrictive occupying in such a case the prenominal position (cf. Demonte Barreto, 2008).

⁶We call it a “categorical” approach, because the whole syntactic constraint relies on categorial restriction. Arnold and Sadler (1992) state that postnominal adjectives can only modify an \bar{N} with a saturated *COMPS*. In Arnold and Sadler (2013), they state that only an \bar{A} (i.e. words that do not take complement, see Toivonen (2003)) can premodify a noun. For several reason that we are not going to explore there, these analysis cannot be adopted for French and Spanish.

⁷They also use the weighting to account for other word ordering issues, such as the position of adverbs or of the subject in respect of the verb.

Semantics: Traditionally, the ambiguity stated cross-linguistically for many adjectives has led to the assumption that there are two homonymous lexemes. Siegel (1976) proposes to split what have been considered so far as one category, the adjectives, into two separate categories based on an extensional–intensional distinction⁸. Abeillé and Godard (1999, 2000) have a very similar approach. This kind of analysis has the obvious disadvantage of duplicating the lexical entries. Furthermore, Larson (1998: 4f.) demonstrates that this kind of analysis does not exactly come up with the underlying logical implicatures. He proposes an other model based on the introduction of an event parameter (see Davidson, 1967), and we will borrow this idea in our semantic analysis. However, Larson’s analysis does only make a distinction between extensional and intensional semantics⁹ and does not cover all semantic variations we could establish in the previous section.

The semantic analysis we propose is grounded in Minimal Recursion Semantics (Copestake et al., 2005). We first introduce an event variable¹⁰ in the semantics of the nouns: we assume a feature SITUATION (SIT) with a value of type *event* in the elementary predication (EP) associated with the noun.¹¹ *index* types and *event* types are the two subtypes of a same supertype *index_or_event*. The value of this SIT is coindexed with an INDEX feature, also named SIT¹². The CONTENT value of *trabajador* is given as an illustration in 8:

$$(8) \text{ CONTENT value of } \textit{trabajador} \text{ (‘worker’)}$$

$$\left[\begin{array}{l} \textit{mrs} \\ \text{HOOK|LTOP } \boxed{1} \\ \\ \text{INDEX } \boxed{2} \left\{ \begin{array}{l} \textit{index} \\ \text{PER } \textit{per} \\ \text{NUM } \textit{num} \\ \text{GEN } \textit{gen} \\ \text{SIT } \boxed{3} \textit{event} \end{array} \right\} \\ \\ \text{RELS } \left\{ \begin{array}{l} \textit{_rel_worker} \\ \text{LBL } \boxed{1} \\ \text{ARG0 } \boxed{2} \\ \text{SIT } \boxed{3} \end{array} \right\} \end{array} \right]$$

Following Larson (1998), we consider that all head-adjunct phrases in which the modifier is an adjective are *intersective phrases* based on Copestake et al.’s terminology. The hierarchy of these *intersective phrases* reflects the hierarchy we found out to be relevant for the different interpretations of adjectives in our section 2.

The semantic representation of restrictive interpretations introduces two EPs:

$$(9) \text{ restrictive-interpretation } \mapsto$$

$$\left[\begin{array}{l} \text{SS|LOC|CONT} \left[\begin{array}{l} \text{HOOK|LTOP } \boxed{1} \\ \text{RESTR } \boxed{5} \oplus \boxed{6} \left\{ \begin{array}{l} \text{LBL } \boxed{1} \\ \text{ARG1 } \textit{index_or_event} \end{array} \right\} \oplus \left\{ \begin{array}{l} \textit{scalar_rel} \\ \text{LBL } \boxed{1} \\ \text{STANDARD } \boxed{3} \\ \text{A-VALUE } \boxed{4} \end{array} \right\} \oplus \boxed{7} \end{array} \right] \\ \text{CONTEXT|BACKGRD } \{ \boxed{3} \text{ SC-R } \boxed{4} \} \\ \text{H-DTR } \left[\text{SS|LOC|CONT|RESTR } \boxed{5} \right] \\ \text{NON-H-DTR } \left[\text{SS|LOC|CONT|RESTR } \{ \boxed{6} \} \oplus \boxed{7} \right] \end{array} \right]$$

The first EP is similar to the semantic representation associated with adjectives in Copestake et al. (2005), but the ARG1 feature takes an underspecified value of type *index_or_event*. Extensional interpretations constrain ARG1 to take a value *index* (coindexed with its own INDEX) and i-subsective interpretations constrain ARG1 to take a value *event* (coindexed with its own INDEX|SIT). The second EP introduced by the adjective in restrictive interpretations in 9 is a scalar relation holding for the modification under question between a certain standard¹³ value in the given context (for example: a size above which a man is considered by the speaker as “big”) and the actual value referred to (for example: the actual size of the man). We propose the denotation of the relation holding between the standard value and the actual

⁸Our terminology.

⁹In his terminology: intersective reading and non-intersective reading.

¹⁰Sag et al. (2003: chap. 5) also assume an event variable of type *event* as the value of a feature named SITUATION, which is a feature of the restriction associated with a substantive.

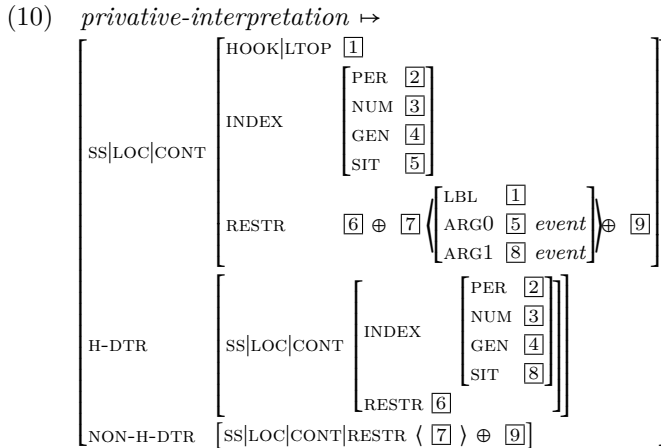
¹¹We leave open the question whether every noun should introduce an event variable. We also will not decide whether there should be subtypes of *index* introducing events and other subtypes which do not. The *event* variable is probably not an atomic value (see Van Eynde, 2000), but we do not develop further its exact structure in this paper.

¹²it would also be coherent with the terminology adopted that the value of INDEX|SIT be coindexed with the value of ARG0 and that the value of INDEX be coindexed with the value of ARG1. However, this may have consequences on the representation of other EPs as well. We preferred to only add the event variable in the EP of substantives without modifying the rest of the EP.

¹³The idea was already present in Pollard and Sag (1994: 329) who assume a feature named STANDARD but do not develop further its role in the analysis.

value to take place in the background. As it is a scalar relation, the kind of operator used there would be $<$, $>$ or $=$.¹⁴

The privative interpretation introduces a second event and makes this second event the actual event of reference, while the relation holding between the second event and the event introduced by the noun head depends on the meaning of the adjective. The semantic representation of privative interpretations introduces only one EP:



Again, the sort of relation holding between the event introduced by the adjective and the event introduced by the noun is asserted in the background and depends on the meaning of the adjective. For example, the relation between [5] and [8] for the Spanish adjective *potencial* ('potential') would be a modal one expressing possibility.

On this basis, it is possible to determine the lexical entries of adjective without having to assume homonymous entries. On the contrary, "ambiguous adjectives" can be left unspecified with regard to the particular interpretations they can have. For example, adjectives like the spanish *gran(de)* ('big') or the french *bon* ('good') can have an i-subjective ('big in size' and 'behaving nicely') or an e-subjective ('remarkable' and 'doing his job well') interpretation. The relation in background must be $>$ or $<$. They also have no ARG0 (the privative interpretation is ruled out).

Linking syntax and semantics: Given that constraints on the possible interpretations are fixed in the lexicon, there is no need to specify in the lexicon the weighting of the adjectives. The constraints exposed previously can be shared between Spanish and French. The Spanish specific constraints are that an extensional interpretation has a nonlite weighting and a privative interpretation a lite weighting. In French, the intersective interpretation has a weighting nonlite and the i-subjective interpretation the weighting lite. The e-subjective and privative interpretations does not lead to syntactic constraint.¹⁵

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¹⁴In an intersective interpretation, the standard value is identified with the actual value. On the contrary, in e-subjective and i-subjective interpretations, the relation holding between the standard value and the actual value are constrained not to be equal.

¹⁵Actually, we could not identify a clear correlation between semantics and syntactic behaviour for adjectives which have a potential privative interpretation in French. Many of them are unconstrained, but *ancien* ('former') for example appears only prenominally. We have to leave this question open for the moment and come back to it in further research.

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